THREE WATERS
Asset Management Plan 2024 - 2034

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WHAKATĀNE District Council
Kia Whakatāne au i ahau

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1. Executive summary

1.1 This Asset Management Plan

This asset management plan (AMP) outlines the current state, performance and quantum of three waters assets. It describes present and future days pressure on service delivery and details an investment plan proposed over the next 10 years. This AMP takes a detailed view over the next 10 years and links into Council's Infrastructure Strategy, taking a longer and more holistic view of the Council's wider infrastructure portfolio over the next 30 years.

1.2 Three Waters in Whakatane District in 2024

Like other local authorities during the 2020-23 period, we worked to map out what a water entity might look like. As part of that an 'Entity B' needs-based unconstrained AMP was produced in draft. This work was moderated by external experts and undertaken alongside other local authorities in the grouping. For our Council, it included a proposed 10-year capital work programme totalling almost $440M. This represented the value of investment required to meet drinking water, renewal, growth and environmental compliance over that period. Notably, this included a $200M wastewater treatment plant upgrade programme to bring four treatment plants up to modern standards.

With the rise of the new coalition government, the three waters assets are now firmly back in our hands. We do not have the capacity to manage this level of investment. In fact, through the LTP process, Council has had to take a balanced approach and reduced this programme to $170M. This was managed by reducing the level of renewals to 70% of the desired rate, reducing the level of investment into resilience/improvement projects and entirely removing the physical works costs of upgrading the wastewater treatment plans. For the latter, this is a signal that this level of investment is unaffordable to our communities at present until alternative funding and financing options are available. At this stage, the best we can do is to undertake a thorough approach to reconsenting – they expire in 2026 – and lodge new consent applications. Any upgrading works resulting from such consenting lies outside the ten-year planning period.

1.3 This Plan

This AMP outlines the systematic way we approach maintaining and where possible extending, improving and renewing our assets and coping with the issues we face.

1.4 Setting the scene

Whakatāne District Council owns and operates three waters infrastructure that serves communities throughout the Eastern Bay of Plenty, from Ōhope in the east, Matatā in the west and as far inland as Murupara. The networks provide services in the six largest communities throughout the district with an asset gross replacement cost of about $650 million. The population served is approximately 30,000, spread across urban and rural communities.

The main objective of this Asset Management Plan (AMP) is to set out how we prioritise investment for infrastructure assets including how we will renew current infrastructure and plan for new assets. This plan includes details of three waters asset inventory, asset condition and performance, future, renewal and operational planning and the capital and operational investment decision making and its outcomes. Our waters activities contribute primarily to the following community outcomes:

- Strong, connected, interdependent, diverse communities
- Constructively and collaboratively engaging with Iwi Māori
- Integrating nature into our decision-making

- Thriving circular economies.

To achieve these objectives, this AMP is developed under the International Infrastructure Management Manual (IIMM) 2020 framework, and we use 'Adapt Solutions' platform software for meeting all our asset management requirements.

1.5 What we do

We provide drinking water to about 30,000 customers, collect and treat wastewater from around 12,000 homes, businesses and industries and provide stormwater services to protect roads and communities from flooding. We manage, maintain and operate nine water supply schemes, six wastewater schemes and nine stormwater schemes.

1.6 Why we do it

These services are delivered by local authorities within New Zealand. Quality drinking water supply, wastewater and stormwater services are essential for protecting public health, safeguarding the environment, respecting Te Mana o te Wai, complying with regulations, and enhancing community wellbeing.

We aim to manage resources in a sustainable way and for our infrastructure and facilities to be modern and robust. Our work is guided by strategic frameworks, which detail how we plan to ensure the development of resilience, and other strategic documents.

We operate under resource consents authorised by the regional council and are required to meet drinking water standards and other key legislation.

We deliver services to agreed levels and ensure these are met by:

- Maintaining and renewing assets.
- Investing capital in response to increasing demands for growth (greenfield and infill).
- Improving the quality of stormwater discharges to address waterway degradation.
- Providing a high quality, clean, safe and sustainable drinking water supply as an essential service.

1.7 Needs based assessment

As part of the lead-in work towards three waters reform entities we carried out detailed analysis of linear assets, their age and assessed condition. This has given rise to a renewal framework. This work was carried out alongside peer organisations and had the benefit of external moderation to ensure consistency. As such it is considered that good information exists about asset condition and the requirement for asset renewal.

This plan talks about the need to defer big-ticket investment in new assets. Nevertheless, the need to continually assess the condition of existing assets and plan for their upgrade or renewal remains vitally important.

1.8 Asset condition and performance

It is essential that we know the condition of our assets and how they are performing. An asset register including asset condition is housed within the AMS to enable us to plan for future expenditure and make management decisions regarding maintenance and renewals.

We have carried out a number of condition assessment projects over the past 5 years, including water reservoirs and stormwater pumping stations to ascertain their condition and performance. In addition to this, we have internal CCTV capabilities to undertake the inspection, reporting and assessment of gravity pipe assets.

The below graph is an indication of the length and age of our piped network.

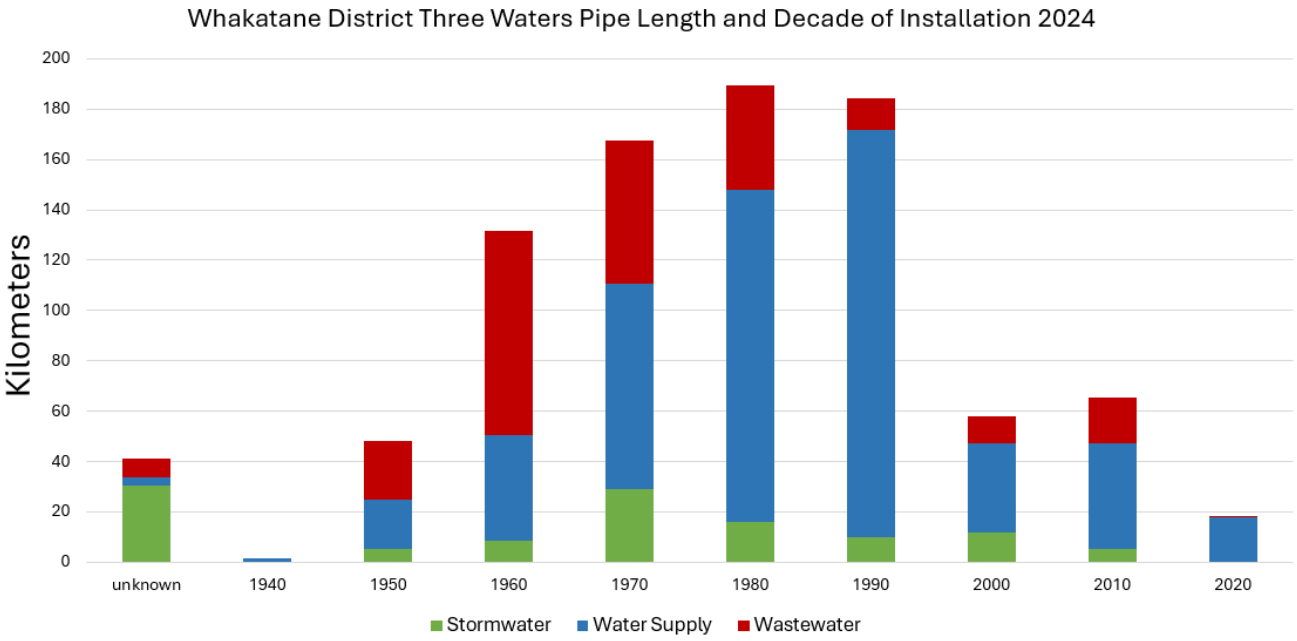


Figure 1A – Linear assets – Activity and installation decade

1.9 Future levels of service and performance measures

To ensure effective management of service levels, we will adopt the latest national level of service framework. This framework is crucial for aligning investment decisions with the maintenance of service levels. It is designed to be adaptable, establish a benchmark, promote consistency, encourage stakeholder engagement, and provide a means of measurement.

When developing future levels of service, we consider various factors such as service quality, cost, and risk. To maintain flexibility, the service level targets will be adjusted accordingly. The process will involve analysing the benefits, outcomes, and potential risks associated with different service levels through a cost, service, and risk optimisation process. By adopting a level of service framework and considering multiple factors, we aim to optimise its service provision while managing costs and risks effectively.

1.10 Planning for the future

The population of Whakatane District is expected to grow by about 20% in the next 30 years. Based on insights from the three waters asset condition and performance, it is evident that we have a significant need to address asset renewals and upgrades to improve current levels of service and to provide for growth. The demand for capital investment over the initial years of the LTP is projected to be dominated mainly by resource consent compliance and renewals.

1.11 Focus of the capital and operational investment plan

This asset management plan lays out the strategy for investing in assets to achieve desired services and community outcomes. It identifies areas for improvement, determines the necessary capacity to facilitate growth, and details plans for maintaining, enhancing, and renewing the existing asset base.

1.12 Capital forecast

The capital forecast for three waters over the next 10 years is shown below. Approximately $214M of capital investment is proposed over the next decade – 49% for drinking water supply, 42% for wastewater and 9% for

stormwater. As can be seen there is a heavy spend on wastewater until the end of Y5. Drinking water capex varies as major projects are delivered. Stormwater capex is small and declines over time.

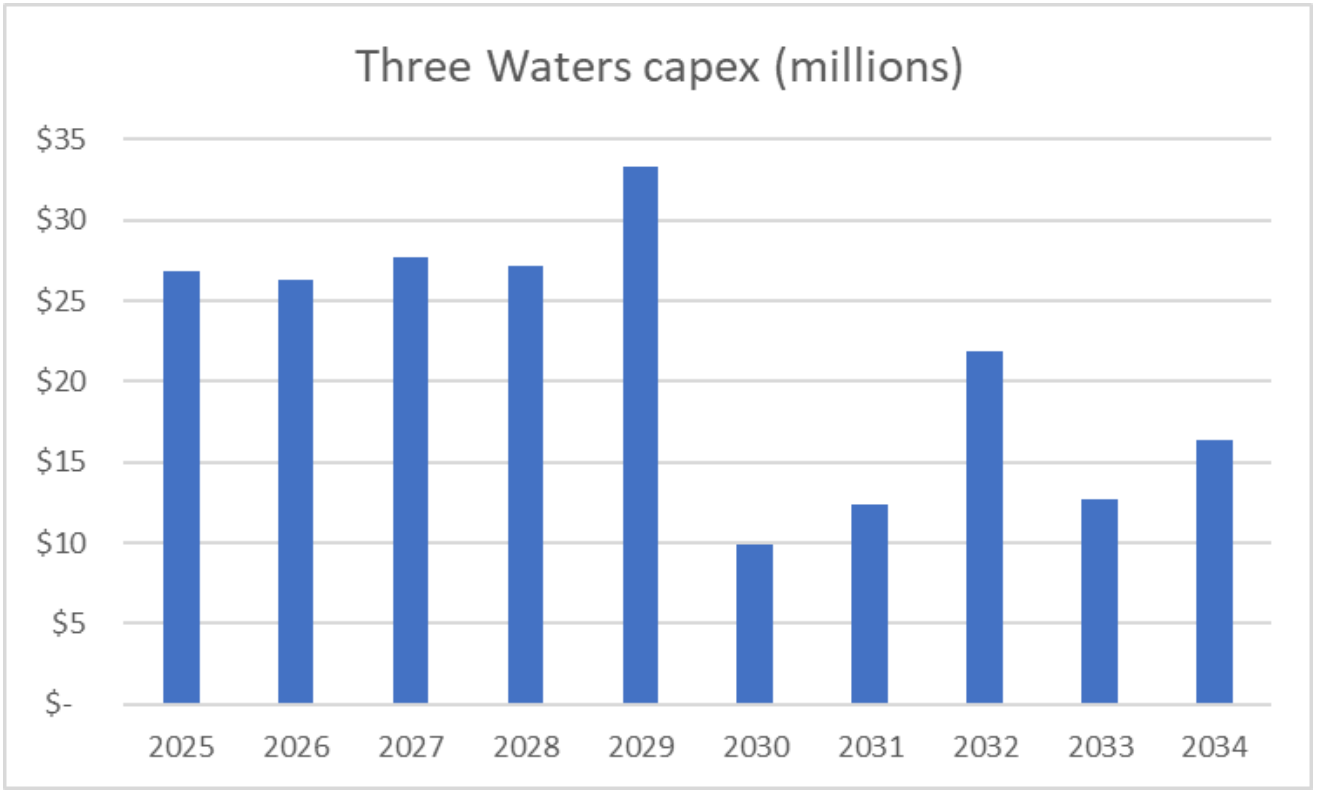


Figure 1B – Proposed Capex – Y1-Y10

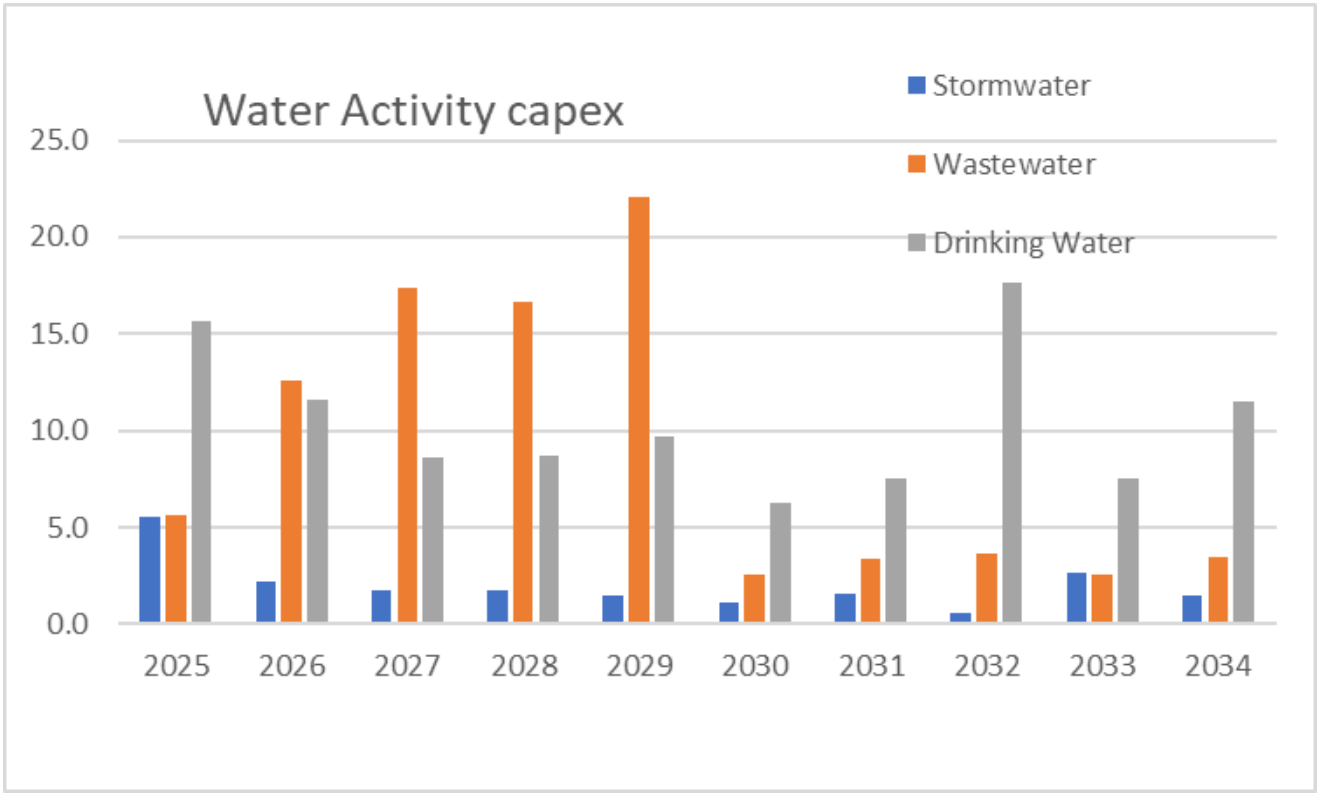


Figure 1C – Proposed Capex – Split by waters activities

1.13 Operational expenditure forecast

The operational forecast for three waters over the next 10 years is shown below

Drinking Water	$ 158.4
Wastewater	$ 107.5
Stormwater	$ 60.6
	$ 326.6 Million

Approximately $327M of direct operational investment is required over the next decade – 48% for water supply, 33% for wastewater and 19% for stormwater. The total operating expenditure is primarily driven by depreciation (34%) then direct costs (31%) and debt servicing (18%). Looking ahead, further information is contained in the Development Contributions policy, the Revenue & Financing Policy and Draft Fees & charging schedule.

2. Introduction

2.1 Purpose

This plan outlines our approach to managing our three waters assets and services during the period 1 July 2024 to 30 June 2034. The asset management plan sets out the investments we need to make over the next ten years to continue providing safe and reliable water, wastewater and stormwater services to our customers.

2.2 Objectives

The objectives of this plan are to:

- Highlight our approach to managing long life assets by providing clear descriptions, objectives and targets for them.
- Be transparent with our stakeholders, particularly around the risks inherent in our networks and the systematic processes in place to mitigate those risks.
- Explain the challenges we face as an organisation and how these will be addressed by our funding application.
- Demonstrate the links between the plan objectives, our Asset Management Policy, Strategic Asset
- Management Plan, corporate goals, business planning processes, and plans.
- Provide visibility of forecast investment programmes to external users of the plan.
- Provide updates to stakeholders on improvements to our asset management practices.

2.3 About this plan

Assets we manage – an overview of three waters assets and services with an assessment of condition and criticality.

Current levels of service and performance – an overview of different levels of service provided to our communities and an assessment of asset and service performance.

Future levels of service and performance measures – proposed levels of service based on industry and regulator expectations to be confirmed with stakeholders and communities.

Planning for the future – factors affecting future service demand and measures required to meet demand in the short and long term.

Renewal planning – an overview of key renewal drivers and themes and renewal planning strategy considering asset condition, performance, and criticality.

Lifecycle management – an overview of current and future practices around operations and maintenance, renewals, creation, and disposal of three waters activities.

Managing risk and resilience – an assessment of how risks, including climate change and natural hazard risks, are incorporated into the management of water activities to enhance resilience of water service provision to disruptions.

Operational planning – operational and maintenance plans and strategies and post-event response planning to minimise disruptions to system operation.

Investment decision making – the transitional and proposed future decision making frameworks.

Plan monitoring and improvement – the level of current and desired asset management practices along with recommendations to deliver and monitor improvements.

2.4 Water sector regulators

Three waters activities and services provided are regulated via Taumata Arowai and Regional Councils. Respectively, these organisations provide regulatory controls for drinking water quality and environmental compliance. Councils must comply with standards and report on performance measures set by these regulators. As such, they are key stakeholders in this plan.

New Zealand's drinking water regulator, Taumata Arowai, is dedicated to the oversight and management of the country's freshwater resources, with the primary goal of safeguarding drinking water quality. Taumata Arowai sets national standards for drinking water services, monitors compliance, and promotes effective water management practices across various sectors. Current drinking water standards and quality assurance rules are in place. Future wastewater policies and standards are anticipated.

Regional Councils develop and implement regional policy statements and plans that guide land use, resource management, and environmental protection. They monitor and enforce regional rules and resource consent compliance.

3. The assets we manage

3.1 Three waters networks overview

Several diagrams follow to graphically display information about our three waters networks. Information shown relates to number of schemes, their magnitude, length of linear assets, drinking water use, water losses, age of assets and service coverage.

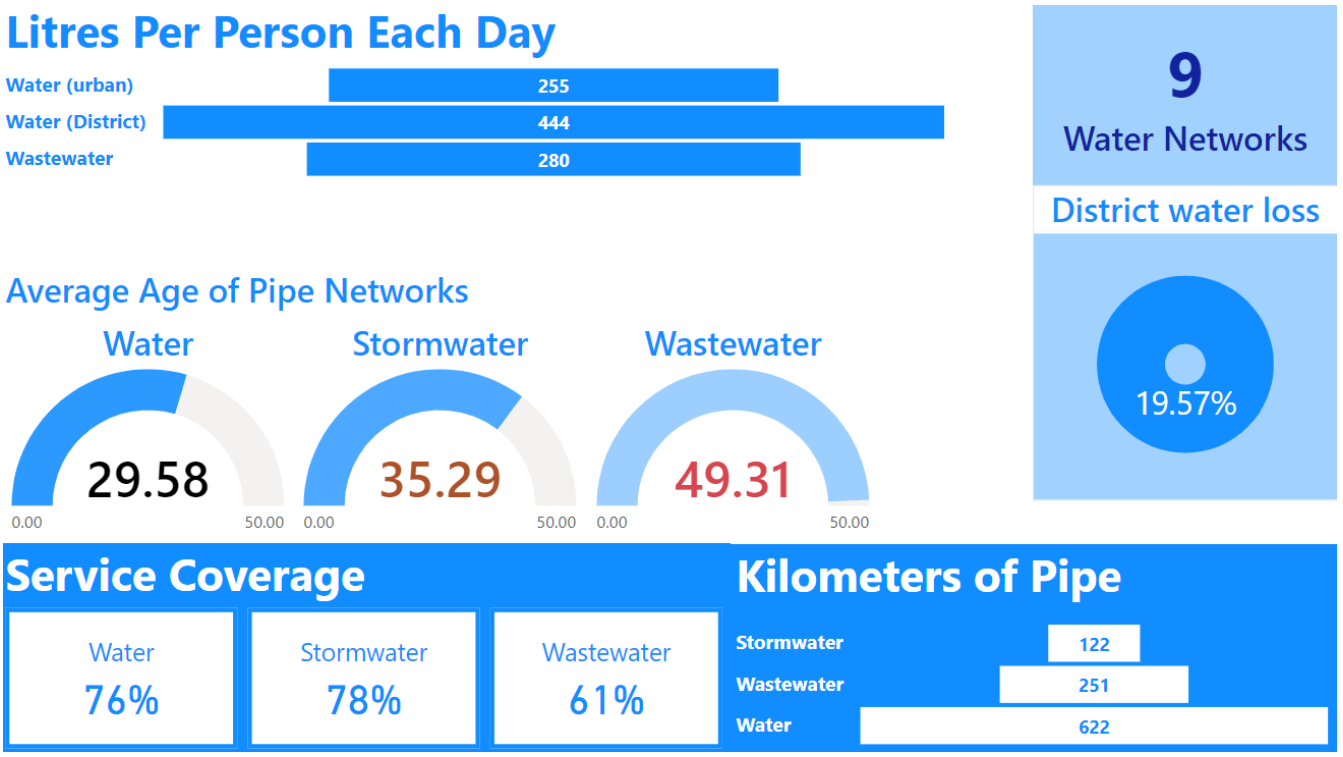


Figure 3A – Three waters info snapshot

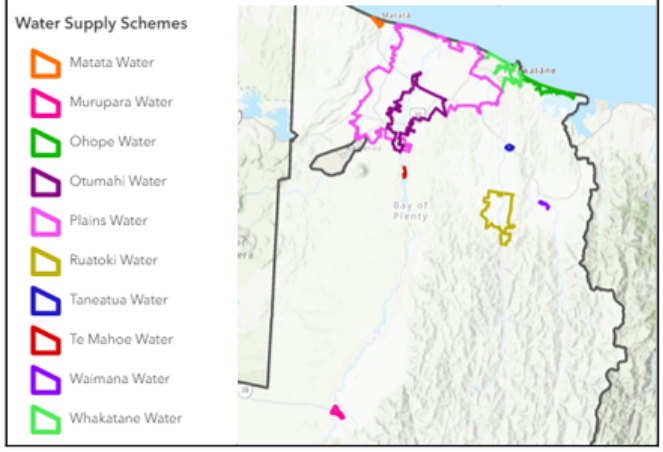
3.1.1 Water Supply

The Council provides drinking water to over 13,490 households and businesses throughout the district. The drinking water supply systems treat raw water to make sure a safe continuous supply is available to customers at a suitable pressure and quantity. The Council's drinking water supply system also provides water for fire services in urban areas.

Treatment varies between schemes, from chlorine, microfiltration, UV, and combinations of these.

The Council's water network includes:

- 11 treatment plants – 9 schemes
- 23 water storage reservoirs
- 5 water pumping stations
- 609 km of water supply pipelines

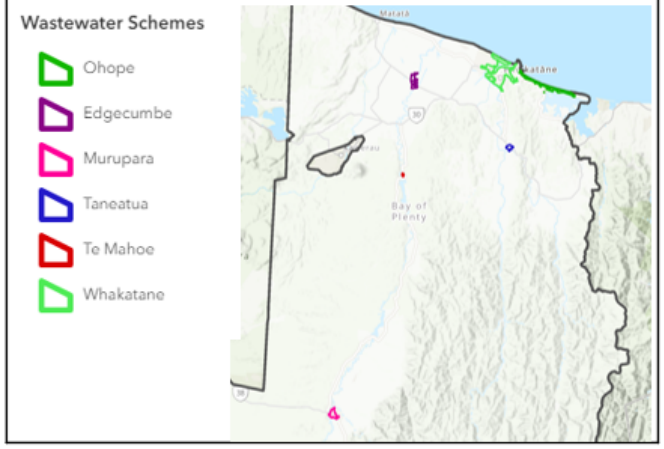


3.1.2 Wastewater

The wastewater system collects wastewater from connected houses and businesses (generally in urban areas), treats it and disposes of it. This activity also includes the Council's tradewaste function which includes the monitoring and management of high volume and/or high strength wastewater from approximately 300 businesses.

The Council's wastewater network includes:

- 6 Treatment plants
- 55 Pump stations
- 2,890 Manholes
- 40 km of wastewater rising/pressure pipe assets
- 206 km of gravity pipe assets



3.1.3 Stormwater

The Council manages eight stormwater schemes which cover over 1,700 hectares of land and 78% of the population in the district. The stormwater systems are designed to take stormwater away from built-up urban areas and disperse it within our waterways to minimise the effects of flooding on property and the risk to human life.

The Council's stormwater network includes:

- 20 Pump stations
- 21 storage/retention ponds
- 1,678 Manholes
- 20 km of open drains
- 94 km of pipe assets

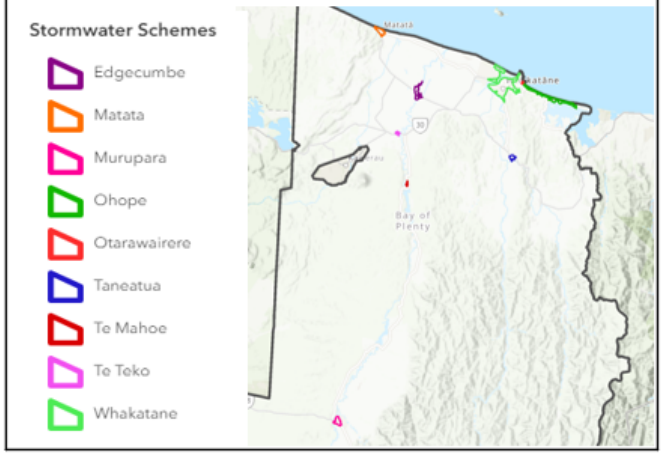


Figure 3B – Three waters assets by geographic location

Activity	GRC	DRC	AD
Stormwater	$129,479,261	$77,068,718	$1,345,121
Wastewater	$115,914,855	$48,936,606	$1,436,377
Water	$209,370,507	$119,211,234	$2,493,988
3 Waters	**$454,764,623**	**$245,216,558**	**$5,275,486**

[1]

Table 3C – Valuation - Three Waters Infrastructure Assets (Linear Assets) – 2023 (* uninflated dollars)

Activity	GRC	DRC	AD
Stormwater	$30,530,390	$14,550,156	$489,162
Wastewater	$91,247,554	$38,503,641	$1,217,646
Water	$77,505,644	$25,483,203	$1,866,744
3 Waters	**$199,283,588**	**$78,536,999**	**$3,573,551**

Table 3D – Valuation - Three Waters Infrastructure Assets (Point & Plant Assets) – 2023 (* uninflated dollars)

[1] GRC = Gross Replacement Cost, DRC = Depreciated Replacement Cost, AD = Annual Depreciation

3.2 Drinking Water Asset overview

We undertake regular independent performance assessment against compliance with the required health standards for bacteria and protozoal. Each treatment plant is continuously monitored via SCADA systems and water reports compiled through Water Outlook. As is required, Council uses WaiComply to independently report on Drinking Water compliance each quarter.

The average metered water consumption in the district for the past three years is approximately 408 litres/resident/day. Approximately 21% of treated water is lost within our metered networks before reaching customers, compared to the national average of 24%. This is pleasing but not something to celebrate. Further emphasis is planned to focus efforts on leakage with specific funding for leak management provided on each of the larger schemes.

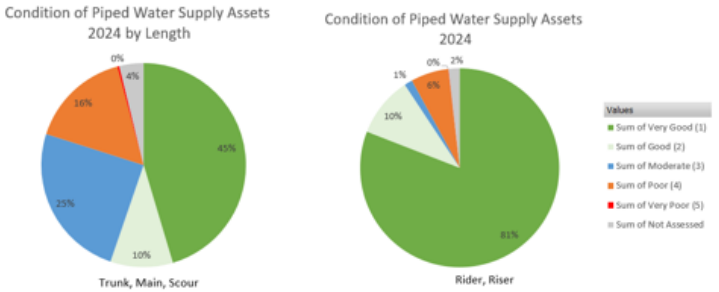
Average response times to faults within the district's water supplies are similar to the national average with Council's in-house operations team continuing to provide a timely response to most water related events.

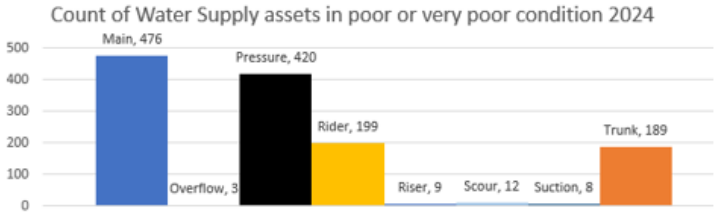
Water Supply Linear Assets Condition

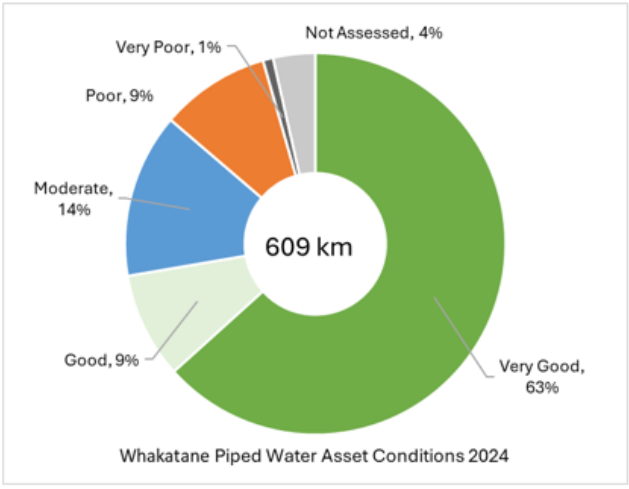
Asset Quantity

Asset Type	Sum of Assets
Pressure	12493
Main	2174
Rider	1540
Trunk	883
Riser	75
Scour	68
Overflow	16
Suction	8
Grand Total	17257

Asset Condition







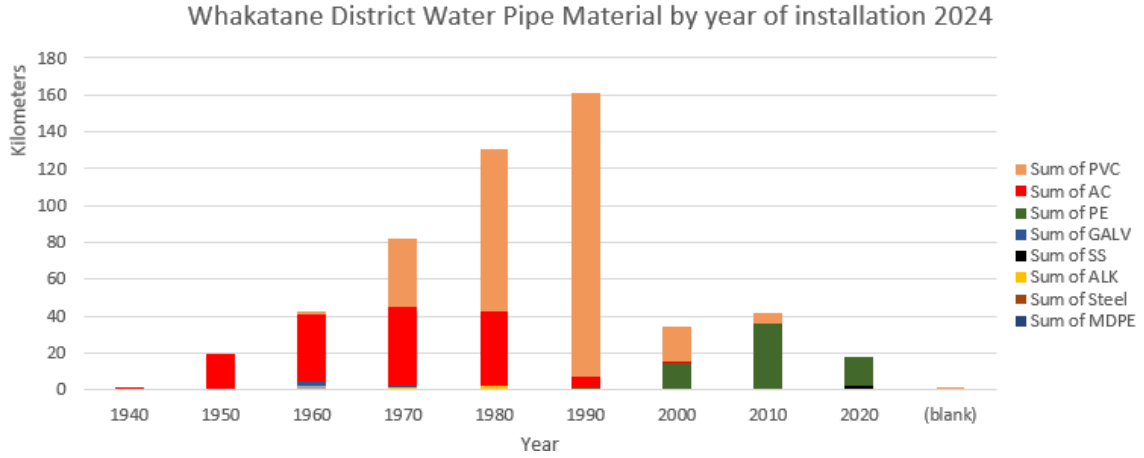


Figure 3E – Drinking Water Linear Assets - Condition

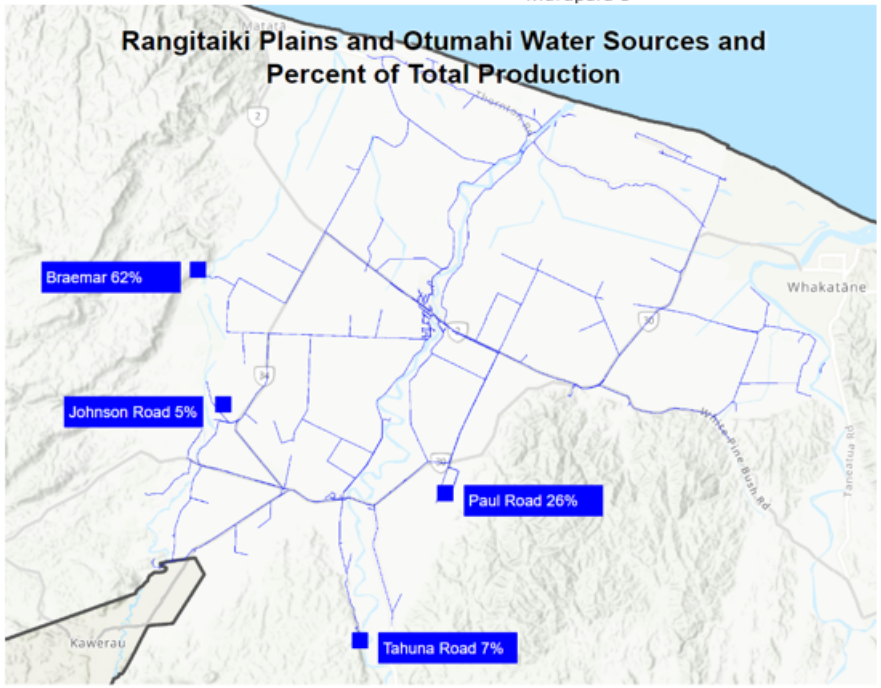
Water Supply Assets Criticality

List of Critical Assets

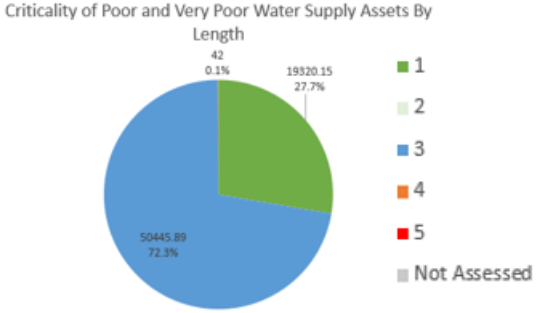
11 water treatment plants
- Whakatāne
- Paul Road
- Tahuna
- Johnson Road
- Braemar
- Te Mahoe
- Tāneatua
- Awakaponga
- Rūātoki
- Waimana
- Murupara

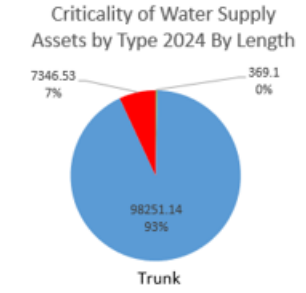
23 Water Storage Reservoirs
- Whakatāne A
- Whakatāne B
- Whakatāne C
- Ōtarawairere
- Ngāti Awa
- Melville
- Kowhai A
- Kowhai B
- Braemar
- Matatā A
- Matatā B
- Awakeri
- Tahuna
- Te Mahoe
- Tāneatua A
- Tāneatua B
- Rūātoki A
- Rūātoki B
- Waimana A
- Waimana B
- Murupara A
- Murupara B
- Murupara C

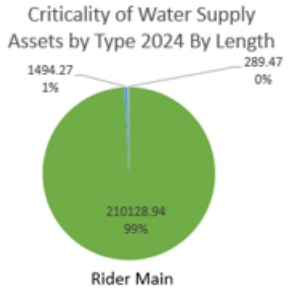
9 Water Schemes
- Whakatane, Coastlands, Ōhope
- Otumahi
- Rangitāiki Plains
- Matatā, Awakaponga
- Te Mahoe
- Tāneatua
- Rūātoki
- Waimana
- Murupara

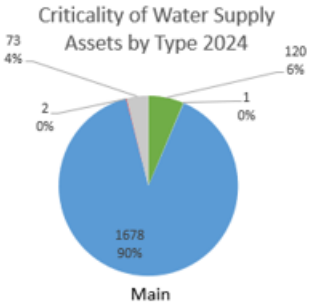


Condition of Critical Assets









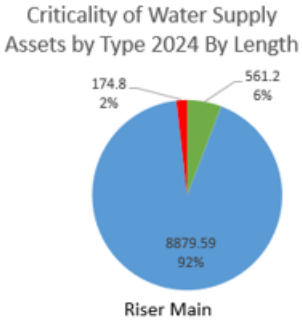


Figure 3F – Drinking Water Assets - Criticality

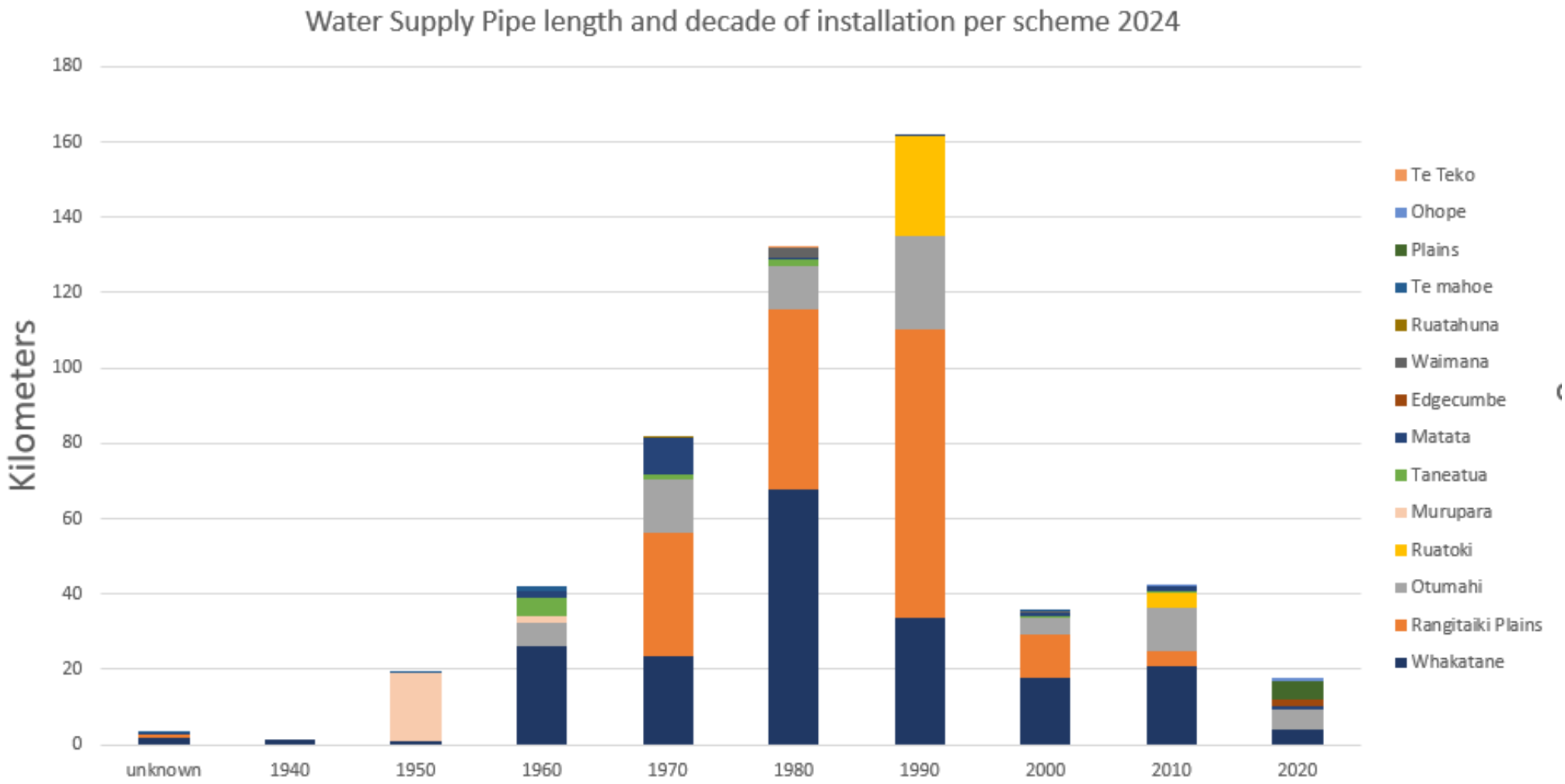


Figure 3G – Drinking Water Linear Assets - Installation decade, location and length

3.3 Stormwater Assets overview

The devastating effects of recent flooding events across the country have highlighted the need to reassess the level of service that will be provided to our communities. This will include the ongoing improvement in the performance and capacity of both below ground (pipes) and above ground overland flow paths, waterways, and storage to improve resilience in future events. Improving stormwater quality via treatment or related mechanisms will also require focus.

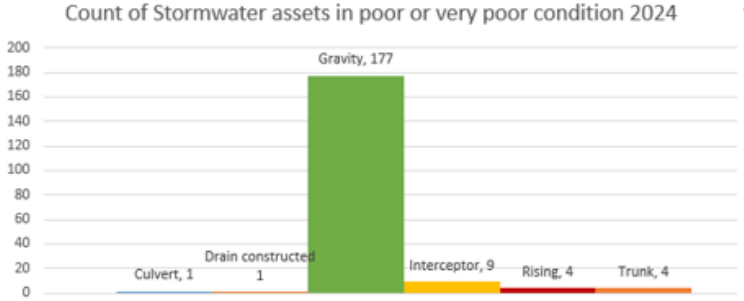
We have worked towards obtaining a comprehensive stormwater consent for Whakatane scheme, which is currently being reviewed by Bay of Plenty Regional Council. The remainder of the district's stormwater schemes are managed through individual consents. These are extensive and many are likely to be retired upon final issue of the comprehensive stormwater consent. Their management will fall under the control of a comprehensive stormwater management plan.

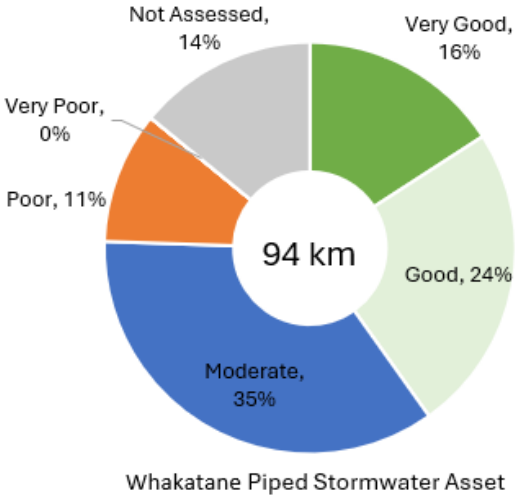
Stormwater Linear Assets Condition

Asset Quantity

Asset Type	Sum of Assets
Gravity	2822
Drain natural	188
Trunk	142
Drain constructed	63
Interceptor	40
Rising	36
Outfall	14
Culvert	5
Natural stream	2
Grand Total	3310

Asset Condition





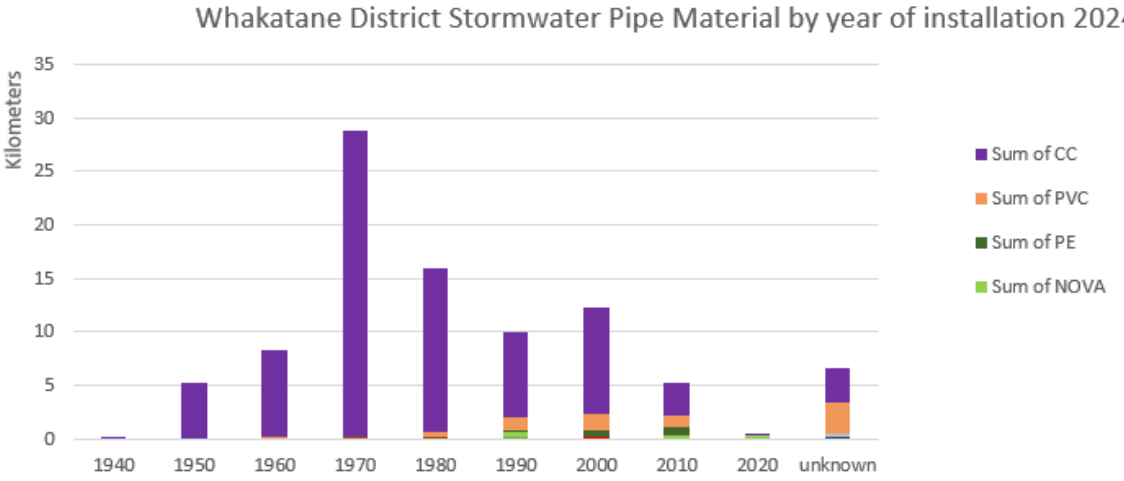


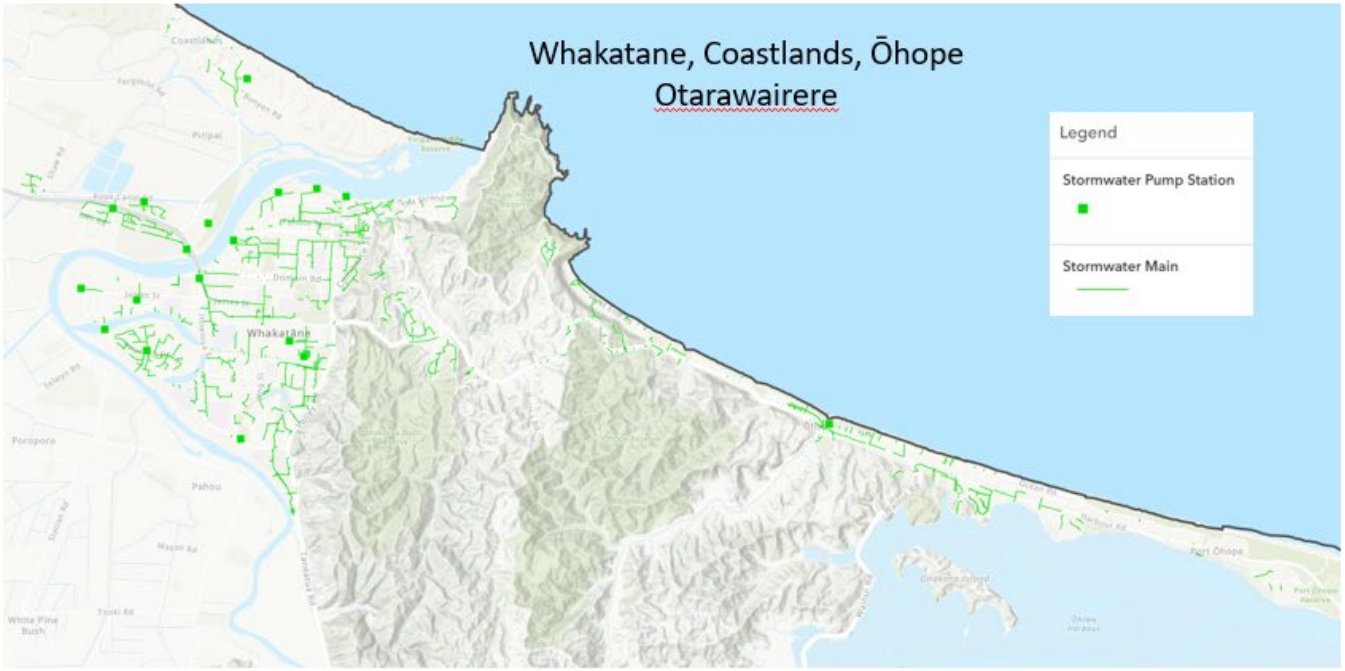
Figure 3H – Stormwater linear assets - condition

Stormwater Assets Criticality

List of Critical Assets

9 Stormwater Schemes
- Whakatane, Coastlands
- Ōhope
- Edgecumbe
- Te Mahoe
- Tāneatua
- Murupara
- Te Teko
- Matatā
- Otarawairere

Key Stormwater Critical Assets
- Pump Stations (20)
- Storage/Retention Ponds (21)
- Floodgates (59)
- Open Channels (20km)



Condition of Critical Assets

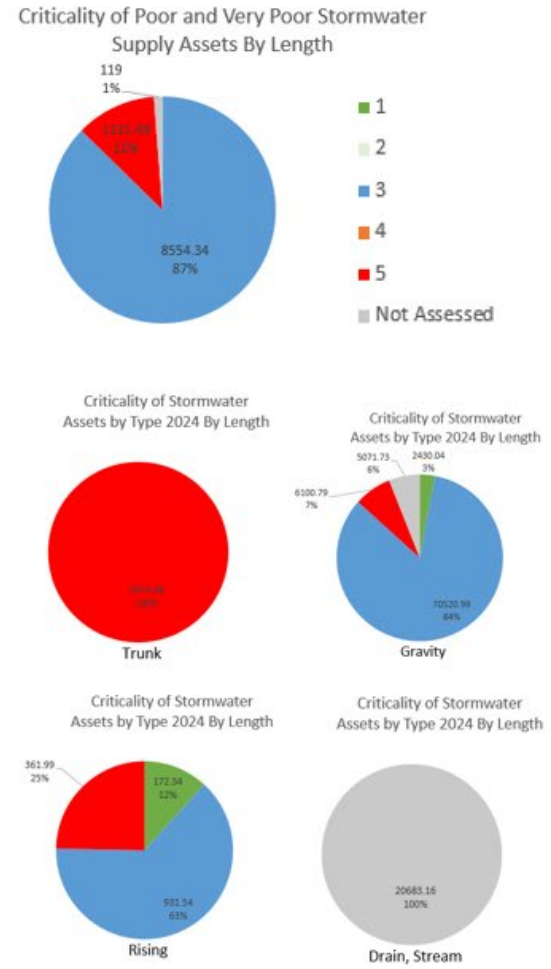


Figure 3I – Stormwater Linear Assets - Critically

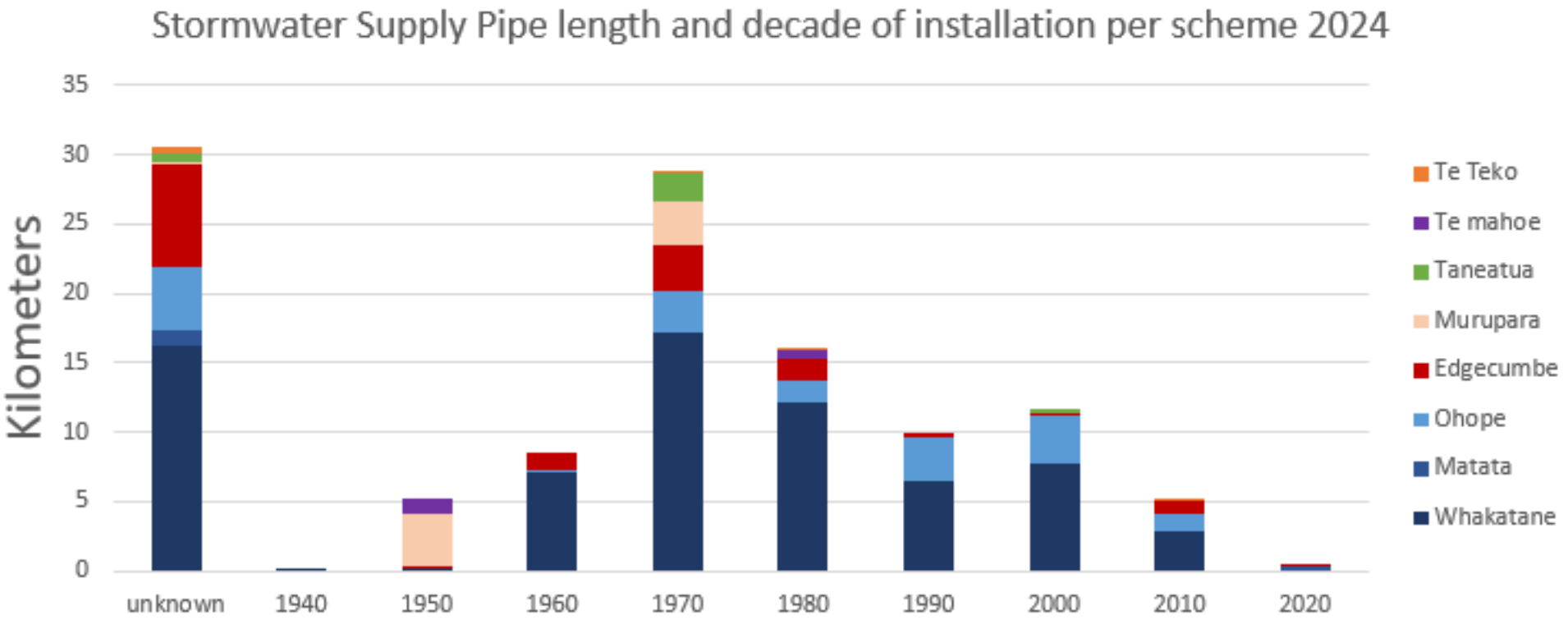


Figure 3J – Stormwater Linear Assets - Installation decade, location and length

3.4 Wastewater Assets overview

Our wastewater discharge consents have been largely compliant for a number of years, however, all but two wastewater discharge consents are due to expire by 2027. We will carry out the necessary scientific and planning work to support a fresh consent application. However, any significant physical upgrade works are excluded from the first 10 years of the LTP as they are considered to be unaffordable.

List of Critical Assets

6 wastewater treatment plants
- Whakatane, Coastlands
- Ōhope
- Edgecumbe
- Te Mahoe
- Tāneatua
- Murupara

14 Pond Facilities
- Whakatāne (4) 28ha
- Ōhope (4) 6.4ha
- Edgecumbe (2) 3.5ha
- Te Mahoe (field) 0.5ha
- Murupara (2) 7.2ha
- Tāneatua (2) 4.8ha

49 Wastewater pumping stations
- Whakatane, Coastlands (21)
- Ōhope (17)
- Edgecumbe (9)
- Tāneatua (2)

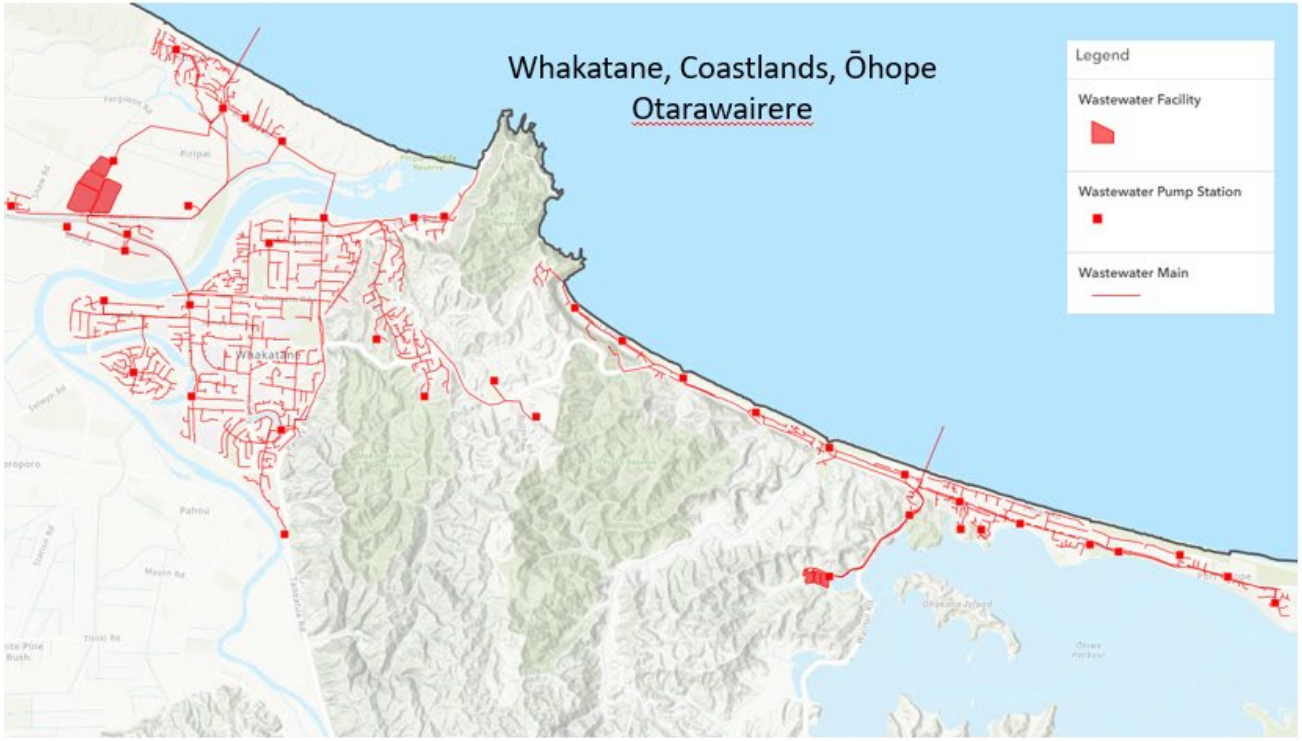
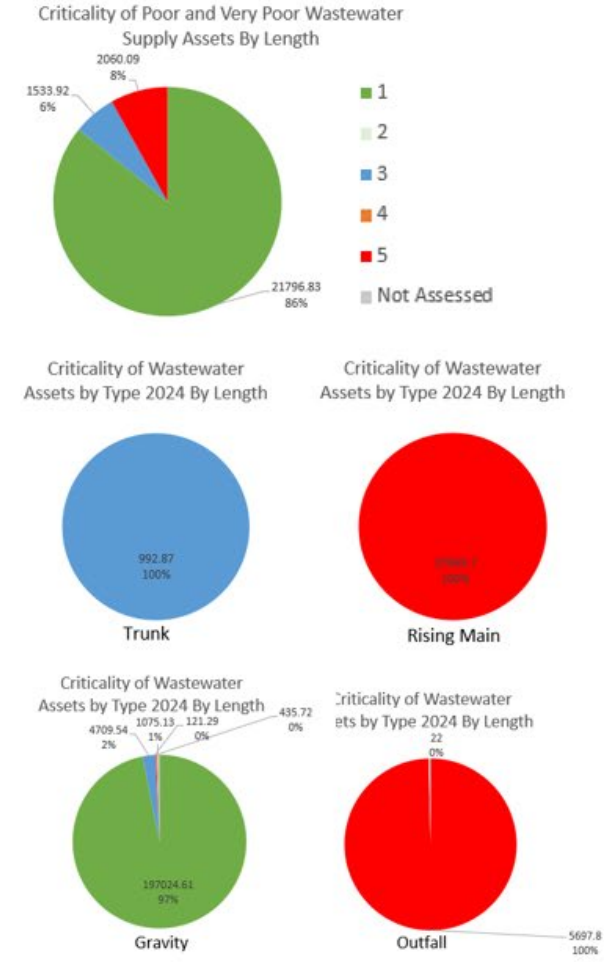


Figure 3K – Wastewater Linear Assets - Criticality

Condition of Critical Assets



Wastewater Linear Assets Condition

Asset Quantity

Asset Type	Sum of Assets
Gravity	11154
Rising	343
Outfall	32
Trunk	17
Pressure	24
Overflow	10
Scour	2
Grand Total	11582

Asset Condition

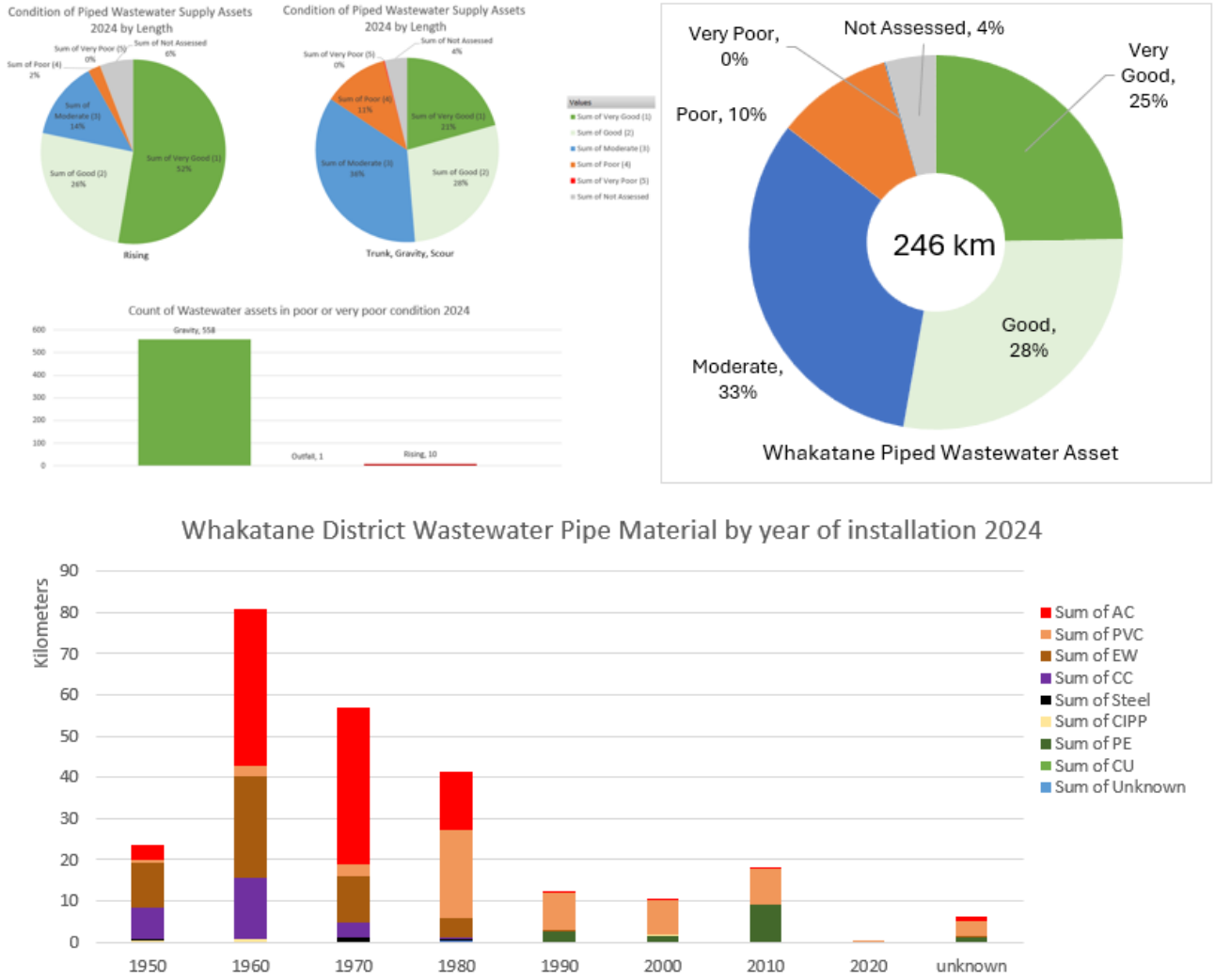


Figure 3L – Wastewater Linear Assets - Condition

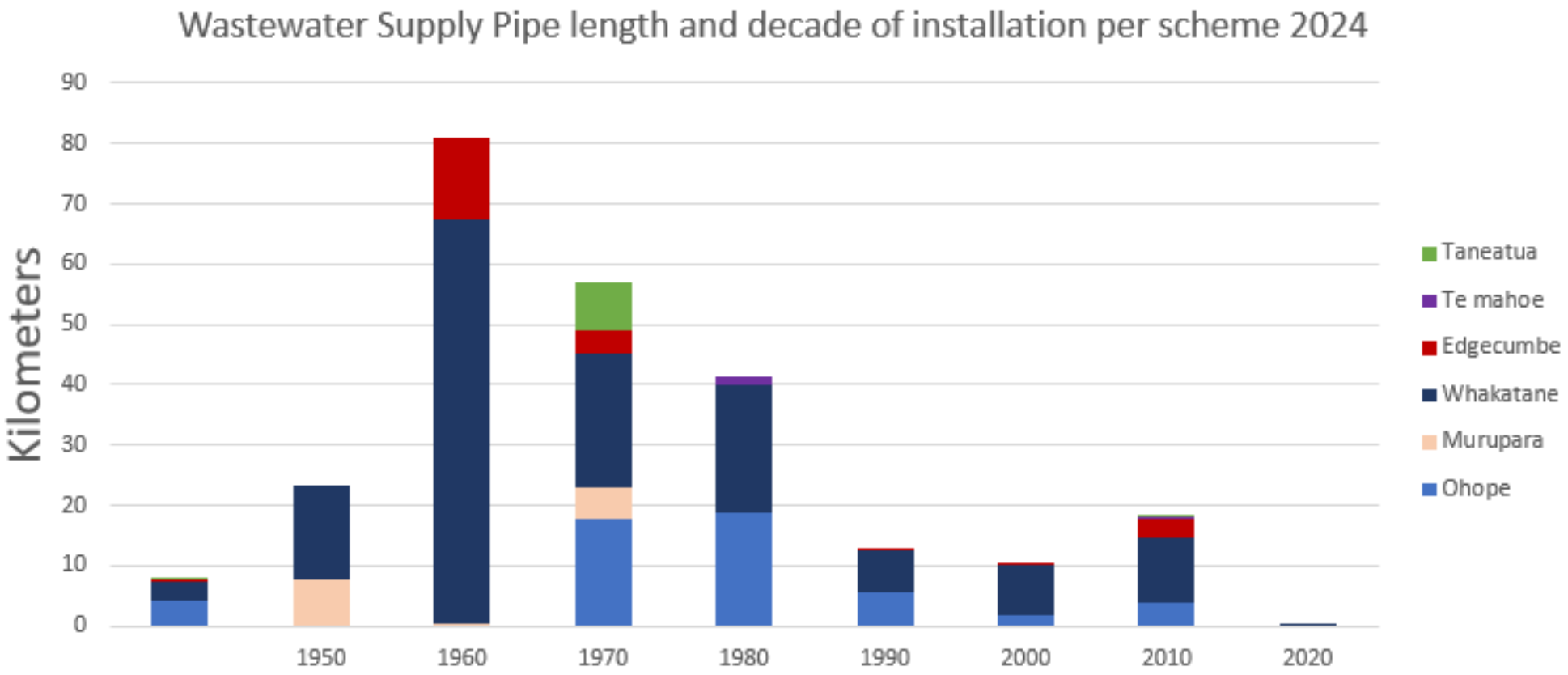


Figure 3M – Wastewater Linear Assets - Installation decade, location and length

3.5 Asset condition

3.5.1 Drinking Water Asset Condition

3.5.1.1 Linear assets

For drinking water assets we have assigned condition ratings to the majority of the piped assets. These were derived from the 2020 condition assessment based on the remaining useful life and pipe material. The assessment was based on actual pipe sample data from our pipe network and within the region and using deterioration modelling.

3.5.1.2 Point assets - Reservoirs

Also, in 2020 we engaged consultants to complete condition, seismic and isolation assessment for our concrete reservoirs, the full report is available. The following table summarises the overall condition rating for each element of the reservoir based on the highest condition rating of defects (Highest 5 to Lowest 1) affecting the sub-elements. The report is extensive and explains in detail the defects found. The Table below summarises the findings of this work.

3.5.1.2 Point assets - Plants

With a couple of exceptions, the drinking water treatment plants produce drinking water every single day. Taumata Arowai drinking water QA rules require the water produced to meet their published standards. As such drinking water treatment plants are considered to be generally in good or very good condition. Any components that are not delivering the required level of service are well known and generally there is an active upgrade programme to address such matters. Protozoal barriers are a well known example of this situation.

Whakatāne Reservoir condition summary 2020

Reservoir location	Condition rating: C1=very good, C2=good, C3=moderate, C4=poor, C5=very poor					
	Roof	Walls	Pipework	Access	Reference	AMP comments
Ngatiawa	C2	C2	C3	C2	Table 9	
Valley Road 1	C3	C3	C3	C2	Table 10	
Valley Road 2	C2	C4	C4	C1	Table 11	
Valley Road 3	C3	C4	C4	C4	Table 12	
Matata SH2	C3	C3	C4	C1	Table 13	
Taneatua	C2	C3	N/A	C1	Table 14	
Murupara 1	C4	C3	C4	C1	Table 15	
Murupara 2	C4	C3	C1	C1	Table 16	
Murupara 3	C4	C3	C1	C1	Table 17	
Murupara 4	C1	C3	C3	C4	Table 18	Currently not in service
Te Teko	C4	C3	C4	C1	Table 19	
Braemar Road	C2	C3	C3	C3	Table 20	
Murupara Pump Station	C4	C4	C2	C1	Table 21	Suction Tank
Melville Drive 1	C3	C3	C4	C3	Table 22	Decommissioned 2022
Melville Drive 2	C3	C3	C3	C1	Table 23	Decommissioned 2022
Melville Drive 3	C3	C3	C3	C1	Table 24	Decommissioned 2022
Melville Drive 4	C3	C3	C3	C1	Table 25	Decommissioned 2022
Melville Drive 5	C3	C4	C4	C1	Table 26	Decommissioned 2022
Te Mahoe	C4	C3	C4	C4	Table 27	
Awakeri Plains	C4	C4	C3	C2	Table 28	
Onepu 1	C3	C4	C3	C1	Table 29	Currently not in service
Onepu 2	C4	C4	C1	C1	Table 30	Currently not in service

Table 3N – Drinking Water reservoirs – Condition

3.5.2 Wastewater Asset Condition

3.5.2.1 Linear assets

For wastewater assets we have assigned condition ratings to the vast majority of the piped assets. These were derived from the 2020 condition assessment based on the remaining useful life and pipe material. The assessment was based on actual pipe sample data from our pipe network and within the region and using deterioration modelling.

In addition to this work, we have in-house CCTV capabilities and undertake gravity pipe inspections throughout the wastewater network. These assessments are uploaded onto a digital platform 'ReticManager' and further interrogation of this data gives detailed analysis of pipe condition.

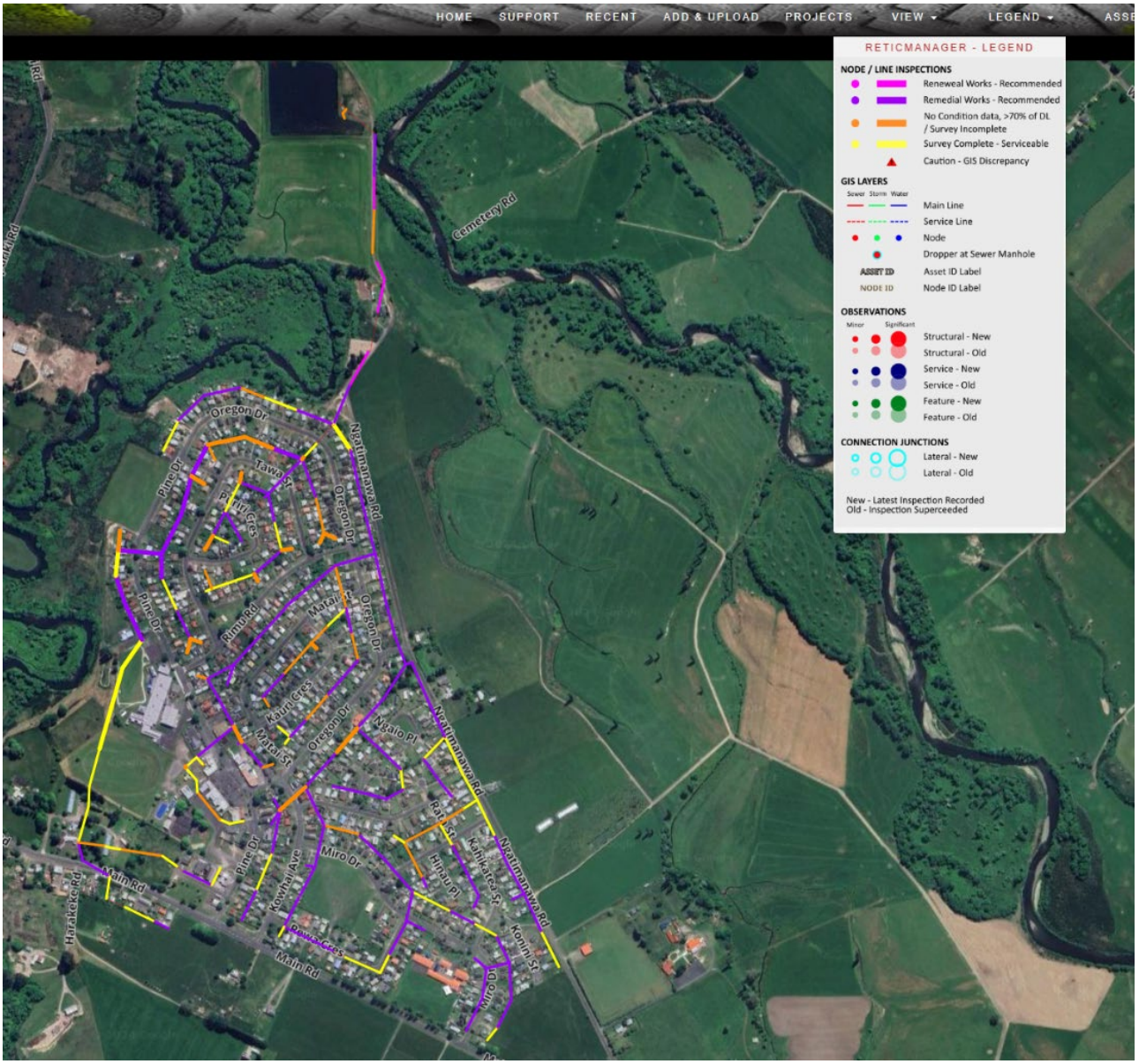


Figure 3O – Wastewater network – condition - Murupara

3.5.2.2 *Point assets*

Wastewater point assets include mainly pumpstations and treatment plants. Pumpstations operate many times per day making any performance issue immediately noticeable. In addition, we have engaged external expertise to carry out a slightly higher-level analysis of pump station condition with a view to identifying possible upgrade works. See the table below for an example of the findings.

Wastewater Pump Station - Condition Assessment

- The purpose of this work is to assist with high level asset planning
- Visual assessment from ground level, in the 2022 and 2023 calendar years
- Pump condition is based on the year of installation (from WDC Spreadsheet, and/or estimated)
- Electrical condition is based on the year of installation (and visual condition where obvious issues are evident)
- n/o = not observed, n/d = no data available, n/a = not applicable

Immediate risk of failure | *Significant deterioration or issues* | *Moderate deterioration or issues* | *Minor deterioration or issues* | *Good condition* | *Not observed or present*

Pump Station Site	Structure: Wet Well: Walls	Structure: Wet Well: Roof / Slab	Structure: Wet Well: Access Hatch	Structure: Valve Chamber: Walls	Structure: Valve Chamber: Roof / Slab	Structure: Valve Chamber: Access Hatch	Pipework: Inlet(s) (Wet Well)	Pipework: Pump Discharge (Wet Well)	Pipework: Valve Chamber	Pipework: Valves	Ancillary: Ladder(s)	Ancillary: Washdown RPZ	Ancillary: Chains	Ancillary: Guiderails	Ancillary: Carbon Filter	Other: Pumps (year)	Other: Electrical (year and visual)	Works Priority (1 = High, 2 = Med, 3 = Low)	Commentary
Ōhope #1								Photo	Photo							2002	1970	2	
Ōhope #2								Photo	Photo					Photo		2007	1970	2	
Ōhope #3																1987	n/o		
Ōhope #4																2007	1970	3	
Ōhope #5									Photo							1995	1970	2	
Ōhope #6																2002	1970	3	
Ōhope #7																			Ōhope WWTP discharge PS
Ōhope #8								Photo								1979	1971	2	
Ōhope #9							Photo				Photo					2007	1983	3	
Ōhope #10				n/o				Photo	n/o	n/o						2003	1983	2	
Ōhope #11									Photo	Photo	Photo					n/d	1983	2	
Ōhope #12				n/o												2000	1983	3	
Ōhope #13				n/o					n/o	n/o						n/d	1983	3	
Ōhope #14	Photo	Photo							Photo							1986	2012	1	**Immediate failure and H&S risks**
Ōhope #15																2003	1976	3	
Ōhope #16									Photo	Photo						2003	2020	2	
Ōhope #20																2004	2004	3	
Edgecumbe #1																			
Edgecumbe #2				n/o				Photo	Photo	Photo						1986	1962	2	
Edgecumbe #3				n/o					n/o	n/o						2007	2022	3	
Edgecumbe #4				n/o					n/o	n/o						2004	2004	3	
Edgecumbe #6a				n/o					n/o	n/o						2005	2005	3	
Edgecumbe #7				n/a	n/a	n/a		Photo	n/a	Photo						2007	1969	2	
Edgecumbe #8																2007	1969	3	
Edgecumbe #9	Photo								Photo	Photo						1986	2022	1	Structural and pipework risks
Edgecumbe #10								Photo								1993	2003	2	
Taneatua #71				n/a	n/a	n/a		Photo	n/a							2007	2020	2	
Taneatua #72	Photo							Photo								2007	1971	1	Structural and pipework risks
Whakatāne #1 - McAlister	Photo	Photo					Photo	Photo	Photo				n/a	n/a		1982	1954	1	**Overflow reduction and critically of site raises priority**
Whakatāne #2 - Hinemoa	Photo	n/o											n/a	n/a		1987	1965	2	Overflow reduction and critically of site raises priority
Whakatāne #3 - City South																1986	1999	3	
Whakatāne #4 - Pohutu	Photo	Photo									Photo		n/a	n/a		2023	1961	2	
Whakatāne #5 - Bridge St				n/o	n/o		n/o	Photo	n/o	n/o	Photo					2003	1962	2	H&S risks associated with WW PS location
Whakatāne #7 - Heads				n/a	n/a	n/a	n/o	Photo	Photo	Photo						1994	1961	2	
Whakatāne #8 - Awatapu																2005	1978	3	
Whakatāne #9 - Fishermans Drive					n/a											2005	1980	3	
Whakatāne #10 - Gateway					n/o				Photo	Photo	Photo			Photo		2007	1981	2	
Whakatāne #11 - Oxidation Ponds																			Whakatane WWTP discharge PS
Whakatāne #13 - Waiewe				n/o				Photo	n/a	n/a						1987	1987	2	
Whakatāne #14 - Ohuirehe				n/o			n/o		n/o	n/o						2005	2005	3	same number Replaces old #14 (opposite of roundabout)
Whakatāne #15 - 3W Depot																			Whakatane Depot PS
Whakatāne #16 - Wharf Shed									Photo	Photo						2000	2000	2	
Whakatāne #17 - Prita Lane					n/a											2000	2000	3	
Whakatāne #19 - White Horse																2005	2005	3	
Whakatāne #20 - The Hub				n/o					n/o	n/o						2007	2007	3	
Whakatāne #22 - Shaw																2018	2018	-	
Whakatāne #25 - Coastlands							n/o									2010	2010	3	Coastlands - East end Bunyan Road
Whakatāne #33 - Acacia Avenue																2023	2023	-	
Whakatāne #34 - Ferry																2024	2024	-	New Station Ferry Road - Mananui Cresent
Whakatāne #35 - Buddle Street																		-	2026 build
Whakatāne Holiday Park																2017	2017	-	Corporate Property
Whakatāne #6 - Ferry	Replacement WW PS planned for 2024																	-	Decommissioned see Whakatāne #34
TeMahoe #1																		-	TeMahoe WWTP field disposal PS

Table 3P – Wastewater pumping station – condition – high level

The treatment plants are known to be of a rudimentary mid-20th century style. Individual components are on maintenance schedules and have been operating for many years with ongoing maintenance. This maintenance is of a mature nature. We are in the process of securing critical spares for treatment plant mechanical items to assist if any unforeseen breakdowns occur.

3.5.3 Stormwater Asset Condition

3.5.3.1 Linear assets

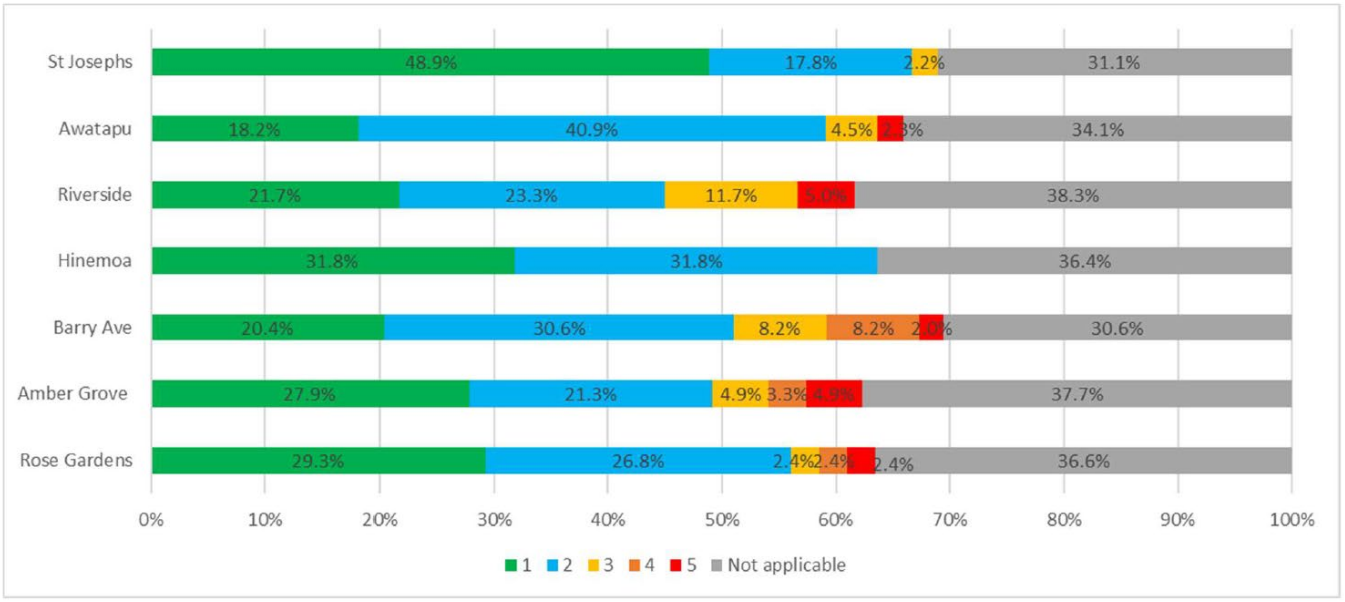
For stormwater assets we have assigned condition ratings to the vast majority of the piped assets. These were derived from the 2020 condition assessment based on the remaining useful life and pipe material. The assessment was based on actual pipe sample data from our pipe network and within the region and using deterioration modelling.

In addition to this work, we have in-house CCTV capabilities and undertake gravity pipe inspections throughout the stormwater network. These assessments are uploaded onto a digital platform 'ReticManager' and further interrogation of this data gives detailed analysis of pipe condition.

The open drain and overland flowpath network also comprise a vital part of the stormwater network. Because the assets are all visible their condition is relatively easy to discern at any time. In general, regular maintenance identifies any condition abnormalities and maintenance interventions required.

3.5.3.2 Point assets

Stormwater point assets include mainly pumpstations and detention/retention treatment ponds. Pumpstations operate much less frequently than wastewater pumpstations meaning that a different operating regime is required. We have undertaken a stormwater pumpstation condition and capacity assessment for our critical older stations. The "Whakatane Stormwater Pumpstations Condition and Capacity Assessment" has further details of pump station assessment. The asset condition profile of pumping stations is shown below.



Note: Range from 1 (very good) to 5 (very poor)

Figure 3Q – Stormwater pumping station – condition assessment

The ponds are passive assets designed to operate without human intervention. Individual components are on maintenance schedules and operate routinely. Their performance is of vital importance during rainfall events hence their performance characteristics and condition are generally very well known.

3.6 Data Confidence

A data confidence rating was undertaken as part of 2017 three waters valuation. Our assets were given a combined rating of B – C which is a confidence level (±25%). The confidence gradings run from A – excellent, B – good, C poor through to D - -very poor.

The rating showed that our database had anomalies at that time. We've upgraded matters since then. The table below outlines the asset confidence rating from the 2017 valuation.

Asset Group	Asset Type	Cost Rate	Quantity	Total Life	Remaining Life	Current Value (ODRC)
Storm Water (B)	Gravity Main	B	B	A-B	B	A-B
	Rising Main	B	B	A-B	A-B	A-B
	Open Channel	C-D	B	A-B	A-B	B
	Retention Pond	C-D	C-D	C	C	C
	Pump Station	C	C-D	C	C	C
	Resource Consent	C	C-D	C	C	B-C
Water Supply (B-C)	Reservoirs	C-D	C	B	A-B	B
	Trunk Mains	B-C	B	A-B	B	B
	Mains	B-C	B	A-B	C	B
	Service Line	C	B	A-B	B	B
	Pump Stations	C	C-D	C	C	C
	Resource Consent	C	C-D	C	C	B-C
	Treatment Plant	D	D	C	C	C-D
Waste Water (B-C)	Service Line	C	C	B	C	B
	Gravity main	B	C	A-B	B-C	B
	Rising main	B	D	A-B	B-C	B-C
	Pump Station	C	B	B	B	B-C
	Treatment Plant	C	B-C	B	B	B-C
	Outfall	C	B	B	B	B
	Resource Consent	C	B	C	C	B-C

Table 3R – Data confidence rating - 2017

As a follow up and after data improvements, in 2020, we engaged an external consultant to undertake an evaluation for the water, wastewater and stormwater network pipe data to validate and ascertain data completeness and confidence.

Results indicate that overall we have high confidence in our pipe data set as shown below:

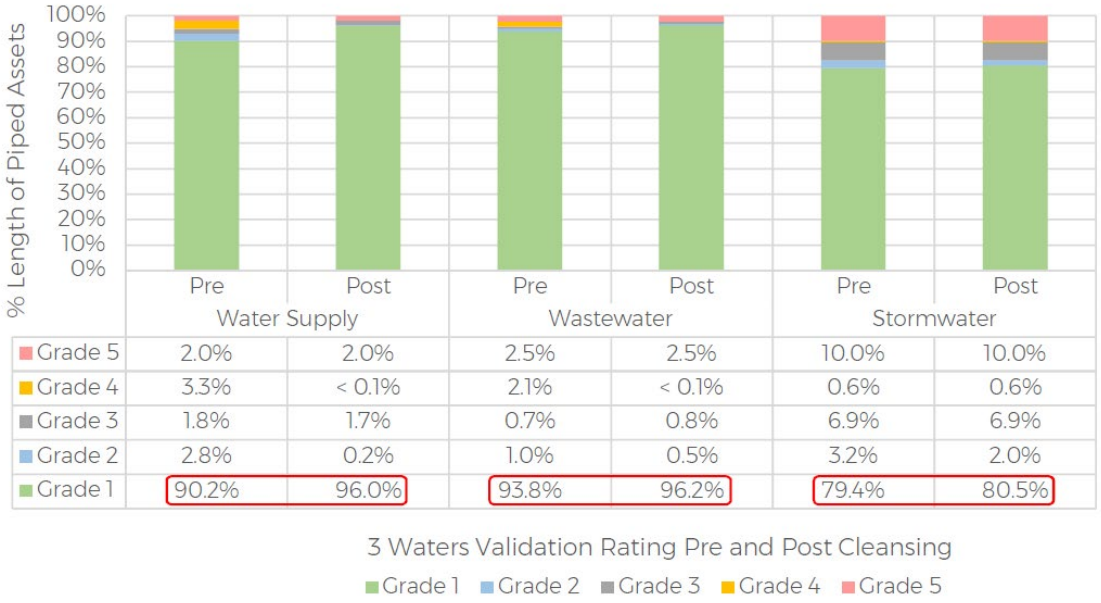


Figure 3S – Data completeness and confidence - 2020

Grade (Validation Rating)	Definition
1	Pipe Material, Year Installed & Diameter are valid
2	Pipe Material and Year Installed are valid, DN is either invalid or unknown
3	Pipe Material and Diameter are valid, Year Installed is either invalid or unknown
4	Pipe Material is known, Year Installed and / or Diameter are invalid or unknown
5	Pipe Material is unknown

Table 3T – Validation grades

Further reference and details can be review in the "Three Waters Piped Asset Data Management – District Wide" report.

3.7 Asset criticality

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction in service provision. Typically, assets that service more customers or facilities have a higher criticality rating, e.g. hospitals, schools, emergency centres.

Assessing critical assets and their potential failure modes allows us to focus limited resources (time, funding, staff, and contractors) on activities that prevent or reduce service disruptions. To do this, we need to understand the potential consequences of asset failure and consider all the relevant risk criteria, such as social, environmental, and financial impacts, within their risk framework.

A high-level list of three waters asset types and their typical level of criticality in providing services is shown in the following table: Level 5 indicates the most critical asset. Level 1 indicates the least critical asset.

Drinking Water Supply Criticality Overview

Asset type	Description of criteria	Base approach critical rating
Pipes	Less than 100mmØ	Low (1)
	100mmØ to 300mmØ	Medium (3)
	Greater than 300mmØ	High (5)
	All falling and rising mains to and from sources, reservoirs and pump stations	High (5)
	Pipes that are important to supply critical customers	High (5)
	Single pipes serving more than 1,000 customers	High (5)
	Potential pipe failures which may cause significant social, environmental or economic impact	High (5)
Valves	Valves located along the critical water pipes	High (5)
	All other valves	Low (1)
Pumpstations	Water pumpstations without resilience (i.e. backup alternative power supply)	High (5)
	Water pumpstations with resilience (i.e. backup alternative power supply)	Medium (3)
Reservoirs	All water reservoirs	High (5)
Treatment plants	All water treatment plants	High (5)

Table 3U – Drinking water criticality

Wastewater Supply Criticality Overview

Asset type	Description of criteria	Base approach critical rating
Pipes	Less than 250mmØ	Low (1)
	250mmØ to 375mmØ	Medium (3)
	Greater than 375mmØ	High (5)
	All rising mains	High (5)
	Outfall mains	High (5)
	Potential pipe failures which may cause significant social, environmental or economic impact	High (5)
Valves and fixtures	All – including air, non-return, isolation valves	High (5)
Manholes	Manholes on critical pipes (pipes greater than 375mmØ)	High (5)
	All other manholes	Low (1)
Pumpstations	Wastewater pumpstations without resilience (i.e. backup alternative power supply, by-pass pumping arrangement)	High (5)
	Wastewater pumpstations with resilience (i.e. backup alternative power supply, by-pass pumping arrangement)	Medium (3)
Treatment plants / Oxidation Pond	All	High (5)

Table 3V – Wastewater criticality

Stormwater Criticality Overview

Asset type	Description of criteria	Base approach critical rating
Pipes	Less than 150mmØ	Low (1)
	150mmØ to 600mmØ	Medium (3)
	Greater than 600mmØ	High (5)
Open drains/channels, stream & watercourse banks	Minor drains/channels	Low (1)
	Medium drains/channels, minor stream & watercourse banks	Medium (3)
	Large drains/channels, all other stream & watercourse banks	High (5)
Stormwater outlets	Stormwater outlet to 'dry' stream/watercourse	Low (1)
	Stormwater outlet to 'wet' stream/watercourse	High (5)
Storage Pond/ retention dams	Dry	Low (1)
	Wet	High (5)
Manholes	Manholes on critical pipes (pipes greater than 600mmØ)	High (5)
	All other manholes	Low (1)
Floodgates and wingwalls	Floodgates and wingwalls at 'dry' locations	Low (1)
	Floodgates and wingwalls at 'wet' active locations	High (5)
Pump stations	All	High (5)

Table 3W – Stormwater criticality

3.8 Opportunities for improvement

A number of opportunities exist for asset management improvement. These are addressed as time and resource allow.

Asset data – confirm existing data accuracy and completeness. Develop an asset data management strategy which aligns with levels of service, performance measures and initiatives to improve efficiency. The strategy would include a prioritised programme of improvements with an estimate for funding required over at least a 10- year period.

Above ground asset condition - collate existing above ground asset information from various information sources, evaluate and input to asset management system to inform future decision-making processes. This will also need to include collation of seismic assessments and the status of upgrade to improve seismic resilience.

Underground asset condition - develop protocols for underground asset condition assessment and confirm existing information to date prior to committing to a medium to long term renewals programme.

Asset criticality - develop and implement a criticality framework based upon national standards, which can be applied to (standardised) asset classes where possible. This will improve investment decision making by prioritising renewals and upgrades to those most critical assets at risk of failure.

Assets owned by others – cross-reference with available legal property information and improve the capture of assets owned by other parties and the impact that may have for the operation and management of Council assets.

Asset data and confidence - develop a standardised approach to the assessment and description of asset confidence and accuracy which aligns with national standard practice.

4. Levels of service and performance

This section provides an overview of levels of service and performance measures. It includes the results of selected measures from mandatory performance reporting and the voluntary Water New Zealand National Performance Review, offering insights into the recent performance of assets and services. It also reports on compliance with regional resource consent and details the upcoming expiry dates.

Setting levels of service and performance measures are a fundamental part of prudent asset management practice. Levels of service are the means of setting community expectations on three waters services provided. Generally, service levels align with our objectives and are measured against performance targets determined based on factors such as: statutory requirements, industry best practice and standards, community expectations and affordability.

Consistent collection, recording and reporting of performance measures can provide valuable information about the effectiveness of infrastructure networks.

To inform future appropriate levels of service to meet customer, iwi, stakeholder and community expectations, historical performance data is useful in:

- Demonstrating the current and past level of service provision.
- Identifying gaps between the current and appropriate status of asset performance.
- Mapping the pathway of achieving the desired level of service to meet expectations.

Change is afoot in the NZ water industry in relation to performance measures with the most recent mandatory reporting requirements from Taumata Arowai.

4.1 Performance Measures – Past, Current & Future

There are a number of performance metrics relating to the provision of three waters services. The principal ones are listed below.

Non-Financial Performance Measures (Department of Internal Affairs)

In 2010, the Local Government Act was amended, requiring local authorities to report non-financial mandatory performance measures via their Annual Reports. The aim was to help the community contribute to discussions in determining levels of service and allow them to compare the level of service provided by different councils. Currently, there is a cross-over and duplication of the non-financial performance measures for water supplies with Taumata Arowai reporting.

Taumata Arowai – Drinking Water Quality Assurance Rules 2022

This is a dense, 87-page publication outlining rules that drinking water suppliers must meet relating to drinking water networks.

Taumata Arowai – Drinking Water Network-Environmental-Performance-Measures (NEPM)

The Water Services Act 2021 empowered Taumata Arowai to require collection of and publish performance measure outcomes. The 28-page guidance material is designed to aid water suppliers to provide greater transparency about the performance of networks and the impacts they have on the environment and public health. Refer https://www.taumataarowai.govt.nz/for-water-suppliers/network-environmental-performance-measures/

At this stage, these monitoring and reporting requirements only relate to drinking water network operators but in the future, measures will be introduced that apply to wastewater and stormwater operators.

The first NEPM data collection was for the period 1 July 2022 to 30 June 2023. We have reported network details in September 2023 and again in September 2024.

Voluntary Council-specific performance measures

Councils have frequently carried out surveys such as satisfaction surveys to determine customer satisfaction findings. These are variously reported upon in line with their make-up and collection methods.

National Performance Review (Voluntary)

The National Performance Review, co-ordinated by Water New Zealand, collates and compares water, wastewater, and stormwater service provision across the nation. Its principal purpose is to provide accessible and comparable data to identify improvement opportunities and allow benchmarking across organisations.

We have participated in this voluntary review since the start in 2012/13 until 2021/22 which was the final year offered.

Regional resource consent compliance (based upon information collected by regional councils).

4.2 Levels of service and measuring performance

The data in the below sections represent a selection of key performance measures to assess three waters service performance. It does not represent the full set of measures available. These can be found in our annual report and the National Performance Review annual reports.

4.3 Drinking Water supply performance

4.3.1 Safety of drinking water

The figure below shows our reported compliance with Part 4 and Part 5 for the last six years.

Water Supply Measure Description	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24		Future	
													2025-27	28-34
	Target	Achieved	Target	Achieved	Target	Achieved	Target	Achieved	Target	Achieved	Target	Achieved	Target	Target
The extent to which Council's drinking water supplies comply with Part 4 of the Drinking Water Standards (bacteria compliance criteria) (M)	9	8	9	8	9	6	9	5	9	3	9	2	9	9
The extent to which Council's drinking water supplies comply with Part 5 of the Drinking Water Standards (protozoal compliance criteria) (M)	9	4	9	6	9	3	9	4	9	1	9	1	9	9

Table 4A – Drinking Water Safety - Sourced from DIA Non-financial performance measures

Note the following.

- Numbers refer to number of schemes compliant – 9 being the maximum possible and the target.
- Parts 4 & 5 are to be discontinued. In future the metric will be compliance with the Drinking Water QA rules.
- Over time the required standards have become increasingly difficult to fully meet for all schemes, all of the time.

4.3.2 Customer satisfaction

Customer satisfaction is measured by the total number of complaints received. For drinking water supply, the performance measures monitor the water clarity, taste, odour, water pressure or flow, continuity of supply, and our response to any of these issues. The figure below shows the average complaints received for water supply systems in the last five years. The most common complaints were about water clarity, followed by continuity of supply.

For the six years prior to 2020, we engaged the National Research Bureau Council (NBRC) to undertake the CommunitrakTM survey to gather public opinion and to communicate our decisions and programmes to residents. From 2019/20, we engaged SIL Research to undertake the annual residents' survey. The change in provider and methodology means that comparisons between the most recent 2020 survey and those in earlier years will not be exact. However, we are confident that the new methodology will increase coverage and create a more diverse response and therefore the information gathered will be more representative of community opinion.

		2018-19		2019-20		2020-21		2021-22		2022-23		Future	
Water Supply Measure Description	National Median	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
Satisfaction with the water supply and quality of drinking water (supplied by Council)		86%	89%	86%	71%	86%	68%	70%	69%	70%	72%	> 70 %	> 75 %
Total number of complaints per 1,000 connections, received by the Council about any of the following : (a) drinking water clarity (b) drinking water taste (c) drinking water odour (d) drinking water pressure or flow (e) continuity of supply (f) Council's response to any of these issues	9 (17-18)	< 30	9.6	< 30	9.4	< 30	9.2	< 30	6.3	< 30	6.1	< 30	< 30

Table 4B– Drinking Water Safety - Customer satisfaction and complaints

4.3.3 Service interruptions and response

Drinking water supply interruptions occur when there is a disruption to the water supply service, which can be planned or unplanned. Planned interruptions occur when scheduled maintenance or repairs are planned on the public network and customers can be notified in advance that an interruption to service will or may occur. Unplanned interruption occurs when there is an asset failure in the public reticulated network. A high level of unplanned interruptions indicates a network potentially requiring renewals and upgrades to improve performance. Unscheduled disruptions can be disruptive and costly to customers due to disruption of their businesses. Emergency repairs are also an expensive alternative for us.

This metric can reveal high levels of customer dissatisfaction - such as reported recently for Wellington Water.

Our proportion of planned vs unplanned water supply service interruptions is similar to the national median as showcased below. Data accuracy varies as some councils are unable to separate planned and unplanned interruptions in their reports.

			2018-19		2019-20		2020-21		2021-22		2022-23		Future	
DIA Measure (per FY)	Water Supply Measure Description	National Median	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
(3) (a)	Median response time to attend urgent call-outs for areas supplied by Council from the time that the local authority receives notification to the time that service personnel reach the site	0.53	< 1	0.5	< 1	0.6	< 1	0.7	< 1	0.8	< 1	0.6	< 1 hour	
(3) (b)	Median response time to resolve urgent call-outs for areas supplied by Council from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption	2.34	< 8	2.4	< 8	2.9	< 8	2.9	< 8	2.4	< 8	2.9	< 8 hours	
(3) (c)	Median response time to attend non-urgent call-outs for areas supplied by Council from the time that the local authority receives notification to the time that service personnel reach the site	16.69	< 24	17.3	< 24	17.5	< 24	19.8	< 24	18.4	< 24	16.7	< 24 hours	
(3) (d)	Median response time to resolve non-urgent call-outs for areas supplied by Council from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption	24.3	< 48	20.2	< 48	21.1	< 48	23.5	< 48	22.5	< 48	20.3	< 48 hours	

Table 4C – Median response times – Drinking Water callouts

4.3.4 Water loss

Water Supply Measure Description	National Median	2018-19 Target	2018-19 Achieved	2019-20 Target	2019-20 Ach.	2020-21 Target	2020-21 Ach.	2021-22 Target	2021-22 Ach.	2022-23 Target	2022-23 Ach.	Future 24-27	Future 28-35
Percentage of real water loss from Council-networked reticulation system for metered schemes based on the standard International Water Association (IWA) water balance	24.86	< 20	17%	< 20	20%	< 20	18%	< 20	19%	< 20	21%	< 20	< 20
Percentage of real water loss from council-networked reticulation system for unmetered schemes	24.86	< 50	56%	< 50	59%	< 50	45%	< 60	42%	< 60	38%	< 40	< 30

Table 4D – Percentage of real water loss

4.3.5 Water consumption

For our water supply systems that no customer water meters are installed, we are consistently hitting below our existing target this is due to continually installing water meters throughout the district.

For average consumption of drinking water on metered supply, the reverse is indicated, whereby the number is continually increasing. There are a few contributing factors to this:

- the way reporting is undertaken
- we have meters on our rural sector and the consumption by dairy industry skews the results
- that there are no real incentives for customers in saving water as there is no consistent volumetric charging across the district

We are continuing to install water meters on all properties within the district to better demand manage our water supplies.

Water Supply Measure Description	National Median	2018-19 Target	2018-19 Achieved	2019-20 Target	2019-20 Ach.	2020-21 Target	2020-21 Ach.	2021-22 Target	2021-22 Ach.	2022-23 Target	2022-23 Ach.	Future 24-27	Future 28-35
Average consumption of drinking water per day per resident in the District for metered areas supplied by Council	247	< 280	258	< 280	258	< 280	380	< 270	414	< 260	430.8	**< 450**	**< 400**
Average consumption of drinking water per day per resident in the District for unmetered areas supplied by Council	281.8	< 450	281	< 450	236	< 450	222	< 350	376	< 350	284	**< 350**	**< 300**

Table 4E – Drinking water consumption

4.3.6 Drinking Water Resource Consents

Resource consents are a requirement for water supply management works due to the potential impact of water takes on the environment and other customers.

We have a database of consents that relates to drinking water supply management activities, which are shown below. In accordance with both Regional and District Plans, several requirements must be met during the life of the consent. These requirements will stipulate monitoring conditions in the consent and will require the consent holder to report on the compliance with those conditions.

Consents related to drinking water supply

Permit Number	Permit Activity Type	Permit Purpose	Permit Location	Permit Granted Date	Permit Expiry Date
20094	Take	Take and use water for the purpose of water supply to Edgecumbe Township and Rangitāiki Plains	Braemar Spring Rangitāiki Plains and Edgecumbe Township	5/04/1973	1/10/2026
20114	Take	Take and use water from an underground stream for public water supply purposes	An underground stream adjacent to the Rangitāiki River situated in State Forest No.1 Murupara	6/09/1973	1/10/2026
20198	Take	Take and use water from the Whakatāne river for a municipal water supply and also a right to discharge waste water to the river	Adjacent to Whakatāne Water Treatment Plant	3/07/1975	1/10/2026
20223	Take	Take water from a bore for irrigation	Bore Rugby Park Whakatāne	4/12/1975	1/10/2026
20280	Take	Take water from a spring at Awakaponga for community water supplies	Spring, Manawahe Road, Awakaponga Matata Township	2/12/1976	1/10/2026
20283	Take	Take water from a well for the Waimana water supply	Well on the Grantee's Property Hodges Road Waimana	2/12/1976	1/10/2026
21044	Take	Take water from bores adjacent to the Waimana River for Tāneatua Town water supply	Tāneatua community water supply	2/12/1982	1/10/2026
21454	Take	Orchard irrigation on the properties of scheme members in the McDonald Road area, Awakeri.	A bore on Paul Road, Te Teko	5/04/1984	1/10/2026
62627	Take	Take water from a bore for community water supply	Rūātoki	14/06/2004	Continuing under Section 124 of the RMA
66359	Bore	Take and use water from a bore for municipal supply	124 Paul Road, Te Teko	1/11/2010	30/09/2045
RM15-0017-WT.01 & .02	Take	Take water from a bore	58A Johnson Road, Otakiri	15/12/2016	31/12/2031
RM15-0017-WU.01	Take	Use of water from well no. 2510 and well no. 2511 for municipal supply	58A Johnson Road, Otakiri	15/12/2016	31/12/2031

Permit Number	Permit Activity Type	Permit Purpose	Permit Location	Permit Granted Date	Permit Expiry Date
RM18-0540-WT.01 & .02	Take	Take and use of groundwater from a bore for municipal supply of the Otumahi Water Supply Scheme	Tahuna Road, Te Teko	20/12/2018	30/09/2045
RM22-0032-WT.01	Take	Take and use of groundwater from BN-11204 for the municipal supply of the Te Mahoe Village, at 1B Te Mahoe Village Road, Te Mahoe	Te Mahoe Village, Matahina	04/05/2022	30/04/2037

Table 4F – Water take consents

4.4 Wastewater performance

4.4.1 Discharge compliance

As seen below at a macro level we have not received abatement or infringement notices nor enforcement orders nor conviction. However there may from time to time be instances where consent conditions have not been complied with. Many of the current consents are at a "basic" level meaning that compliance is relatively easily achieved. Future consent conditions are likely to be much more prescriptive requiring more active compliance.

		2018-19		2019-20		2020-21		2021-22		2022-23		Future	
WasteWater Measure Description	National Average	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
Number of abatement notices received by the Council in relation to the resource consents for discharge from our sewerage systems		0	0	0	0	0	0	0	0	0	0	0	0
Number of infringement notices received by the Council in relation to the resource consents for discharge from our sewerage systems		0	0	0	0	0	0	0	0	0	0	0	0
Number of enforcement orders received by the Council in relation to the resource consents for discharge from our sewerage systems		0	0	0	0	0	0	0	0	0	0	0	0
Number of convictions received by the Council in relation to the resource consents for discharge from our sewerage systems		0	0	0	0	0	0	0	0	0	0	0	0

Table 4G – Wastewater consent infractions

4.4.2 Customer satisfaction

Until 2020-21 we set an ambitious level of customer satisfaction – 83%. This has proven difficult to achieve. For 2021-22 & 2022-23 this has been reset to 75%. For the first 3 years of the LTP it has again been lowered to 70%, then rising again to 75%.

		2018-19		2019-20		2020-21		2021-22		2022-23		Future	
WasteWater Measure Description	National Average	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
Satisfaction with the sewerage system for areas supplied by the Council		83%	88%	83%	76%	83%	75%	75%	74%	75%	77%	> 70 %	> 75 %

Table 4H – Customer satisfaction

For the six years prior to 2020, we engaged the National Research Bureau Council (NBRC) to undertake the CommunitrakTM survey to gather public opinion and to communicate our decisions and programmes to residents. From 2019/20, we engaged SIL Research to undertake the annual residents' survey. The change in provider and methodology means that comparisons between the most recent 2020 survey and those in earlier years will not be exact. However, we are confident that the new methodology will increase coverage and create a more diverse response and therefore the information gathered will be more representative of community opinion.

The result of the survey is shown below and represents a deeper dive than the headline values above.

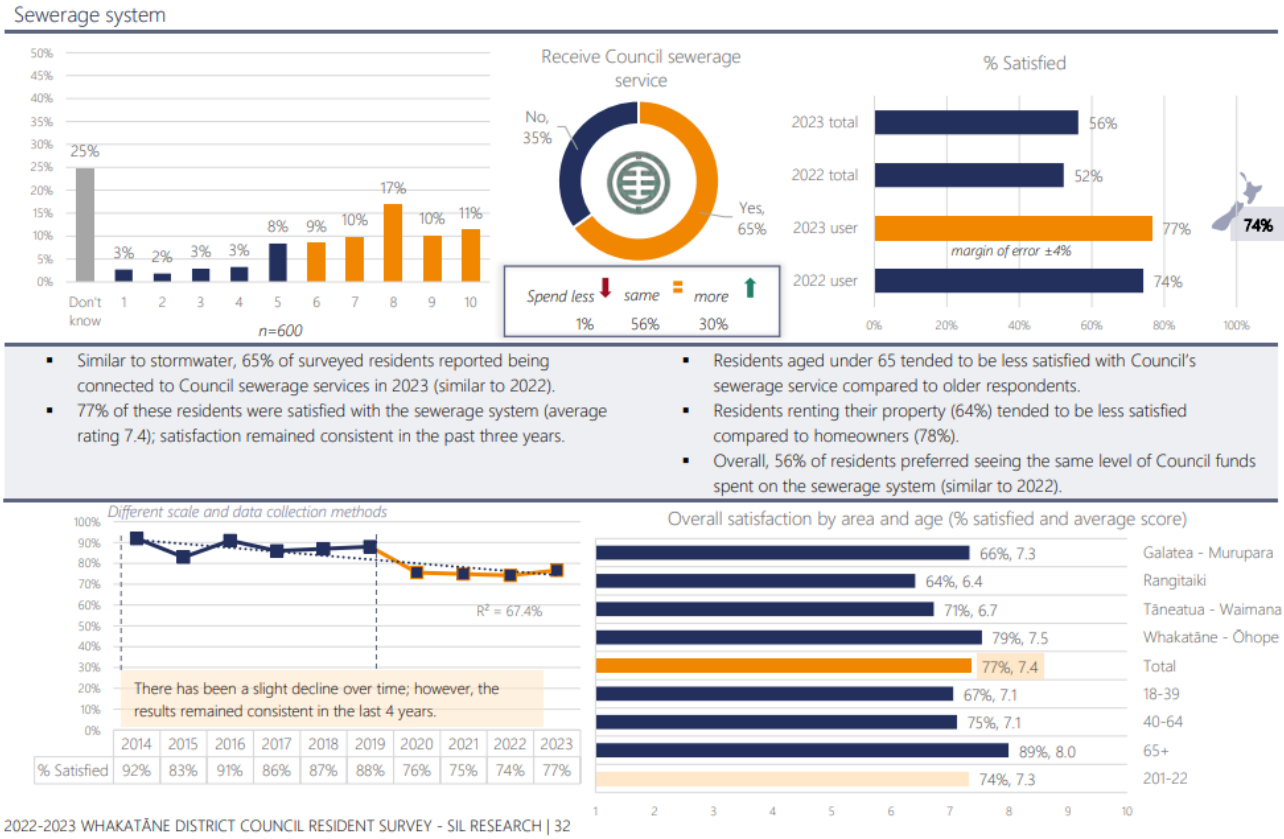


Figure 4I – Customer satisfaction and complaints

4.4.3 Service interruptions and response

As can be seen below our responsiveness is in line with national median times for both attendance and resolution of these issues. In all cases target times have been met. In 2021-22 an opportunity was taken to make the targets more challenging. In the future there is a desire to make the resolution time even more challenging.

		2018-19		2019-20		2020-21		2021-22		2022-23		Future	
WasteWater Measure Description	National Average	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
Median response time to attend a sewage overflow resulting from a blockage or other fault in the Council's sewerage system, from the time that the Council receives notification to the time that service personnel reach the site	0.6	< 3	0.6	< 3	0.4	< 3	0.5	< 2	0.5	< 2	0.7	< 2 hours	< 2 hours
Median response time to resolve a sewage overflow resulting from a blockage or other fault in the Council's sewerage system, from the time that the Council receives notification to the time that service personnel confirm resolution of the blockage or other fault	2.98	< 10	3.2	< 10	3.9	< 10	2.5	< 8	1.9	< 8	3.8	< 8 hours	< 5 hours

Table 4J – Wastewater responsiveness

4.4.4 Dry weather overflows

As can be seen below dry weather overflows are in line with national median values. In all cases the target has been met. In 2021-22 an opportunity was taken to make the target more challenging.

WasteWater Measure Description	National Average	Target	Achieved	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.	24-27	28-35
Number of dry weather sewage overflows from the Council's sewerage system per 1,000 connections to that sewerage system	1.199 (2017-18)	< 15	0.4	< 15	1.4	< 15	2.4	< 3	1.2	< 3	0.9	< 3	< 3

Table 4K – Wastewater dry weather overflows

4.4.5 Inflow and infiltration

During wet weather events our wastewater systems are typically impacted by inflow and infiltration. Inflow is excess rainwater directly flowing into the network via dislodged manhole covers, household gully traps or illegal connections to the network. Infiltration is excess rain or groundwater entering the network via fractured or displaced underground pipes. Both inflow and infiltration place strain on our wastewater networks and in severe

instances result in network surcharging and inability to meet discharge consent conditions. The southern low-lying area of Edgecumbe township is prone to flooding requiring additional attention to address this situation. See Figure 4L, below as an example of I&I response over time.

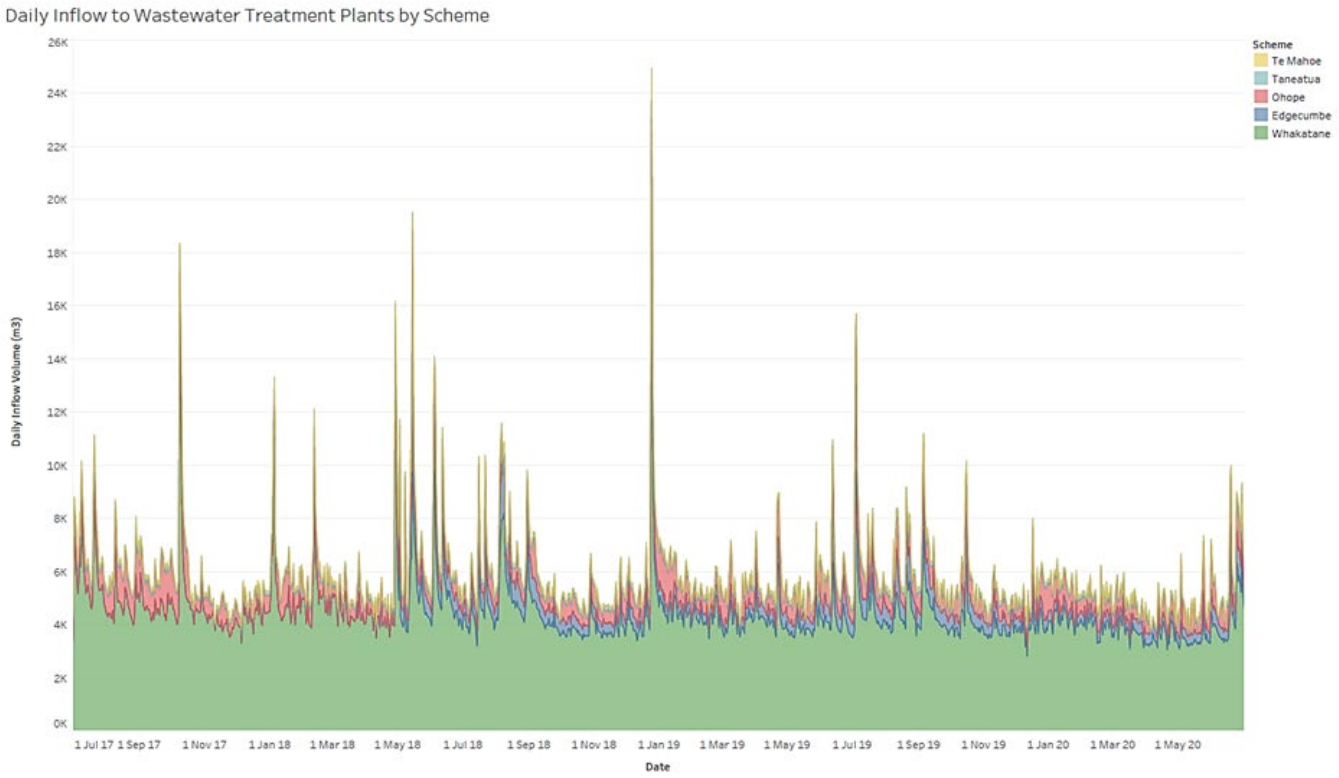


Figure 4L - Daily wastewater volume coinciding with major rain events

4.4.6 Resource Consents

Resource consents are a requirement for wastewater management works due to the potential impact on receiving environments.

We have a database of consents that relate to wastewater management activities. These are provided in the table below. There are several requirements that must be met during the life of the consent. Operating, monitoring and reporting conditions are typically stipulated.

The resource consents for discharges from the Whakatāne, Edgecumbe, Tāneatua, and Murupara wastewater treatment plants expire in 2026. Prior to expiry, we will need to seek new resource consents. It is expected that it will be necessary to undertake works to improve the treatment of the wastewater and that this will be a requirement of new consents. Funding for any upgrade works is absent from the first 10 years of the LTP due to funding and financing constraints. Consent expiry is a key driver for the treatment plant upgrades planned though our Long-Term Planning and highlighted within our 30-year infrastructure strategy.

The table below provides an overview of all discharge permits, including their purposes, locations and relevant dates.

Permit Number	Permit Activity Type	Permit Purpose	Permit Location	Permit Granted date	Permit Expiry Date
20049.0.01-DC	Discharge Wastewater	Discharge wastewater from Oxidation Ponds to be constructed at Tāneatua into the natural waters of the Whakatāne River	Whakatāne River at a point downstream of Tāneatua	6/04/1971	1/10/2026
20368	Discharge Wastewater	Discharge treated effluent from oxidation ponds into the Bay of Plenty	Whakatāne urban area	8/06/1978	1/10/2026
20702	Discharge Wastewater	Discharge effluent from Edgecumbe oxidation ponds into the Omeheu Canal	Edgecumbe Soldiers Road	1/05/1980	1/10/2026
20778	Discharge Wastewater	Discharge effluent from the Murupara Borough Oxidation Ponds into the Rangitāiki River	Murupara Borough Oxidation Ponds into the Rangitāiki River	5/03/1981	1/10/2026
62656	Discharge To Air	Discharge odorous gases from Murupara sewage treatment facility to the air	Murupara sewage treatment facility	1/11/2004	30/09/2026
62657	Discharge To Air	Discharge odorous gases from Edgecumbe sewage treatment facility to the air	Edgecumbe sewage treatment facility located at Edgecumbe Soldiers Road Edgecumbe	1/11/2004	30/09/2026
62658	Discharge To Air	Discharge odorous gases from Tāneatua sewage treatment facility to the air	Tāneatua sewage treatment facility	1/11/2004	30/09/2026
62659	Discharge To Air	Discharge odorous gases from Whakatāne sewage treatment facility to the air	Kopeopeo Canal Road, Whakatāne	8/08/2006	30/10/2026
RM16-0143-DC.01	Discharge To Land	To discharge treated wastewater to land	16 Te Mahoe School Road, Lake Matahina, Te Mahoe	28/07/2016	30/06/2051
65984.0.01-DC	Discharge Other	Discharge of treated effluent from the Ōhope Wastewater treatment plant to the Pacific Ocean	Ōhope wastewater treatment plant	23/11/2016	30/09/2035
65984-CC.01	Discharge Other	Occupy space in the common marine and coastal area for a discharge structure associated with the Ōhope wastewater treatment plant.	Ōhope wastewater treatment plant	23/11/2016	30/09/2035
RM21-058-AP	Discharge To Air	Authorise and set conditions for the discharge of contaminants (gases and aerosols) to air from the Ohope Wastewater Treatment Plant	Wainui Road, Ōhope	15/02/2022	30/09/2035

Table 4M – Wastewater Discharge Consents

4.5 Stormwater performance

4.5.1 Three Waters Regional resource consent compliance performance

Resource consents are required to undertake an activity that might affect the environment and not allowed, as a permitted activity in the District or Regional Plan.

We report to the Regional Council quarterly on the performance against stormwater consents. Currently, it's fair to say the stormwater consent report is fragmented and only really covers discrete locations in the network and these are typically at the locations of more recent point discharge locations. We welcome a compliance approach under the proposed Whakatane comprehensive stormwater consent that will provide a more holistic way to monitoring the effects of stormwater at a catchment level. Currently, we have observed that stormwater discharges meet compliance.

4.5.2 Customer satisfaction

For the six years prior to 2020, we engaged the National Research Bureau Council (NBRC) to undertake the CommunitrakTM survey to gather public opinion and to communicate our decisions and programmes to residents. From 2019/20, we engaged SIL Research to undertake the annual residents' survey. The change in provider and methodology means that comparisons between the most recent 2020 survey and those in earlier years will not be exact. However, we are confident that the new methodology will increase coverage and create a more diverse response and therefore the information gathered will be more representative of community opinion.

The result of the survey is shown

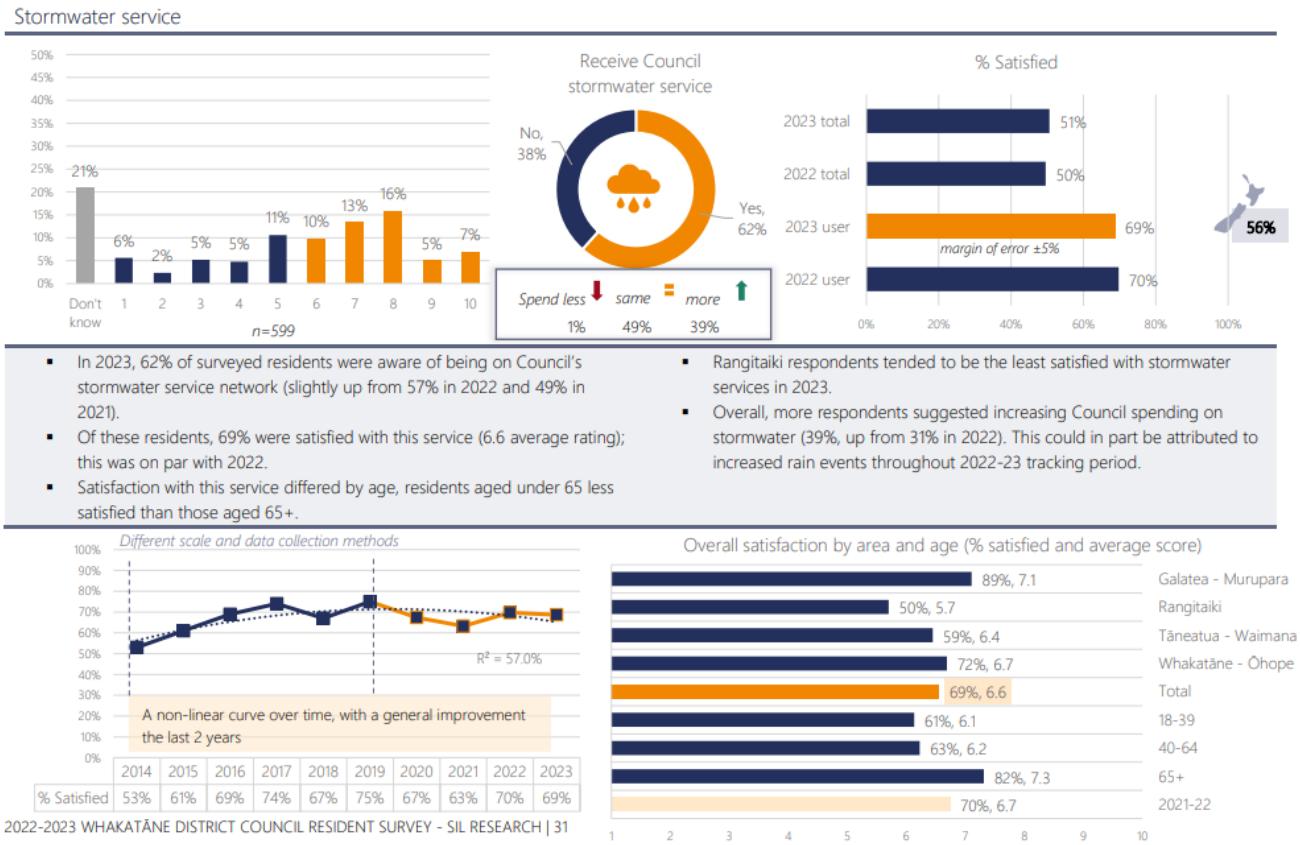


Figure 4N – Stormwater customer satisfaction

4.5.3 Resource Consents

BOPRC requires all territorial authorities to have a comprehensive stormwater consent (CSC) for all catchments. We are working closely with BOPRC towards delivering the CSC. We have submitted the Whakatane urban catchment CSC and are awaiting its approval before proceeding with the remaining catchments within the next 10 years. Along with the CSCs, each catchment will have an associated catchment management plan (CMP) which will identify issues within the stormwater networks and the best way of addressing these.

Resource consents -"discharge" primarily - impose conditions on stormwater management due to the potential impact on receiving environments.

We have a database of consents that relate to stormwater management activities. These are provided in the table below. There are a number of requirements that must be met during the life of the consent. Operating, monitoring and reporting conditions are typically stipulated.

The table below provides an overview of our database of consents that relate to stormwater management activities (**excluding consents for temporary discharges**).

Consent no.	Purpose	Granted Date	Expiry Date	Location
20183	For the purpose of stormwater runoff from a proposed subdivision at Mokorua, Whakatane.	6/03/1975	1/10/2026	White Horse Drive, Whakatane
20210	For the purpose of discharging stormwater from a 53 acre area of the Taneatua stormwater drainage system into a watercourse on the property of S. L. Mayne, Taneatua.	2/10/1975	1/10/2026	Tāneatua Stormwater Drainage System
20267	For the disposal of stormwater from the Awatapu urban area.	2/09/1976	1/10/2026	Awatapu Urban Area, Whakatāne
20319	Discharging stormwater from the Grantees' subdivision adjacent to State Highway No. 2 at Whakatane. Discharge stormwater from an industrial subdivision at Whakatane.	1/09/1977	1/10/2026	Kopeopeo Canal, Whakatāne
21117	For the purpose of discharging stormwater from a residential subdivision adjacent to Harbour Road opposite Tuati Street, Ohope.	7/04/1983	1/10/2026	adjacent to Harbour Road opposite Tuati Street, Ohope
21785-1	Discharge stormwater from a subdivision into the Waiewe Stream	5/12/1985	1/10/2026	Waiewe Stream, Whakatane
21785-2	Discharge stormwater from a subdivision into a gully leading to the Wainui Te Whara Stream	5/12/1985	1/10/2026	Waiewe Street, Whakatane
24283	Discharge stormwater to the Whakatane River.	16/10/1995	31/08/2004	From an outfall at the Whakatane Gardens to the Whakatane River
24801	Discharging stormwater containing sediment from a catchment incorporating 1.9 hectare of earthworks during the construction of a residential subdivision to Waiewe Stream and to discharge clean stormwater from the completed subdivision to Waiewe Stream.	4/12/1996	30/11/2011	Waiewe Stream, Whakatane
40251	Discharge stormwater to Ohiwa Harbour.	20/12/1996	30/11/2006	Ohiwa Harbour, Ohope
24943	Discharging clean stormwater from the Waterford Estate subdivision and adjacent road and residential areas to the Maraetotara Stream. Discharge stormwater to water.	15/07/1997	30/06/2012	An outfall on the Maraetotara Stream within the Maraetotara Reserve, Ohope
60053	Discharging stormwater from the 1.2 hectare residential subdivision on Walnut Grove, Whakatane into Awatapu	15/10/1998	31/10/2008	Walnut Grove, Whakatane

Consent no.	Purpose	Granted Date	Expiry Date	Location
	Lagoon.			
60171	For the purpose of discharging stormwater from a 4400 square metre catchment at Port Ohope, Ohiwa harbour.	20/01/1999	30/12/2033	Port Ohope, Ohiwa harbour
60344	To authorise the discharge of sediment contaminated stormwater from sediment retention ponds during earthworks operations, and continuing until the site is fully rehabilitated, and to authorise the discharge of treated stormwater from an urban residential subdivision. Discharge treated sediment contaminated stormwater to Ohiwa Harbour, and to land where it may enter Ohiwa Harbour; and treated stormwater to Ohiwa Harbour, and to land where it may enter Ohiwa Harbour.	14/09/1999	31/08/2014	Ohiwa Harbour
61841	For the purpose of diverting stormwater, detaining stormwater in a stormwater detention pond, and discharging stormwater from a stormwater detention pond to land where it may enter the Wainui te Whara stream.	10/12/2002	30/11/2022	White Horse Drive, Wainui Te Whara Stream, Whakatane
62713	For the purpose of authorising and setting conditions on the placement and use of an outlet structure in the bed of the Whakatane River, and the discharge of stormwater from a commercial development into the Whakatane River via a pump station. Constructing and using an outlet structure in the bed of the Whakatane River, and the discharge of stormwater from a commercial development into the Whakatane River via a pump station.	27/02/2005	30/06/2015	The discharge point is located on the Whakatane River, Whakatane
63352	Discharge storm water to the Kopeopeo Canal	26/10/2005	30/09/2030	The Hub, State Highway 30, Whakatane
64930	For the purpose of implementing a reticulated stormwater system for the residential areas above the escarpment at Cliff Road, Brown Road, and Otarawairere Village and discharging stormwater.	20/09/2007	30/09/2027	Ōhope West End Escarpment
65353	To provide for the construction of a stormwater outfall structure in the bed of the Wainui te Whara stream and for the permanent discharge of up to 1,000 litres per second at the maximum pumping rate. The proposal will provide increased stormwater capacity and will reduce the risk of flooding in the adjacent residential catchment.	29/05/2008	30/04/2028	Adjacent to 35 Douglas Street, Whakatane
65617	To authorise earthworks, the damming and diversion of stormwater, the discharge of stormwater to water and the installation of structures to protect Edgecumbe from surface and stormwater flooding from land to the west and from direct rainfall.	22/09/2009	31/08/2044	Pump station at corner of Otakiri Rd and Te Teko Rd, culverts in south west Edgecumbe, Rangitaiki Plains
65604	For the purpose of authorising the discharge of stormwater to the Whakatane River and the placement, use and maintenance of associated discharge structures and erosion protection.	1/06/2010	30/04/2045	Whakatāne River Bank, adjacent to 2 Keepa Road
66394	To authorise and set conditions on the extension and use of stormwater outlets on Ohope beach, the discharge of stormwater to the coastal marine area (see advice note 12), the scraping of beach from the sand to cover extended outlets, and occupation of space in the coastal marine area.	29/09/2010	31/08/2020	Several locations along Ohope beach
65835	To authorise the re-grading of existing stormwater drains to increase capacity, the discharge of stormwater to water from a new pump station in the north-west of Edgecumbe, and associated in-stream structures.	20/01/2011	31/12/2045	Rangitāiki Plains / Edgecumbe

Consent no.	Purpose	Granted Date	Expiry Date	Location
67409	For the purpose of authorising the discharge of stormwater to a drain.	12/03/2013	28/02/2048	Open drain at 98B College Road, Edgecumbe
67420	For the purpose of authorising the discharge of stormwater to Lake Sullivan and works associated with the formation of the stormwater outlet.	12/03/2013	28/02/2048	Lake Sullivan, Whakatane
68000	To authorise and set conditions for the removal of existing stormwater outlet and erosion protection structures and construction of new stormwater outlet and erosion protection structures.	19/11/2014	30/11/2049	Maraetotara Stream, Ohope
68057	Discharge stormwater to a tributary of the Whakatane River and the Whakatane River	4/08/2015	4/08/2040	Whakatane Recycling Park, 60 Te Tahi Street to a tributary of the Whakatane River and Whakatane River
RM16-0450-DC.01	To authorise and specify the conditions associated with the discharge of stormwater from Ohope recreation reserve to ground soakage via subsurface stormwater chambers, and during heavy rain events to the Maraetotara Stream via subsurface conveyance and an open swale.	15/12/2016	3/08/2051	251B-291 Pohutukawa Avenue & 5 Te Akua Street, Ohope
RM20-0113-DC.01	To authorise and set conditions for the discharge of residential stormwater to land soakage.	13/05/2020	1/05/2055	Ocean Road, Ohope
RM20-0493-DC.01	Discharge of stormwater to surface water, or to land where the discharge enters surface water, where the rate of discharge is greater than 125 litres per second for a 10 minute duration 10% AEP storm event.	30/10/2020	30/10/2023	Orini Canal and Keepa Road Reserve, 80m north of the Fergusson Road & Keepa Road, Whakatane

The consents shaded green in above table will become inclusive within the Whakatane urban catchment CSC.

Table 4O – Stormwater Discharge Consents

4.6 Energy management performance

Although not regulated, we have undertaken a journey of assessment of high energy consumption assets and facilities so that we can track energy performance and work towards carbon emission reductions across our business.

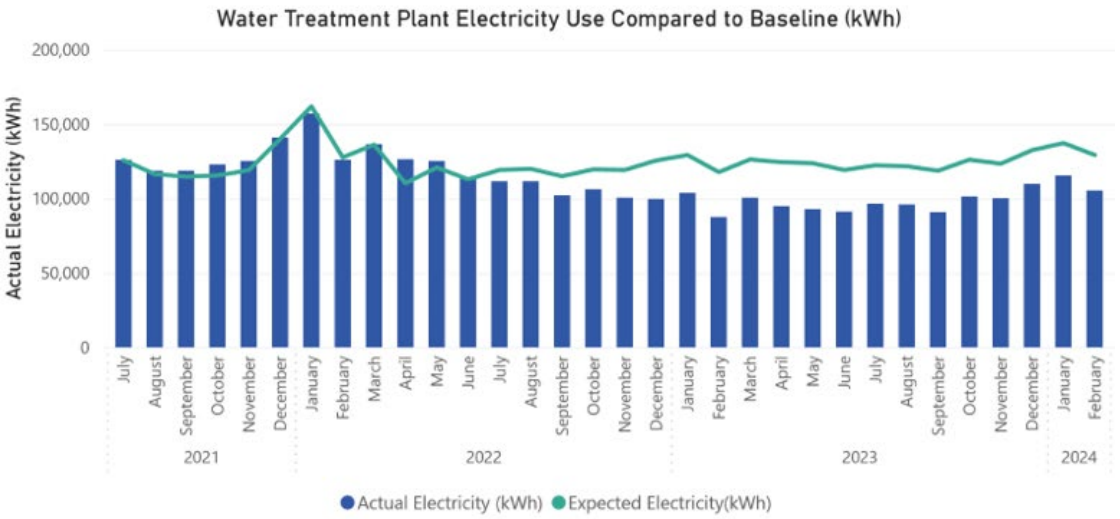
We undertook assessment of 'low hanging fruit' which mainly consisted of older, large, inefficient pumps across our water network. By replacing these pumps with modern efficient pumps significant savings were made towards the reduction of carbon emissions. For further details please see Council's Carbon and Energy Reporting dashboard.

https://app.powerbi.com/view?r=eyJrIjoiMzQwMDQwNjktMDcwMi00NDUxLTk5NzctOGYyOTRjYjRmNmY3IiwidCI6IjA5NjdiMzI2LTg4MzYtNGQ2ZS1iYWRhLTFkMDI3YmNjYWJjNSJ9

The below diagrams and figures show the effects of our effort for our Whakatane Water Treatment plant which is one of the latest pump replacement programmes.

Water Treatment Plant

$3,585	23,982	19%	311,613	1,986
Monthly Energy Cost Savings	Elec. Savings (kWh/mo)	Elec. Savings (%)	R12M Electricity Savings (kWh/yr)	CO2e Savings (kg/mo)
$52,765				25,802
R12M Energy Cost Savings				R12M CO2e Savings (kg/yr)



Note: New Zealand was in Covid-19 alert levels 3 and 4 from 23 March until 12 May, 2020. Energy use may have been impacted during this time
Baselines were updated for all sites from July 2022.

Water Treatment Plant

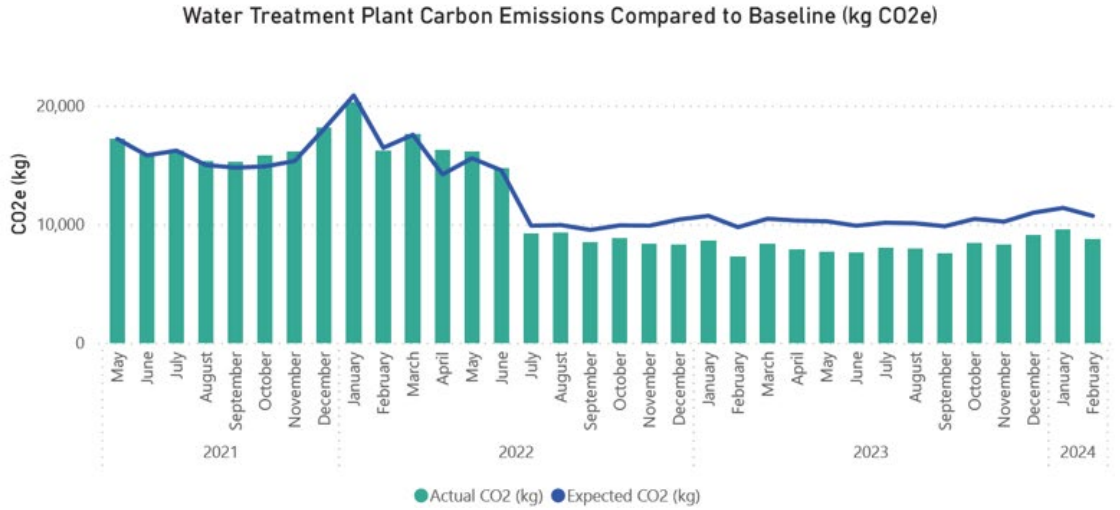


Figure 4P – Whakatane Water Treatment Plant Energy profile

4.7 Climate change strategy and action plans

Climate change and its related impacts cannot be avoided. Therefore, factoring in future climate change events is an essential task for Council, we have developed a Climate Change Strategy which align and streamline works already underway throughout Council's activities. Supporting the strategy are several action plans, one of which is Climate Change Action Plan – Water Services. Full details of the current Water Services action plan can be found via: https://www.whakatane.govt.nz/sites/www.whakatane.govt.nz/files/documents/climate-change-action-plans-water-web.pdf

4.8 Three Waters Opportunities for improvement

A number of opportunities exist for LoS and performance improvement. These are addressed as time and resource allow.

Drinking water compliance – review drinking water compliance issues in terms of water safety plans, QA rules and other metrics. Continuously refine operational matters and programme for capital upgrades to meet all drinking water standards.

Wastewater compliance - review wastewater compliance issues. Continuously refine operational matters and programme for capital upgrades to meet requirements.

Reducing water loss – investigate water supply networks with high water loss and develop remediation programmes which may include upgrade/renewal of poor condition assets and establishment of pressure management programme.

Reducing dry weather overflows – investigate wastewater networks with high incidence of dry weather overflows to determine the root causes and apply mitigation measures. This may include: real time monitoring of the wastewater network; asset management practice (regular inspection, cleaning, and repair of pipes, pumps, and other equipment); capacity investigations and upgrades; and public education to reduce the amount of non-flushable items and other materials that can cause blockages and overflows.

Reducing inflow and infiltration – investigate wastewater networks with high inflow and infiltration and develop a remediation programme which may include testing for illegal stormwater connections and upgrade of poor condition assets. Include consideration of "private" assets that contribute.

Resource consent compliance – Maintain resource consent information database. Undertake a review and prioritisation exercise to identify focus areas based on expiry dates, conditions not being met, work done to date, non- compliances, and engagement with mana whenua.

5. Planning for the future

5.1 Understanding demand drivers

5.1.1 Demand drivers

Drivers that may impact demand for three waters services are:

- **Population, and land use change -** population growth will result in increased consumption of drinking water and discharge of wastewater. It will also generally result in land use intensification.
- **Demographics –** changes in demographics can lead to changed diurnal and seasonal demand patterns for water and wastewater services.
- **Consumer behaviour change -** consumer behaviours directly impact demand, such as choosing to adopt water conservation practices to reduce demand for drinking water and consequently reduce wastewater discharges.
- **Seasonal demand –** fluctuations in demand for water and wastewater services due to seasonal changes such as tourism and industry.
- **Legislative, regulatory and policy change –** these aspects can incentivise or otherwise modify consumer behaviour, or how the service is provided.
- **Economic change –** economic growth, such as the introduction of new industry, can significantly increase demand for drinking water supply, and alter wastewater discharge flows and characteristics, and increase impervious areas.
- **Climate change adaptation and carbon reduction –** adapting practices and infrastructure to accommodate the effect of climate change and reducing built and operational carbon.

5.1.2 Challenges in meeting demand

Projecting the levels and timing of water supply, wastewater and stormwater infrastructure investment to meet demand is a complex process that presents several challenges, including:

- **Where will growth occur?** Growth can currently occur anywhere within the Whakatane District in accordance with the District Plan. As per RMA requirements, developers submit their development proposals one by one as their perception of the market dictates. This makes it impossible to forecast the implications of growth at scale. We are reduced to considering the implications of growth based on the development proposals that "cross the planning desk". This results in significant time and information pressures when assessing individual development applications.

  To allow a more proactive approach, Council has teamed up with neighbouring Kawerau and Opotiki to develop a joint spatial plan. All infrastructure providers have an opportunity to contribute to this workstream. Once the spatial plan is published in mid to late 2025, we intend to incorporate its recommendations into a District Plan review. This will allow controls and measures to be put in place to guide future development in general accordance with the spatial plan. This will allow a more holistic approach to infrastructure provision. The District Plan review will however take some time to come to fruition. For more information about the spatial plan see Council's draft development contributions policy.

- **Uncertainty in demand projections -** projections of demand for infrastructure are influenced by factors such as population growth, land use changes, and economic growth, but are subject to uncertainty, making it challenging to determine appropriate investment levels. The current economic climate is a risk to investment planning for new and existing infrastructure, as interest rates and inflation are high,

potentially slowing economic and residential growth. Underutilisation of infrastructure in low-uptake areas could have severe funding and affordability impacts on investments and should be considered in planning for growth.

- **Cultural concerns -** in order to give effect to Te Tiriti o Waitangi and Te Mana o te Wai, a number of changes are required to services. This is especially relevant in respect to wastewater discharges and surface water takes but has implications across all aspects.
- **Changing community expectations -** as society changes, expectations for service levels increase, with some expectations defined by legislation and standards, while others, such as resilience, are less clearly defined. Community expectations are changing in key areas such as wastewater discharges and overflows, network resilience, drinking water taste, offensive odours, vulnerability to flooding, and ecological impacts.
- **Limited resources -** infrastructure investment requires significant financial resources, and it is not possible to invest in all necessary infrastructure at once. Council must prioritise investment decisions based on the most pressing needs.
- **Regulatory requirements -** regulatory requirements may impact the nature, timing and scope of infrastructure investment. Allowing volumetric billing for wastewater services would be a demand management tool.
- **Political considerations -** infrastructure investment decisions may be subject to political considerations, which may also impact the nature, timing and scope of investment.

5.2 Demand planning

We use several methods for demand planning and management, operations planning and to inform the need for renewals.

5.2.1 Meeting existing demands

The ability of the networks to manage current demand varies. This is evidenced by performance against levels of service targets as covered in Section 3. Key aspects associated with meeting existing demand are given below.

Table 5A Meeting existing demands

Service goal	Comment
Water supply	
Provision of safe and healthy drinking water. As measured by compliance with Drinking Water QA rules and Environmental Performance Measures.	Ensure that drinking water supplied is in accordance with demands placed on the system by customers. Ensure that the supply is in compliance with the Drinking water QA rules.
Provision of firefighting water supply to maintain public safety. As measured by compliance with SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice.	Measuring direct compliance with SNZ PAS 4509:2008 is not achievable at scale and not done by any water suppliers in NZ. This results in a variety of approaches. The larger councils have hydraulic models that are used to give an understanding of capacity, set levels of service, and identify improvements. These improvements are then integrated with renewal and growth projects for efficient delivery. Moving forward, a more consistent approach that can be applied nationally should be developed. Under section 73 of the Fire and Emergency New Zealand (FENZ) Act 2017, FENZ must review the code of practice every three years. It will be important that Water Network Operators have input into this review. Currently we strive to comply with SNZ PAS 4509:2008 for all our urban communities.

Service goal	Comment
Provision of water which meets community expectations. As measured by drinking water complaints regarding: • clarity • taste • odour, • pressure or flow • continuity of supply	Refer section 3.3.2 Since adjusting the targeted level of customer satisfaction we have achieved the target. The number of complaints registered is close to or below the national median level.
Wastewater	
Safe conveyance of wastewater which protects the environment. As measured by number of dry and wet weather overflows from the network.	Refer section 3.4.4 Dry weather overflows are in line with national median values. In all cases the target has been met. In 2021-22 an opportunity was taken to make the target more challenging
Safe treatment and disposal of wastewater which protects public health and the environment. As measured by compliance with consent conditions at each treatment facility.	Refer section 3.4.1 At a macro level we have not received abatement or infringement notices nor enforcement orders nor conviction. However there may from time to time be instances where consent conditions have not been complied with. Many of the current consents are at a ”basic” level meaning that compliance is relatively easily achieved. Future consents are likely to be much more prescriptive requiring active compliance.
Stormwater	
Safe collection and disposal of stormwater which protects the community property. As measured by the number of events of flooding of habitable floors through inadequate capacity of the stormwater network to manage stormwater runoff.	Over the last five years there is a record of 1 habitable floor having flooded in the District, due to inadequate stormwater systems.

5.2.2 Meeting future demands

Population is increasing and projected to keep increasing in Whakatāne District.

5.2.3 Effect of land use change on three waters services

Community aspirations and strategies for growth have the potential to impact the natural environment and the three waters services through:

- New greenfield development, which can degrade receiving environments and increase flooding risks.
- New developments which may increase the size and extent of the networks, increasing operation and maintenance costs.
- Active involvement with papakainga developments in order to address the often-unique challenges that these face.
- Extra growth and demand can exceed the capacity of present infrastructure, and/or the ability of the existing infrastructure to provide services.
- Intensification of existing urban areas, which can significantly increase rainfall runoff, placing additional stress on the capacity of existing infrastructure and exacerbating existing adverse effects.
- Land use change is particularly applicable to stormwater management services. Effective stormwater management requires an integrated water-sensitive design approach that occurs from the start of the

land use planning process, combined with the provision of good quality green and built infrastructure.

- Aligning work programmes and investment priorities with growth priorities and infrastructure strategies.
- Active involvement in plan changes, spatial planning and other major consents/development processes to ensure effective three waters services outcomes, including the development of provisions that encourage sustainable stormwater management and networks.
- Developing and communicating guidelines, including for urban design, that enable communities and developers to apply water sensitive/low impact design principles and techniques.
- Utilising robust and integrated quality assurance, subdivision and development standards and vesting processes for new three waters infrastructure.
- Supporting and enabling growth by obtaining required discharge consents aligned to priority intensification and future urban areas.
- Working with other infrastructure providers to identify opportunities for collaboration and sequencing of infrastructure.

5.2.4 Demand drivers and impacts

Demand drivers and their expected impact on three waters services are outlined below.

Table 5B Demand drivers and impacts

Driver	Trend and impact on demand
Population	As the population grows, there will be a higher demand for services, leading to the need for investment in new infrastructure and sustainable water sources. Additionally, population growth can increase stormwater runoff, which requires more robust stormwater infrastructure to prevent flooding, erosion, property damage, and degradation of water quality in receiving environments. Greenfield areas are being developed and offer opportunities for growth, but also pose risks and challenges that need careful management.
Land use change	Land use change as described above and intensification requires extension of new and capacity upgrades to existing infrastructure.
Un-serviced areas	We may be called upon to service areas that are currently un-serviced. The current example is a wastewater scheme for Matata. A co-design process is well advanced and construction is anticipated in the early years of the LTP for Matata. Other areas may be identified by the spatial planning work currently underway. Possibilities include extensions to existing serviced areas or new standalone areas e.g. - Awakaeri and Te Teko amongst others.
Demographic change	As with the rest of New Zealand, an ageing population influences Whakatane District. The challenges of demographic shift include changes in lifestyle choices – e.g. potential peak demand times for wastewater and water supply services.
Consumer behaviour change	Consumer behaviours are expected to generally remain static. However, this can be directly influenced by demand management programmes (refer Section 5.3).
Seasonal demand	Seasonal demand changes, such as an increase in holiday makers or seasonal workers or changes in industrial demand over the course of a year, can have a significant impact on wastewater and water supply services. To manage these impacts, we may need to invest in the upgrade of existing networks and associated treatment plants to cater for increased demand and allowing for fluctuations in demand.
Policy and regulation changes	Changes in regulations and policies can significantly impact the delivery of wastewater, water supply, and stormwater services. For instance, some existing assets may need to be renewed before the end of their useful lives due to changes in water quality standards, discharge consent limits, and zoning regulations. These changes can impact on future planning and investment decisions for three waters infrastructure.
Economic growth, change or closure	Economic growth and development can also impact the delivery of water supply and wastewater services. As new businesses and industries move into an area, the demand for three waters services may increase. Examples of key recent and potential developments include mussel processing in neighbouring Opotiki, industry in neighbouring Kawerau or the paperboard mill at the Hub.:

Driver	Trend and impact on demand
Climate change adaptation, carbon reduction, energy usage and cost.	Climate change adaptation and carbon emission reduction will affect the delivery of water services. More sustainable and resilient infrastructure will be required. Upgrading existing systems, carbon reduction. reducing energy consumption, targeting renewable energy, and implementing efficient water management practices will be necessary. Carbon usage and production and energy costs can also impact the delivery of water supply and wastewater services. In particular, wastewater treatment is carbon generative and energy-intensive. Refer also section 4.6 – Energy Management.

5.3 Demand management

This asset management plan proposes demand management strategies where practicable to deliver service provision and implement priority projects. Where possible we will manage changes in demand through non-asset, operational demand management programmes to influence behaviour and minimise asset-based solutions.

Demand management objectives and measures are described in the table below and in the following sections.

Table 5C: Demand Management Objectives and Measures

Demand management objectives	Demand management measures
• Optimise utilisation / performance of existing assets. • Reduce or defer the need for new assets. • Meet organisational strategic objectives. • Deliver a more sustainable service. • Respond to customer needs. • Increase consumer information	• Operation control and optimisation, e.g. leakage and I&I. • Regulation, e.g. bylaws or equivalent. • Incentives, e.g. pricing structure. • Educational initiatives to change customer behaviour. • Demand substitution, e.g. water reuse. • Smart metering

5.3.1 Operation control and optimisation

Water loss detection and management - management of water loss from the networks includes addressing leaks and bursts, meter failures and under-recording. Responses include acoustic leak detection guided by monitoring of district metering area night flows, network maintenance and renewal programmes, pressure management and continual improvement of meter management. Water loss can be measured as a % of the total water used or by the Infrastructure Leakage Index (ILI). Refer section 3.3.4 for water loss information. Water losses from metered schemes are generally in line with national averages. Unmetered schemes have lower leakage than targets but exceed national averages.

Note that Whakatane District is extensively metered compared to other districts which assists with knowledge about water usage and leakage. The majority of customers pay volumetrically which also adds to awareness of water use. The tariff structure of fees and charges is an area where Council feels that improvements can be made in the future.

We have deployed a number of smart devices to record pressure variations and flow records – Smart meters. The information gained form smart devices can assist both Council and customers. This is an area for future innovation and growth.

Wastewater flow control and storage - flows within wastewater networks are managed at pump stations via telemetry networks and by identifying emergency storage quantities and opportunities at vulnerable points in

the network.

Pressure management - an infrastructure change that reduces the amount of water lost to leaks and used by appliances by moderating the normal operating pressure of a water supply network. It also helps extend the life of the pipes and reduce the break rate. Care is required to not adversely affect network performance including low pressure areas and fire suppression systems.

Inflow and infiltration programs - stormwater entry into the wastewater network through inappropriate connections and surface flooding, and ingress of groundwater through network faults can be addressed through specific inflow/infiltration programmes. These need to cross the public/private system boundary.

5.3.2 Regulation

Water restrictions - water restrictions are a behaviour change tool that is undertaken in a phased approach when there is risk that demand will approach or exceed supply. Phases progress from heightened awareness and requests to reduce water use, to steadily increasing restrictions on outdoor use. Most councils in New Zealand employ water restrictions to heighten awareness and to manage summer demand.

Trade waste bylaws - used to regulate the volume and nature of wastewater that commercial and industrial customers can discharge to the network. They are an important tool in ensuring that the network and wastewater treatment plant can accept and treat the wastewater it receives. Pre-treatment by individual trade waste customers can reduce loads on our systems and also reduce trade waste charges paid by those customers.

Development controls - increasing demand on stormwater systems is managed by requiring new developments to not increase runoff rates compared to the predevelopment condition. This is achieved through the use of stormwater detention and soakage devices. Such devices can come with high operational costs. Another development control for stormwater management is to restrict development of land subject to natural or man-made hazards to the extent possible by the RMA & Building Acts.

Future regulatory change – Regulatory change will occur in the future. This could include the ability to implement volumetric billing for wastewater. This has been proven to heighten awareness of water usage and associated cost in Auckland where it has been deployed.

5.3.3 Incentives

Water metering – Volumetric charging for drinking water is a strong lever or incentive for customers to minimise use. Whakatane uses volumetric billing for 89% of its drinking water customers.

UAC/Volumetric split – The split between these two sources of water revenue should be designed with care. Artificially high or low UACs or volumetric charges can be perceived as unfair or may counter-incentivise customer behaviour.

5.3.4 Educational initiatives

Education is a critical part of the behaviour change component and can be one of the most cost-effective tools available. Initiatives can include:

- Despite volumetric billing being in place for the majority of its customers, knowledge of this fact is not universal. There are opportunities to further enhance customers' understanding of this situation and their opportunity to influence their own usage and resultant costs.
- Water, wastewater and stormwater programmes through media as well as specific community forums and school visits. The water programmes focus on water conservation, wastewater focuses on what

should go down the sewer (and what shouldn't) and stormwater on minimising contaminants entering the stormwater system.
- Targeted programmes for specific users, such as those on septic tanks, low pressure sewer and other technologies with specific requirements.
- Direct engagement with high water-use commercial and industrial customers.
- Participation in the formulation of government policy, regulation, and standards (e.g. flushable products).

5.3.5 Demand substitution

Typical substitutions for water supply are rainwater collection and greywater reuse. Both of these practices tend to be installed and managed by private property owners.

Rainwater collection – is most common in rural areas which are not connected to the public drinking water supply or for properties which receive a restricted water supply service. The district population is estimated to be 39,230 currently and the population served by drinking water networks is thought to be 29,590. Those non-network residents are likely to either take water from local ground, or surface water sources, and/or collect rainwater. If residents use such sources they are responsible for installing their own systems and ensuring compliance with Building Code, territorial and regional Council regulations.

Greywater reuse - involves the collection and treatment of wastewater generated from household activities, excluding toilet waste, for various non-potable purposes. Greywater typically comes from sources such as showers, bathtubs, bathroom sinks, and washing machines. Water can be re-used on the property for plants and vegetation or collected and treated for other purposes. Greywater reuse is currently not common practice in New Zealand. The individual property owner must install such systems themselves and ensure compliance with Building Code, territorial and regional authority requirements. "Availability" charges frequently apply, further disincentivising such measures.

6. Risk Management

6.1 Tough decisions already made

Decisions fundamentally influence the investment we intend to make in the three waters infrastructure over the next 10 years. The funding and financing situation described in the executive summary looms large over the riskscape that we face.

For Y1-Y10 this has resulted in the following decisions:

- No budget has been allowed for the implementation of Wastewater Treatment Plant upgrades to support re-consenting.
- We have reduced renewals of existing infrastructure assets down to 70% of what the needs based assessment recommended.
- We have reduced compliance and resilience based projects down to 50% of what the needs based assessment recommended.
- We are forecasting our opening depreciation reserve balances for the Long Term Plan 2024-34 to be $4.5million overdrawn, which means we are already on the back foot for funding asset renewals.
- We need to acknowledge, heading into a Long Term Plan that is forecasting a significant step change increase in capital expenditure, that the current funding model is not sustainable and no longer fit for purpose.

6.2 Risks and their proposed management

With a constrained budget, come a number of key risks that we must effectively manage across the three waters programme. The following outlines these risks including identifying relevant projects that won't be delivered or only partially delivered in the first ten years of the Long Term Plan. The specific risks identified are outlined below:

1. Failure to meet current regulatory requirements

- Inability to meet modern discharge consent conditions [Accept]

2. Deferral of treatment plant upgrades

- Increased failures due to age and condition [Manage using limited budget]
- Consents expire 2026. Propose to use RMA s124 to operate on expired consents [Accept]
- Negative iwi/community perception – e.g. discharge to surface waters. [Accept]
- Negative iwi / community perception – discharging into rivers [Accept]

3. Limited magnitude of wastewater network renewals

- Increase in blockages / pipe collapses / breaks / spills [Manage using limited budget]

4. Various smaller projects

- Lack of resilience – storm events [Accept]
- Potential rising main failures result in environmental consequences [Manage using limited budget]
- Budgets could be exceeded if storm events / significant failures [Accept]
- Limited magnitude of wastewater network renewals

5. Limited magnitude of drinking water network renewals

- Increased pipe failures, reactive cost more expensive [Manage using limited budget]

6. Limited drinking water treatment plant upgrades/renewals (excludes Ruatoki & Murupara, both included in Y1-Y3)

- All other issues (moderate / minor) from Water Safety Plans [Manage using limited budget]
- Risk of rural pollution, saline intrusion and possible cyanobacterial event at Whakatāne plant [Accept].
- Dissatisfaction with performance of existing plant, nearing end-of-life. Continuing taste issues due to surface water source. No flexibility of separated, non-interconnected plants. Plant prone to saline, cyanobacteria and rural runoff pollution events. [Accept]

7. Johnson road upgrades

- May be able to re-scope or reduce. This will become clearer as we learn about the performance of the newly upgraded Braemar plant and consent renewal implications. [Manage]

8. Various smaller projects

- Reservoirs ageing & not earthquake complaint – risk of damage or failure during seismic events [Accept]
- Coastlands watermain – lack of resilience & configuration issues [Accept]
- Budgets could be exceeded if storm events / significant failures [Accept]

9. Edgecumbe drainage improvements

- Poor performance SW network in Edgecumbe [Accept]
- Budgets could be exceeded due to storm events / significant failures [Accept]

10. Inaction on our own plans – e.g. Climate Change Strategy and Climate Change Action Plan: Water Services

- Reputational risk - residents lose faith in Council – not implementing their own plans [Accept]

11. Frequent project budget exceedances due to 50% & 30% budget withdraws mentioned above.

- Reputational risk – [Accept]

7. Renewal planning

Understanding renewal drivers and approaches for three waters networks and overall themes. Renewal forecasts are based upon age, performance and condition information.

As assets age and deteriorate, the risk that they are unable to function as designed, or deliver the required service reliably or efficiently increases. Eventual failure presents health and safety risks to people and the environment. Renewal activities, such as replacement and rehabilitation works, mitigate these risks by returning the asset to its original condition, capacity and function.

7.1 Renewal drivers

Key renewal drivers for the three waters are:

- **Decreased performance -** structural deterioration leading to compromised ability to meet the required level of service. This includes leaks and infiltration with associated capacity consequences, tuberculation of ferrous water supply pipelines compromising pressure and flow, structural collapse and blockage.
- **Increased maintenance -** requirements making it more economic to renew the asset.
- **Obsolescence -** the parts needed to maintain an important asset in operation may be difficult or impossible to source in case of failure.
- **Opportunistic -** opportunities to co-ordinate programmes with other utility providers, or other works programmes, are taken to achieve cost efficiencies (e.g. shared reinstatement costs) and potentially decrease disruption to the community. This can also include asset renewal because of growth requirements needing greater asset capacity.
- **Growth -** asset renewal because of growth requirements needing greater asset capacity.
- **Climate Change -** asset renewal / relocation because of ever increasing climate change conditions facing our communities.
- **Energy management –** renewing assets based on old and inefficient technology to minimise energy usage and maximise carbon emission reduction.

7.2 Renewal approach and themes

Our renewal approach endeavours to renew assets when they reach the end of their useful lives. Several factors come into play when assessing the renewal of an asset.

The following information is used when making renewal decisions:

- Asset installation date
- Expected asset lifetime (top down)
- Local knowledge of longevity factors (e.g. special ground conditions, construction materials)
- Climate change (e.g. incorporate climate change considerations when renewing assets)
- Knowledge of asset condition (e.g. inspection or testing records)
- Comparison with other peer assets
- Opportunities (e.g. roading or other service upgrades)
- Level of service delivered information (e.g. breaks, leaks, bursts)
- Maintenance history (e.g. work orders, costs)
- Obsolescence (e.g. availability of parts)
- Compatibility (e.g. interface with other components, fittings)
- Criticality
- Consequence of failure
- Grouping with other assets nearing renewal

In many instances some of these matters conflict with others. The weight of these factors also differs. Accordingly, renewal decision making is seldom simple.

We are developing a renewals framework for piped assets, guided by international and local standards. See Figure 7A below for the renewal roadmap/framework.

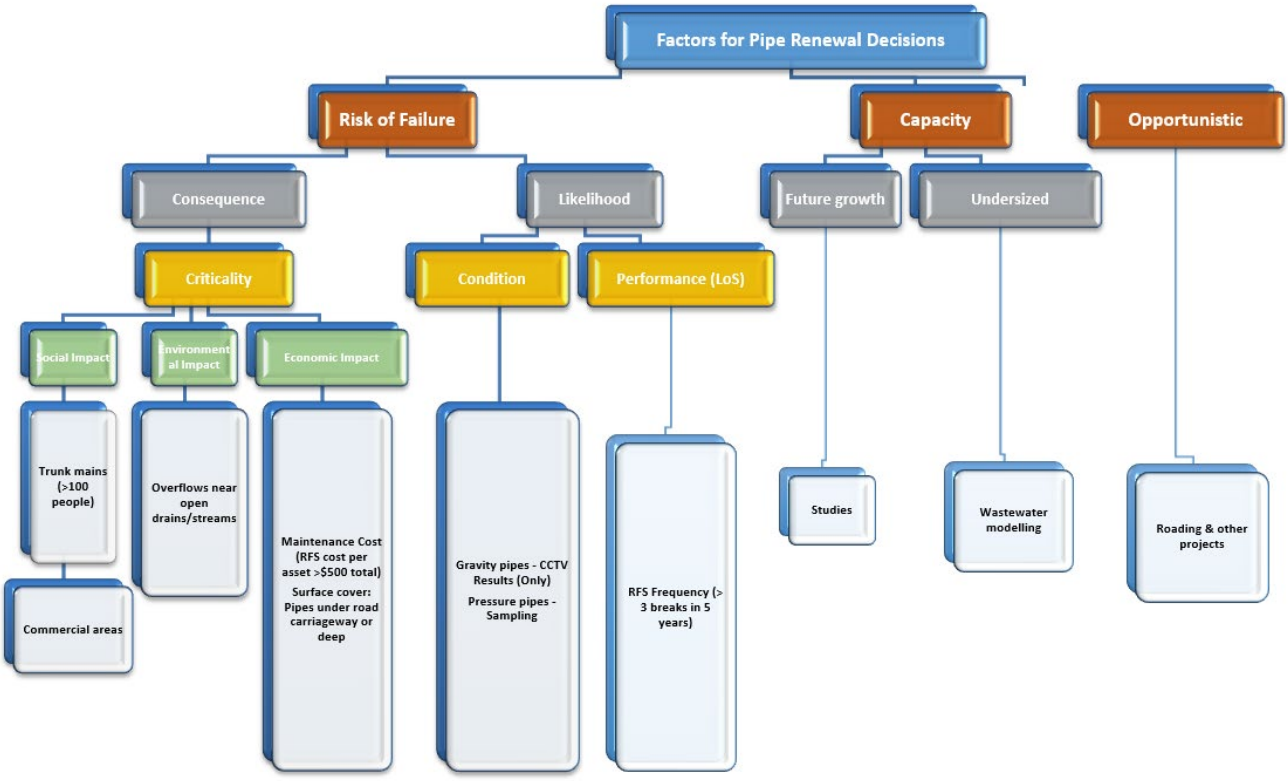


Figure 7A - Renewals roadmap – framework

7.3 Renewal forecasts

7.3.1 Drinking water pipeline assets

Renewal work is naturally targeted to those assets assessed as being in poor or very poor condition. The length of water supply pipelines assessed to be in poor or very poor condition, and therefore expected to be approaching the end of their service life is presented in the figure below.

This indicates that more than 1.73 km of pipes are likely to begin failing (Very Poor condition assessment), causing consumer and community disruption, and requiring increased maintenance and renewal effort within the next 5 to 10 years, with a further 68 km of pipes likely over the next 10 to 20 years (Poor condition assessment).

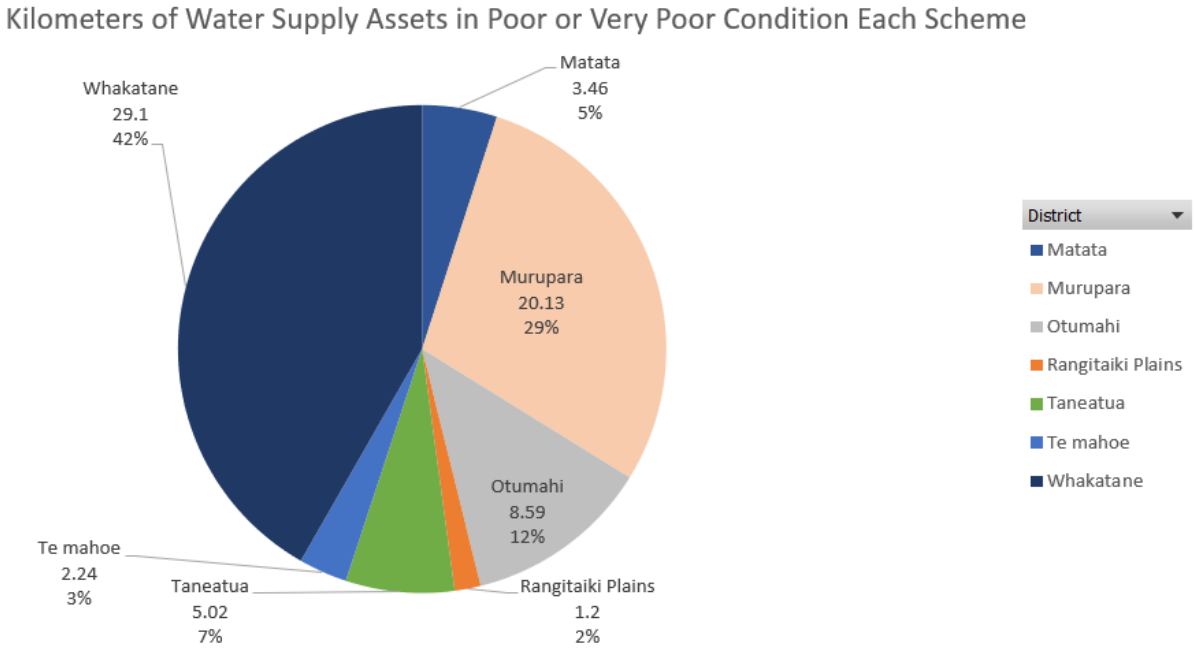


Figure 7B – Locations of condition 4 & 5 (poor-very poor) drinking water pipe assets

7.3.2 Wastewater pipeline assets

The length of wastewater pipelines assessed to be in poor or very poor condition, and therefore expected to be approaching the end of their service life is presented in the figure below. This indicates that more than 0.31 km of pipes are likely to begin failing (Very Poor condition assessment), causing consumer and community disruption, and requiring increased maintenance and renewal effort within the next 5 to 10 years, with a further 25 km of pipes likely over the next 10 to 20 years (Poor condition assessment). Overall, the wastewater pipe network is estimated to be halfway through its expected life.

The figures below show the areas with the worst condition wastewater networks, triggering renewal spend.

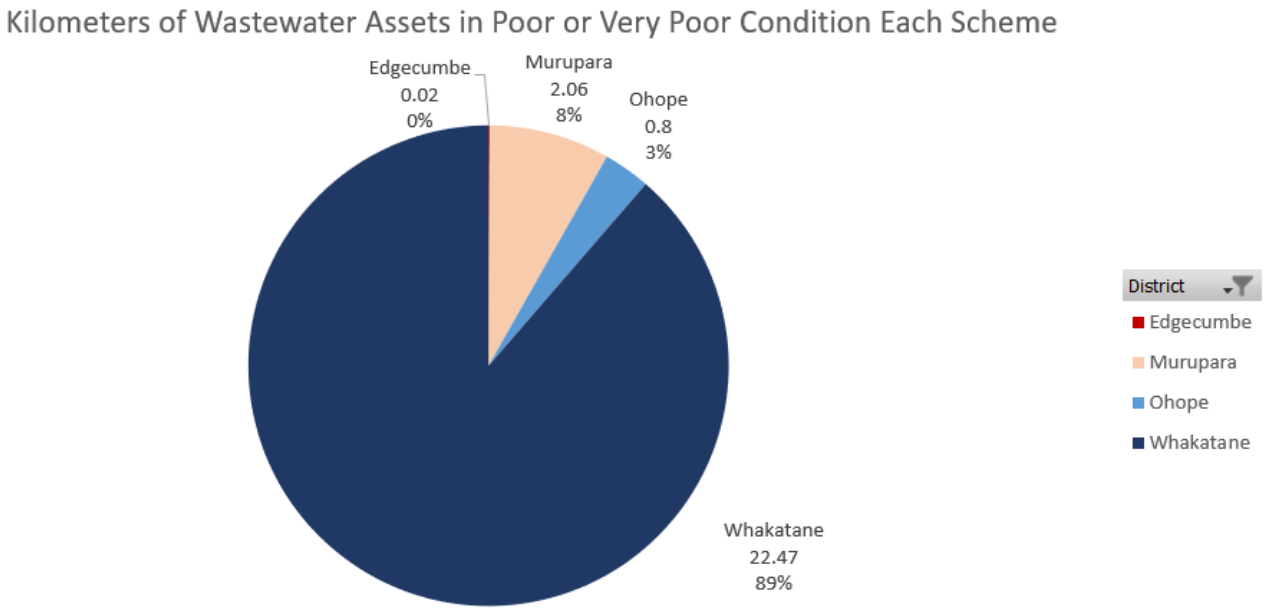


Figure 7C – Locations of condition 4 & 5 (poor-very poor) wastewater pipe assets

7.3.3 Stormwater pipeline assets

The length of stormwater pipelines assessed to be in poor or very poor condition, and therefore expected to be approaching the end of their service life is presented in the figure below. This indicates that about 10 km of pipes are likely to require increased maintenance and renewal effort within the 10 to 20 years (Poor condition assessment).

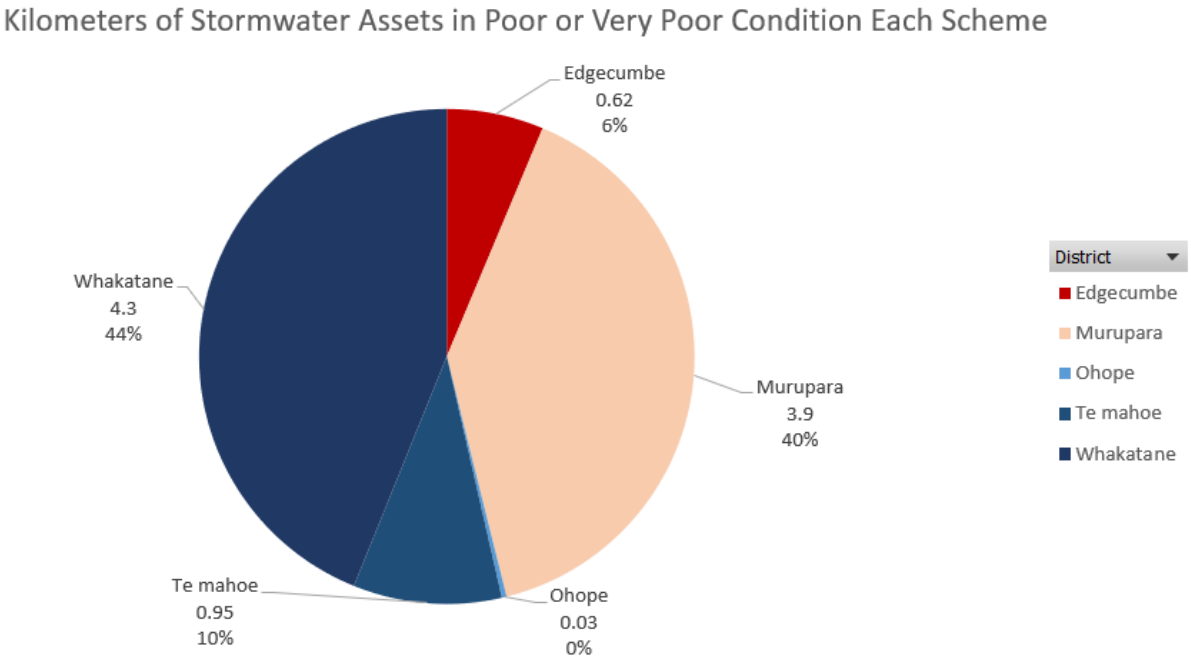


Figure 7D – Locations of condition 4 & 5 (poor-very poor) stormwater pipe assets

7.3.4 Effect of renewal deferrals on levels of service and maintenance

Deferred renewals, or those renewals which are undertaken after the assessed optimum replacement time, increase risk that levels of service will be compromised through unexpected failure. This can lead to:

- Service outages to customers.
- Damage to third party assets, including roads, flooding of private property and health, safety and environmental impacts associated with wastewater overflows.
- Repeated disruption to the community from the event, response and reinstatement works.
- Increased cost through repeated maintenance efforts.
- Discharges or leakage from poorly maintained assets is wasteful and culturally disrespectful to the mauri of water and te mana o te wai principles.

8. Operational planning

8.1 Emergency response and continuity plans

In providing our three waters services, we use an incident escalation system to manage emergency incidents. This system defines roles, responsibilities, and processes for response. It is documented in our incident response and management plan, which aligns with other plans, including:

- Risk management framework.
- Water Safety Plans (including water contamination communication plans).
- Wastewater risk abatement plan.
- Pandemic response plan.
- Drought response plan.
- Flood risk response plan.
- Business continuity plan.
- Crisis management plans.
- Contractors' contingency plans.

8.2 Response planning

At an operational level, we also have contingency plans to manage planned or respond to emergency events as well as issues with specific critical assets. These plans are key components of our water safety framework and include:

- Site-specific incident response and contingency plans.
- Site-specific business continuity plans that set out procedures we follow to maintain service levels and minimise disruption to our customers.
- Water safety plans for each water treatment scheme.
- Source water safety plan.
- Shutdown procedures for bulk water mains.
- Wastewater incident response plan.
- Flooding response plan and early warning systems.
- A drought response plan.

8.3 Effects of asset extensions and upgrades on asset maintenance

The overall maintenance requirement increases in correlation with expansion or extension of the asset base. However, maintenance cost per asset group unit (e.g. per metre of pipe) is lower for new or upgraded assets and the addition of digital resources and technologies could also improve maintenance efficiencies and lower cost and the need for other maintenance resources. New or upgraded assets tend to require mostly preventive or planned maintenance compared to increasing reactive maintenance which could be required with ageing infrastructure.

Asset extensions to the networks will lead to progressively increasing maintenance needs. This has been allowed for in the maintenance expenditure forecasts especially for any growth areas.

8.4 Supply chain deliverability constraints

The supply chain deliverability takes into consideration the availability of professional and construction services and in-house resources such as project managers and supporting technical staff to ensure the success of a project.

The capacity to deliver our capital work programmes has steadily increased over time; this has doubled over the last five years. At times capex under-delivery occurs.

The reasons for under delivering on the LTP programmes are generally due to:

- **Resourcing –** availability of appropriately skilled internal and external resources.
- **Procurement –** supply chain management, lead-in time for materials, tendering and approvals, stakeholder agreement.
- **Project life cycle management –** business case approvals, scheduling, land purchases associated with developer led timelines, incorrect investment appraisals, unforeseen technical issues.
- **Optimism –** project managers are generally optimists (especially at the beginning of projects). Most initial estimates of effort, time or cost are generally optimistic. Realism often occurs later.

In order to increase capacity within the supply chain a transparent forward work programme is required that is supported by transformational change to procurement practices.

8.5 Future approach to decision making

Our level of maturity when it comes to decision making and supporting information is recognised as being moderate. The approach used for this asset management plan endeavours to ensure that projects are assessed using an appropriate level of information.

- Second-generation models using a similar decision tree are being developed and may be utilised when they reach national acceptance. The model has been developed utilising the following principles:
- Simplicity – easy to comprehend, implement and adapt to suit demands of the operating environment.
- Transparency – high visibility on output, rationale, assumptions, and inclusion.
- Delivers on outcomes – focused on delivery of desired outcomes and risk mitigation whilst recognising Te Mana o te Wai hierarchy of needs.
- Equitable for the community – considers different needs of communities and ensure delivery and impact of projects are equitable across the region.
- Deliver the most for least – maximise value to the community within resource constraint limits.
- Efficiencies applied – identify where efficiencies can be found within the programme and apply these to the overall investment profile.
- Climate change - Reduce the adverse environmental impacts and greenhouse gas emissions from existing water and wastewater services by incorporate climate change considerations into future three waters infrastructure projects and through the asset renewal process.

9. Lifecycle Investment

9.1 Overall Three Waters

$216M (inflated) of capital expenditure is proposed for three waters over the next ten years.

The figure below provides an overview of the capital forecast for three waters over the next 10 years.

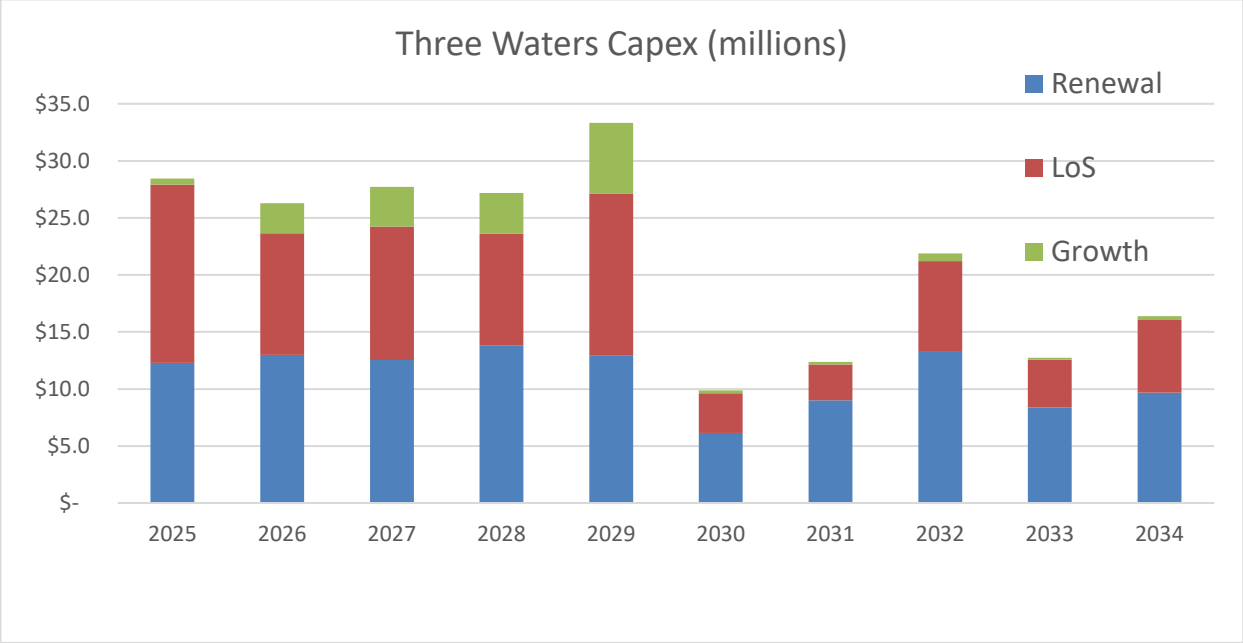


Figure 9A – Overall three waters capex

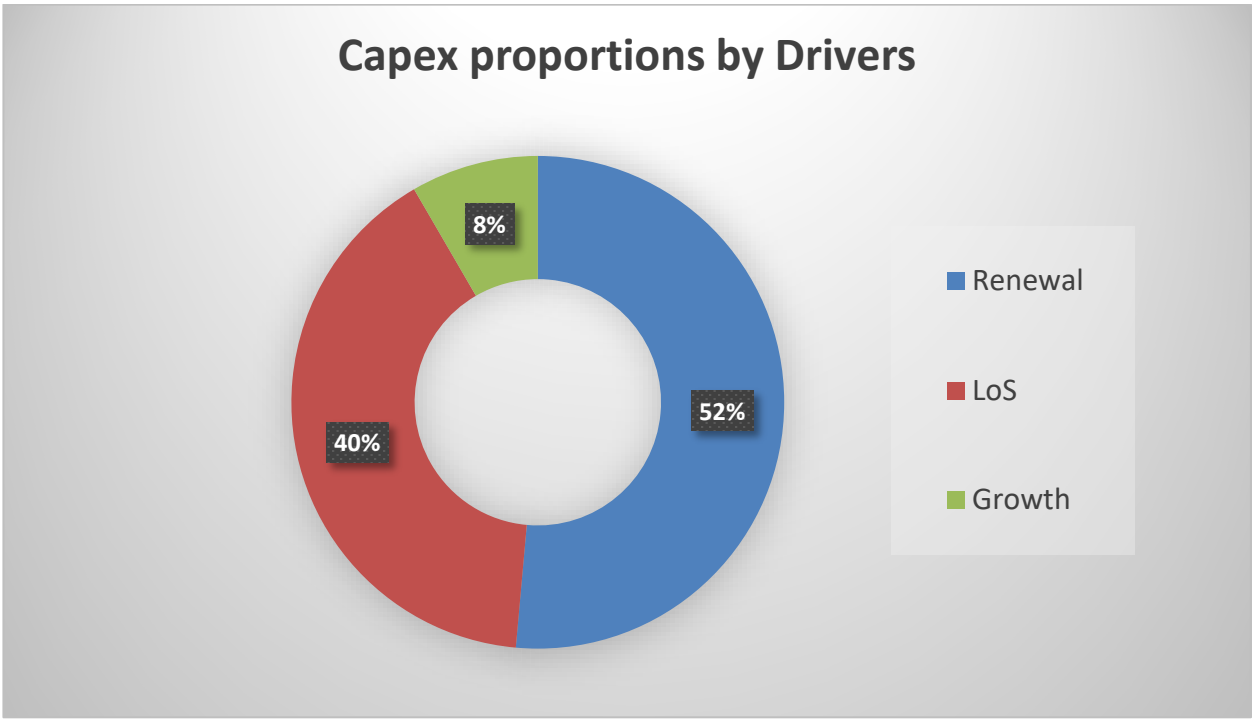


Figure 9B – Overall three waters capex

The proportion of capital investment required for three waters activities is shown below. The drinking water activity will require the largest proportion of investment, followed by waste, then stormwater. Proposed stormwater expenditure is relatively stable over the next 10 years.

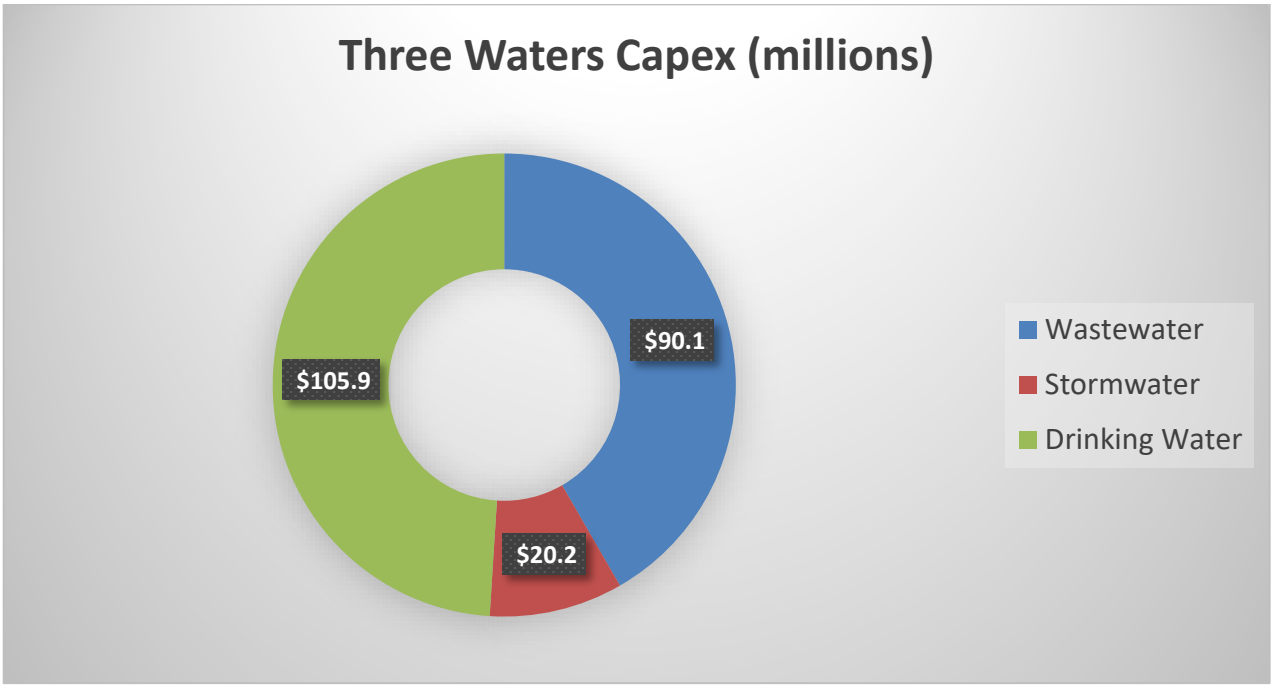


Figure 9C – Three waters capex by activity

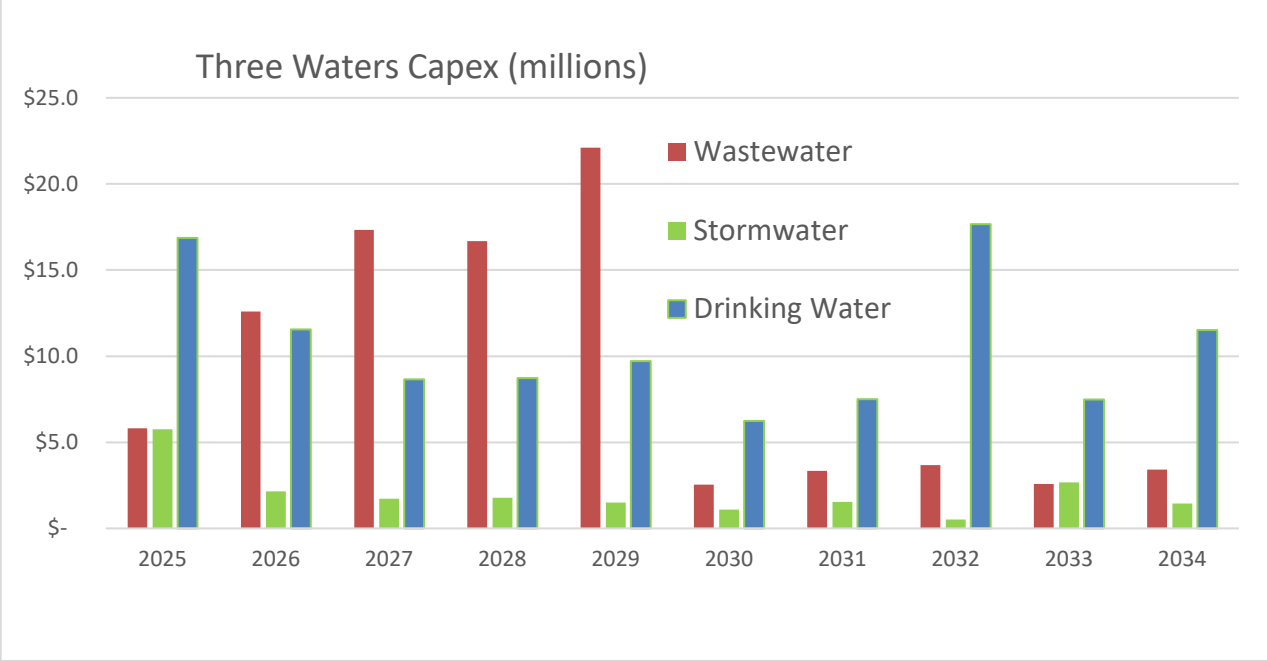


Figure 9D – Overall three waters capex – year by year

9.2 Drinking water capital investment

This subsection identifies the need for capital estimated investment for drinking water activity.

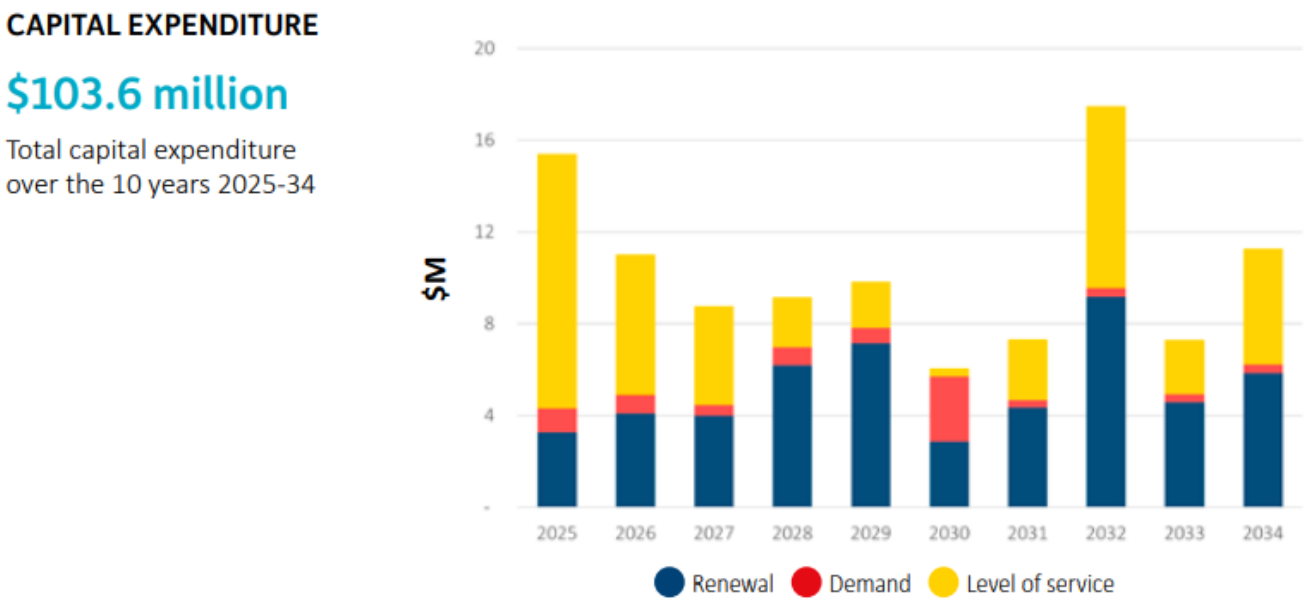


Figure 9E – Drinking water growth capex

9.2.1 Drinking water growth

The figure below illustrates the drinking water capital investment, specifically driven by growth. There is a peak in growth expenditure in Y2 due to several projects being completed. The Y8 spike is due to a project at Johnson Road water source. Compared to either renewals of LoS projects growth expenditure is very low.

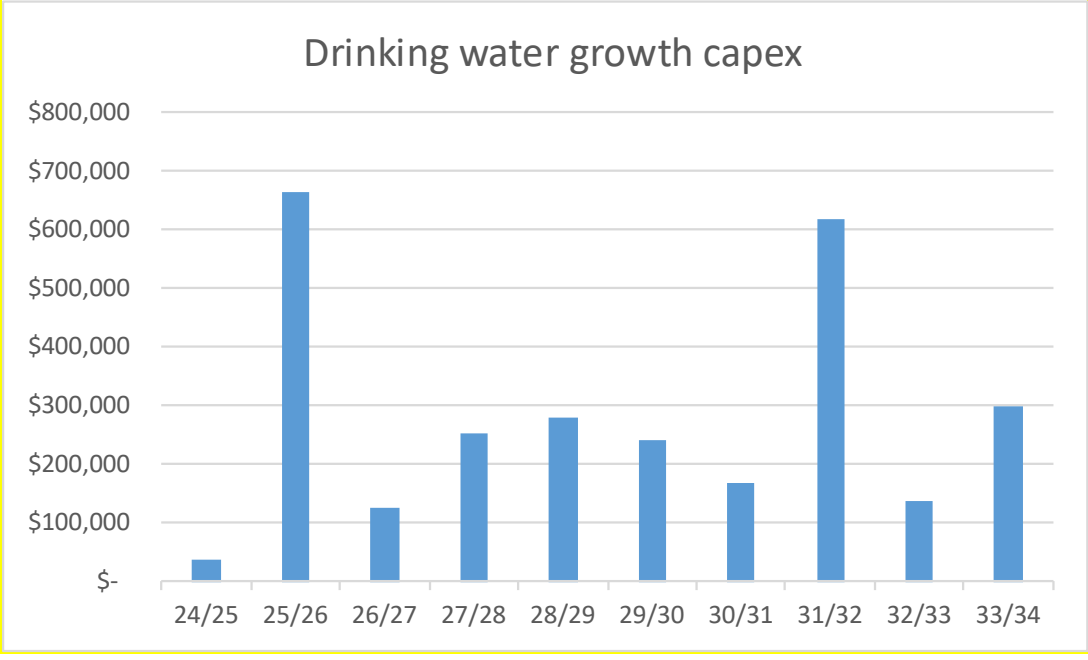


Figure 9E – Drinking water growth capex

9.2.2 Drinking water renewals

The figure below presents the drinking water capital expenditure investment driven by renewal. Expenditure is reasonably steady in the $4M to $8M range.

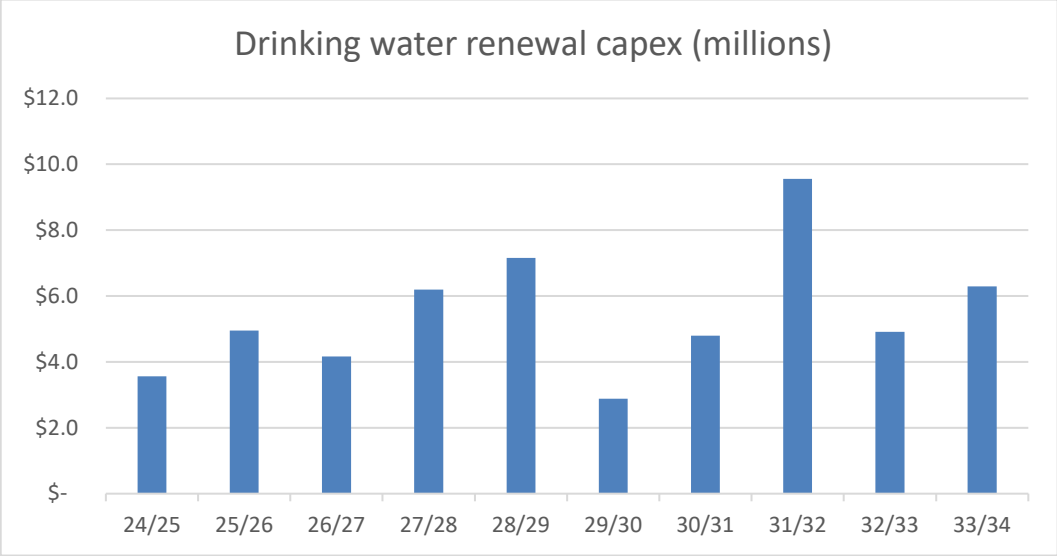


Figure 9F – Drinking water renewal capex

9.2.3 Drinking water levels of service

The drinking water capital expenditure investment driven by level of service is shown below. Y1 is dominated by projects at Blueberry curves, Ohope and boundary backflow prevention. Y8 signals the start of expenditure on the Whakatane drinking water treatment plant.

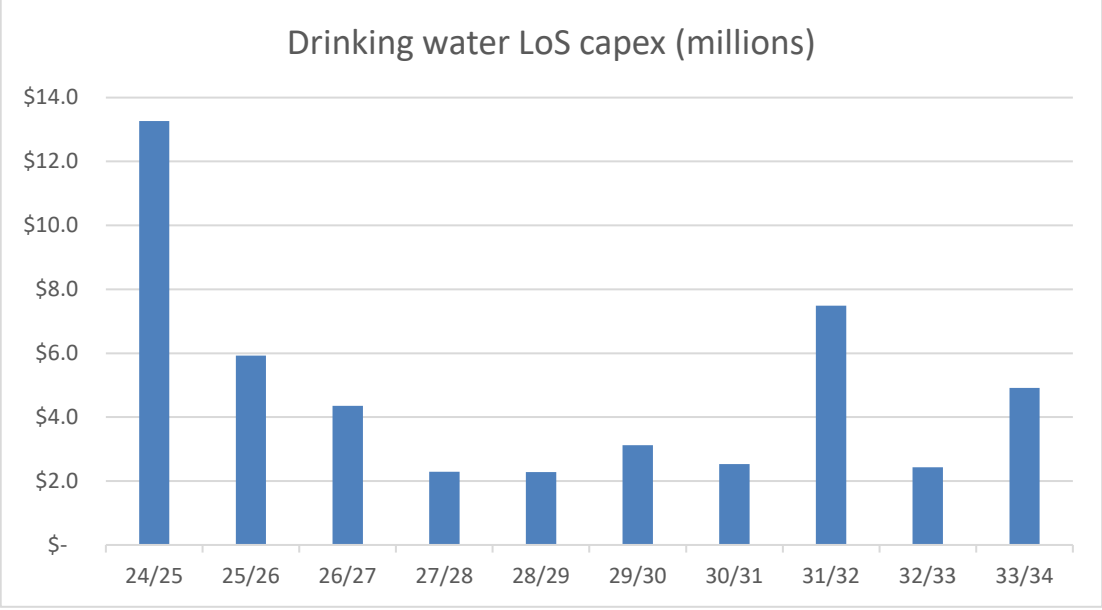


Figure 9G – Drinking water LoS capex

Project	Driver	Cost	Duration	Description
Network Renewals, all Systems	Renewal	$28.4M	10y	All Systems (Except Murupara and Rangitāiki Plains) - water pipes, service laterals, pipe samples, customer meters
Rangitāiki Plains Provisional water reactive 'emergency' renewal works	Renewal	$2.8M	10y	Rangitāiki Plains Provisional water reactive 'emergency' renewal works
Rangitāiki Plains - Johnson Road upgrades - assist growth	Level of Service	$6.4M	10y	Johnson Road treatment upgrades - assist growth
Otumahi Reservoir	Level of Service	$7.2M	4y	Otumahi Reservoir
Water Treatment Plant Upgrade/Renewals	Renewal	$12M	10y	Water Treatment Plant Upgrade/ Renewals (includes Murupara and Rūātoki)
Backflow prevention installation	Level of Service	$3.8M	10y	Equalised backflow prevention installation

Table 9H – Key Drinking Water Projects

9.3 Wastewater capital investment

This subsection focuses on the wastewater capital expenditure requirements.

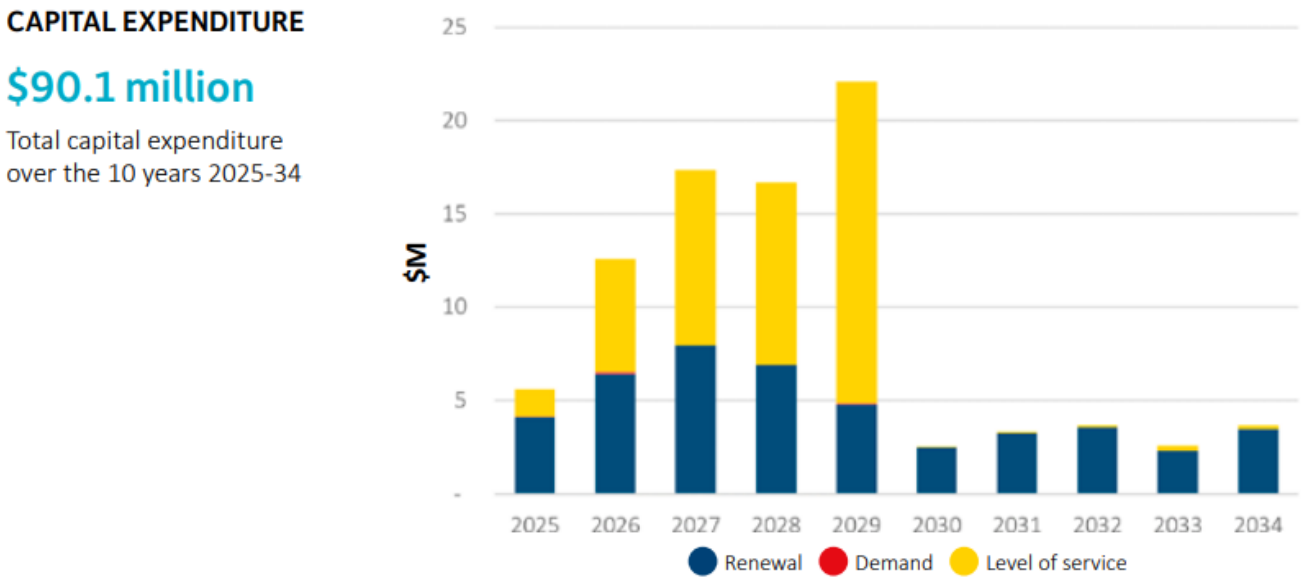


Figure 9I – Wastewater growth capex

9.3.1 Wastewater growth

An overview of the wastewater capital investment specifically driven by growth, for the next 10 years, is illustrated below. The growth expenditure is totally dominated by a single project - the Matata wastewater scheme. This scheme shows how extremely expensive modern best-practice land disposal systems are.

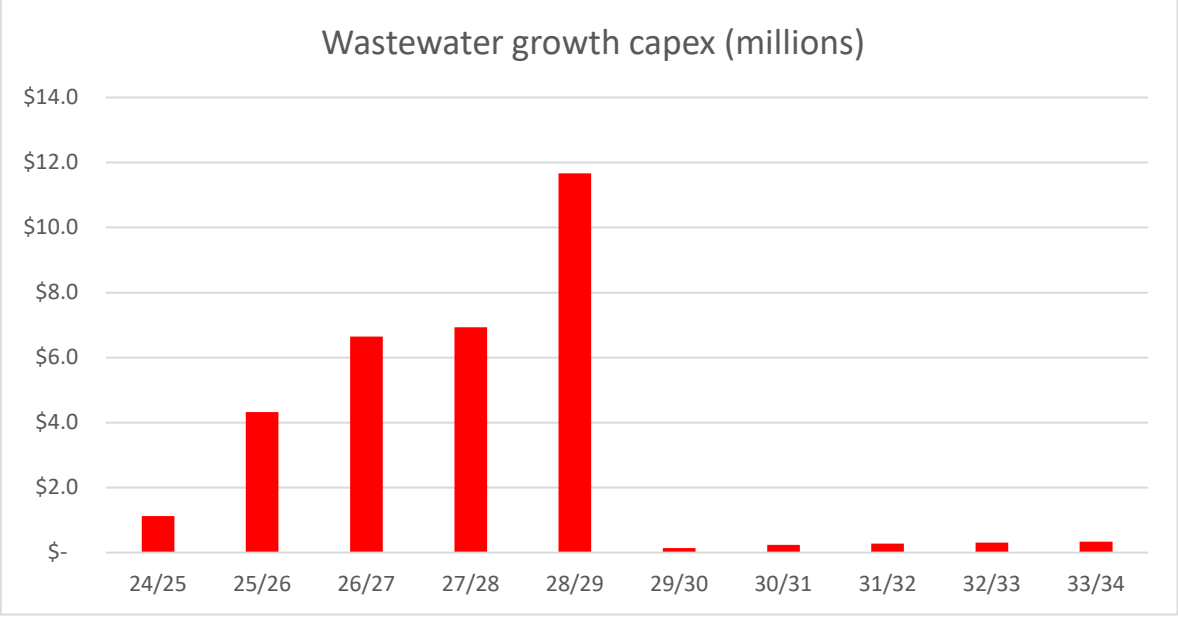


Figure 9I – Wastewater growth capex

9.3.2 Wastewater renewals

The figure below presents the wastewater renewals investment for the next ten years. It is notable that the wastewater systems have the greatest average age in the district of 49 years. Annual depreciation is funded at a level of approximately $2.6M per annum. This means that it is difficult to fund any renewals greater than $2.6M per annum. Figure 9J below shows wastewater renewal spend being greater than $2.6m annually for most years – some much greater. This adds to our funding pressures in trying to maintain mature infrastructure.

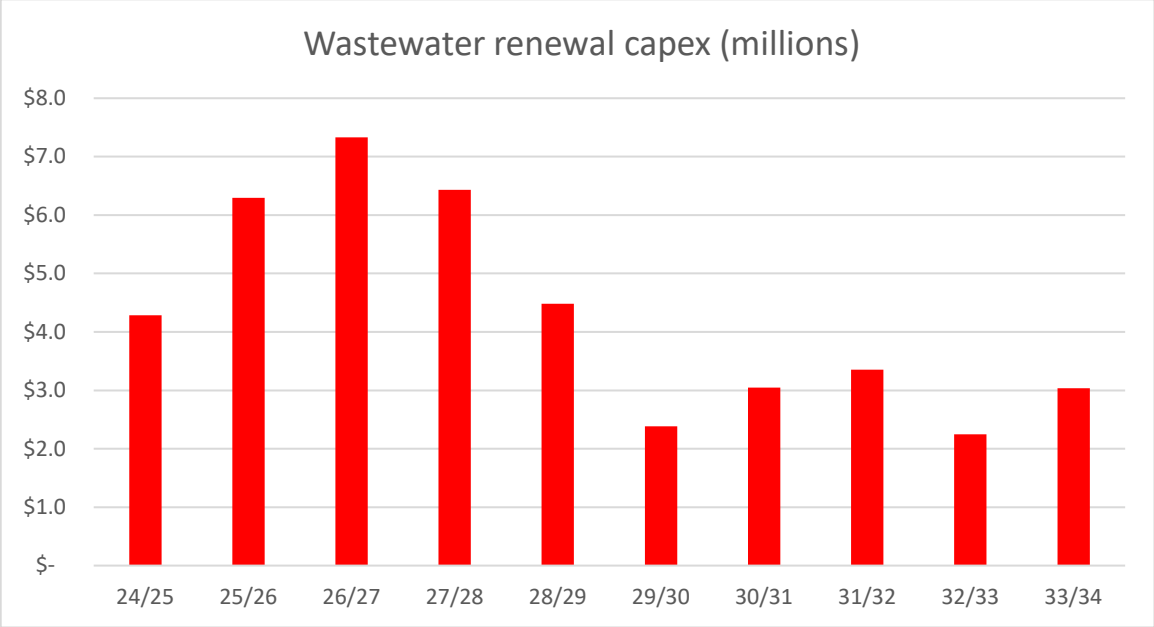


Figure 9J – Wastewater renewal capex

9.3.3 Wastewater levels of service

The wastewater capital investment driven by levels of service for the next 10 years is shown in the figure below.

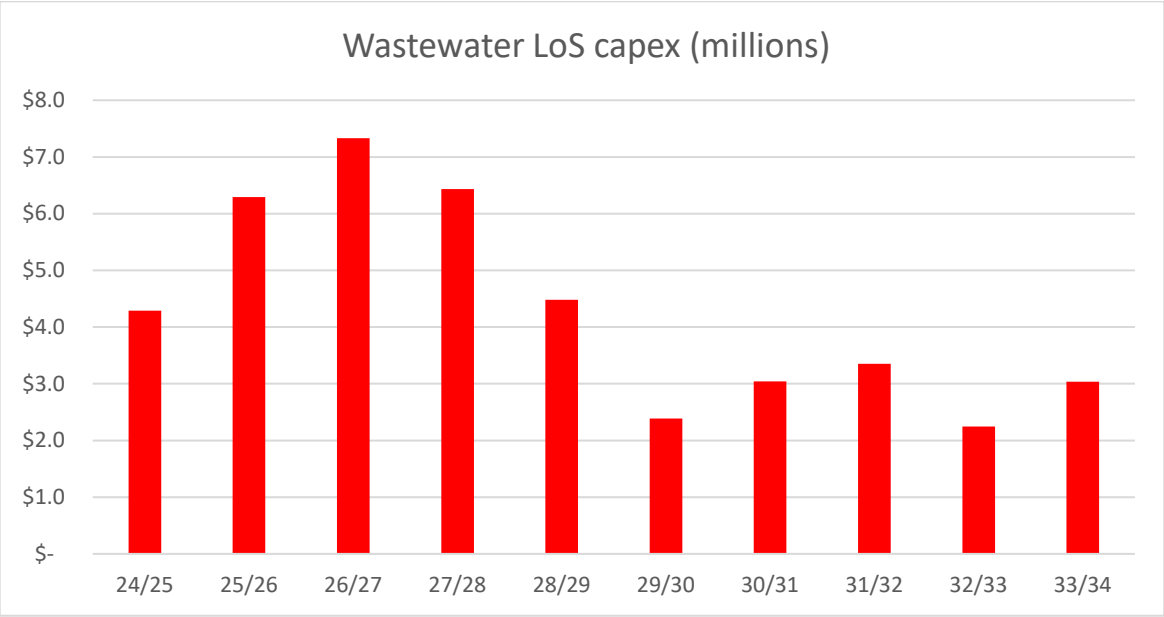


Figure 9K – Wastewater LoS capex

Project	Driver	Cost	Duration	Description
Matata wastewater scheme	Level of service & growth	$42.4M	5y	New Wastewater scheme for un-serviced town
Wastewater network renewals	Renewal	$16.1M	10y	Wastewater renewal
Emergency unforeseen reactive Wastewater renewal	Renewal	$3M	10y	Emergency unforeseen reactive Wastewater renewal
Edgecumbe Relining	Renewal	$1.3M	5y	Edgecumbe wastewater relining
Rising & Outfall Mains - Whakatāne District wastewater Rising Main Renewal	Renewal	$9.0M	10y	Rising & Outfall Mains - Whakatāne District wastewater Rising Main Renewal
Murupara Wastewater Treatment Plant upgrade advance works	LoS & Renewal	$2M	10y	Murupara Wastewater Treatment Plant upgrade advance works
Whakatāne District Wide Pump Station renewal and upgrades	LoS & Renewal	$7.2M	10y	Whakatāne District Wide (48) Pump Station renewal and upgrades (includes Buddle Street PS)

Table 9L – Key Wastewater Projects

9.4 Stormwater capital investment

This subsection focuses on the stormwater capital expenditure. The figure below illustrates the projected stormwater capital investment over the next ten years.

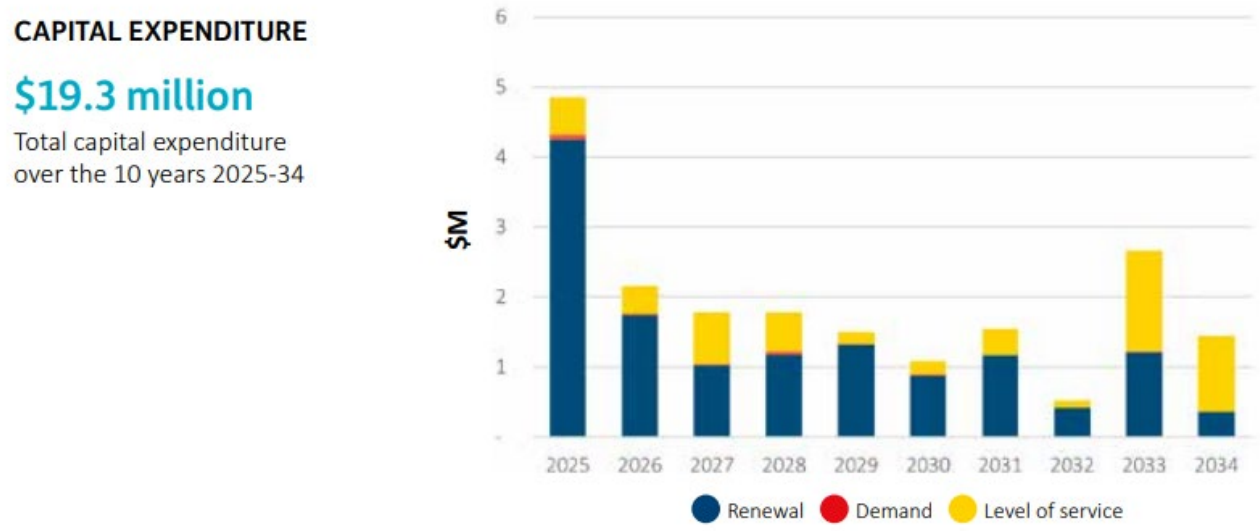


Figure 9M – Stormwater capital expenditure

9.4.1 Stormwater growth

The figure below provides an overview of the stormwater capital investment, specifically driven by growth, for the next ten years. The figure is extremely low, based on a single project. We attempt to sheet home growth costs to individual development projects where there is a clear linkage and this is a reasonable approach. The development of the spatial plan and accompanying District Planning implementation tools will make it easier to make ”growth” pay for growth.

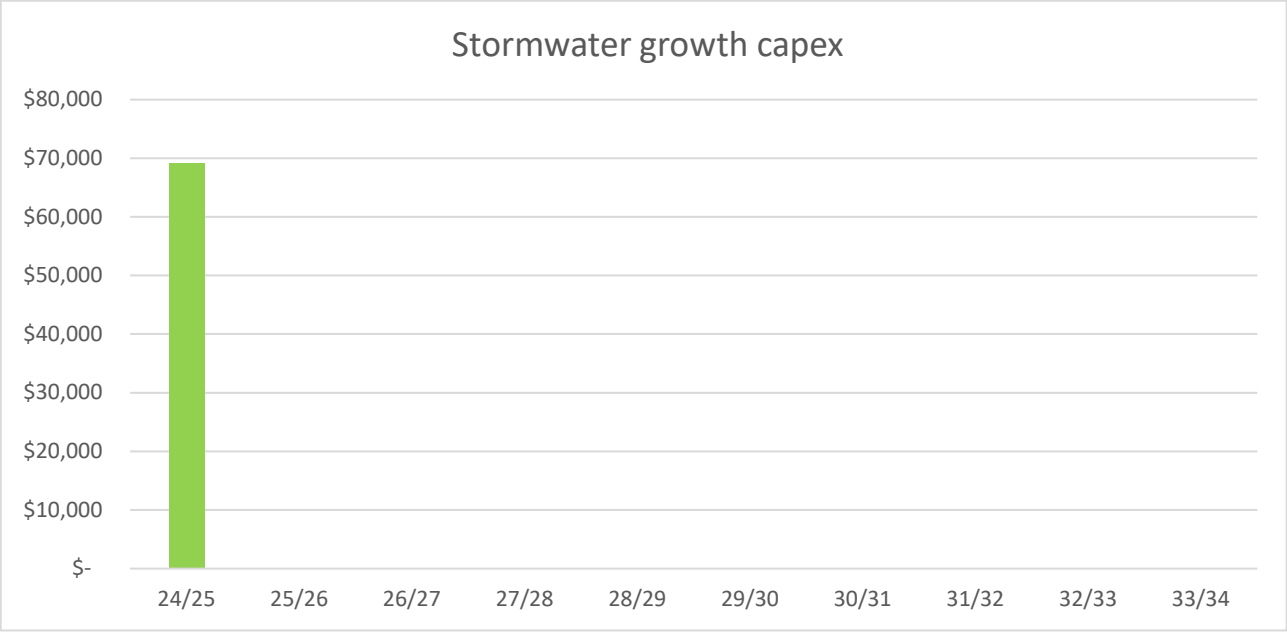


Figure 9M – Stormwater growth capex

9.4.2 Stormwater renewals

The stormwater capital expenditure for activity driven by renewals over the next ten years is detailed in the

figure below. Year 1 is dominated by several large multi-year renewal projects nearing completion. After this stormwater renewals decrease to a low level. This is termed “sweating the asset”.

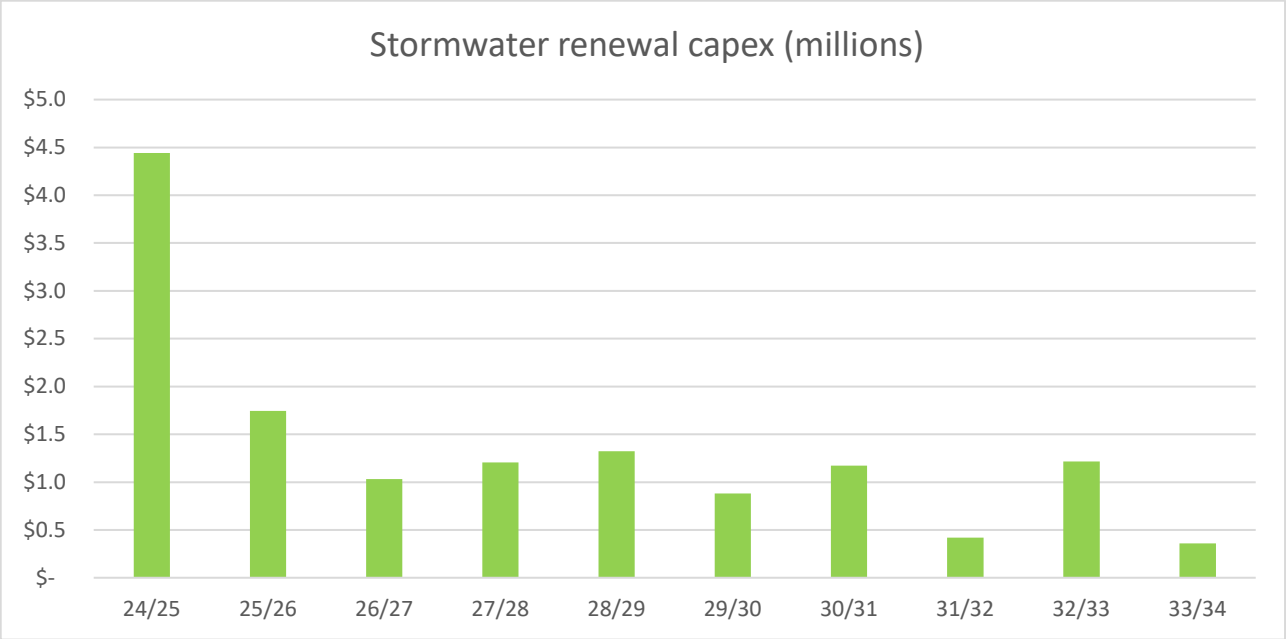


Figure 9N – Stormwater renewal capex

9.4.3 Stormwater levels of service

The figure below illustrates the estimated stormwater capital expenditure driven by levels of service for the next ten years. The funding in Y1 is mainly for the completion of the multi-year Apanui linear park project. The funding in Y9 & Y10 is for the Edgecumbe stormwater study.

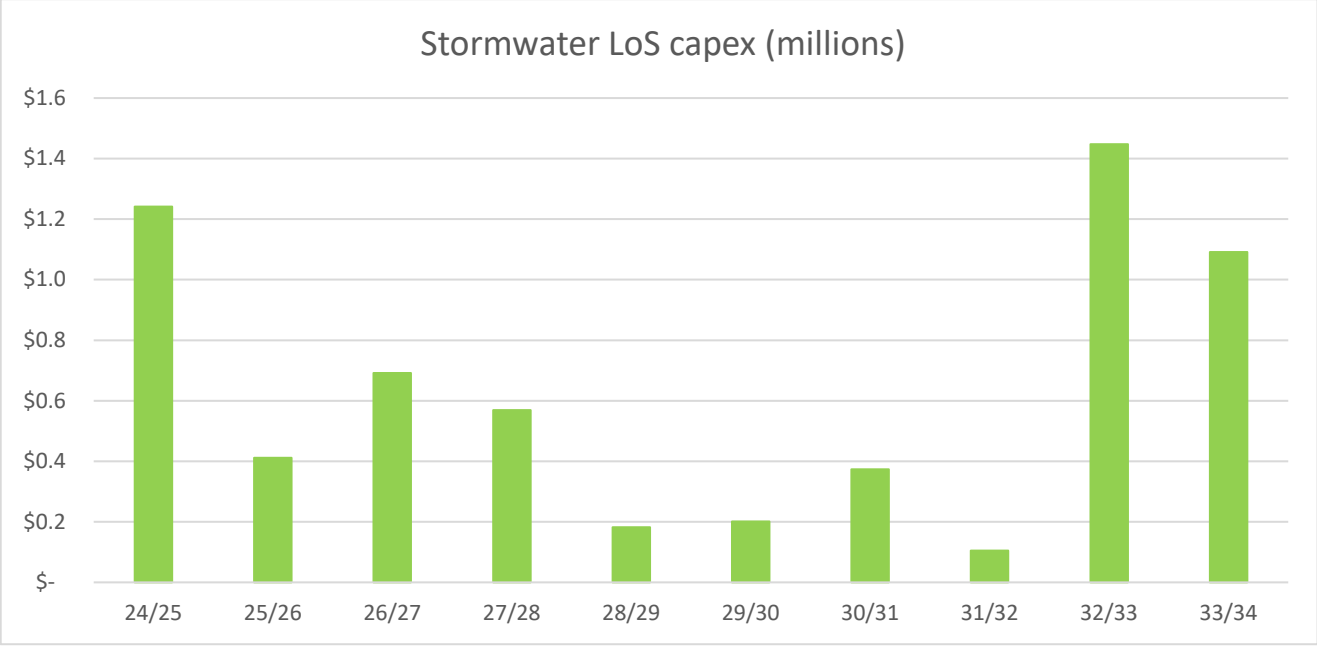


Figure 9O – Stormwater LoS capex

Project	Driver	Cost	Duration	Description
WHK SW Pump Replacements	Renewal	$3.8M	9y	Whakatane Pump Replacements
Reactive Emergency SW Renewals	Renewal	$2.9M	10y	Reactive Emergency SW Renewals
Whk SW WesternCatch UpgradeRen	Renewal & LoS	$2.3M	2y	Whakatane SW Western Catchment Upgrade
Edge SW - Stormwater Study	LoS	$2.3M	10y	Edgecumbe stormwater study
Whakatāne Stormwater Network Upgrades	Renewal & LoS	$1.6M	7y	Whakatāne Stormwater Network Upgrades
OHOPE SW Upgrades - Capital expenditure	LoS & Renewal	$960K	7y	OHOPE SW Upgrades

Table 9P – Key Stormwater Projects

9.5 Operational investment

The figures below present the operational investments for three waters activities over the next ten years. The forecasted operational expenditure amounts to $327 million, with the majority allocated to drinking water (48%), wastewater (33%) and stormwater (19%).

Drinking Water	$158.4
Wastewater	$107.5
Stormwater	$ 60.6
	$326.6 Million

Table 9Q - Three waters operational investment for the next ten years

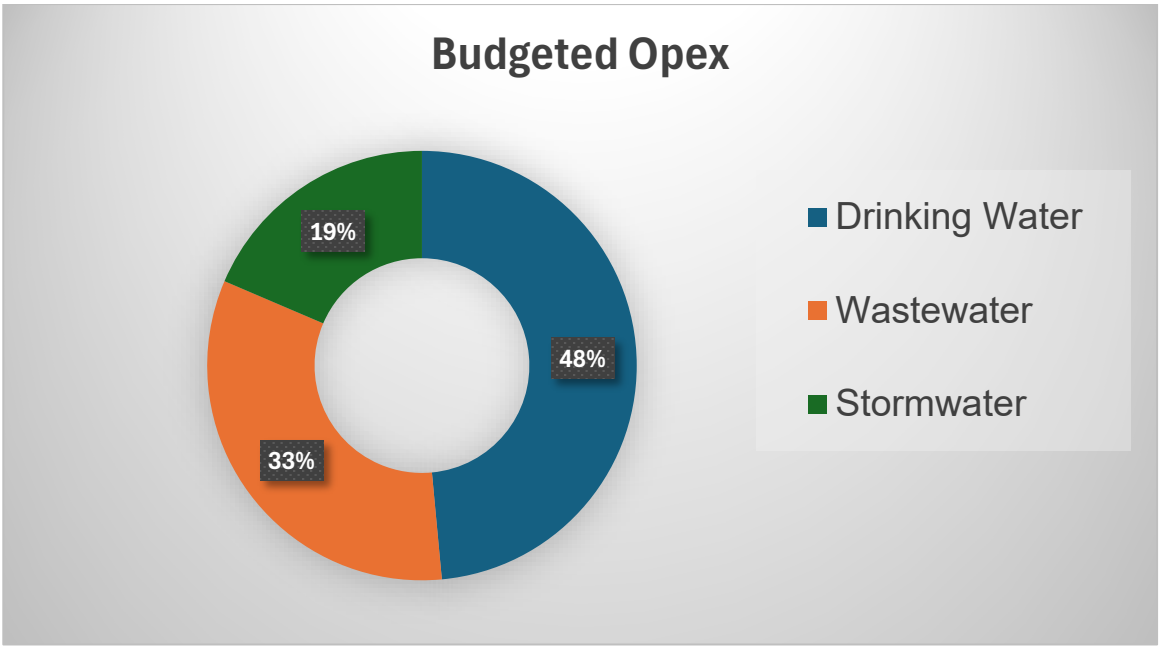


Figure 9R - Three waters operational investment for the next ten years

The narrative below discusses the four major components of operational expenditure.

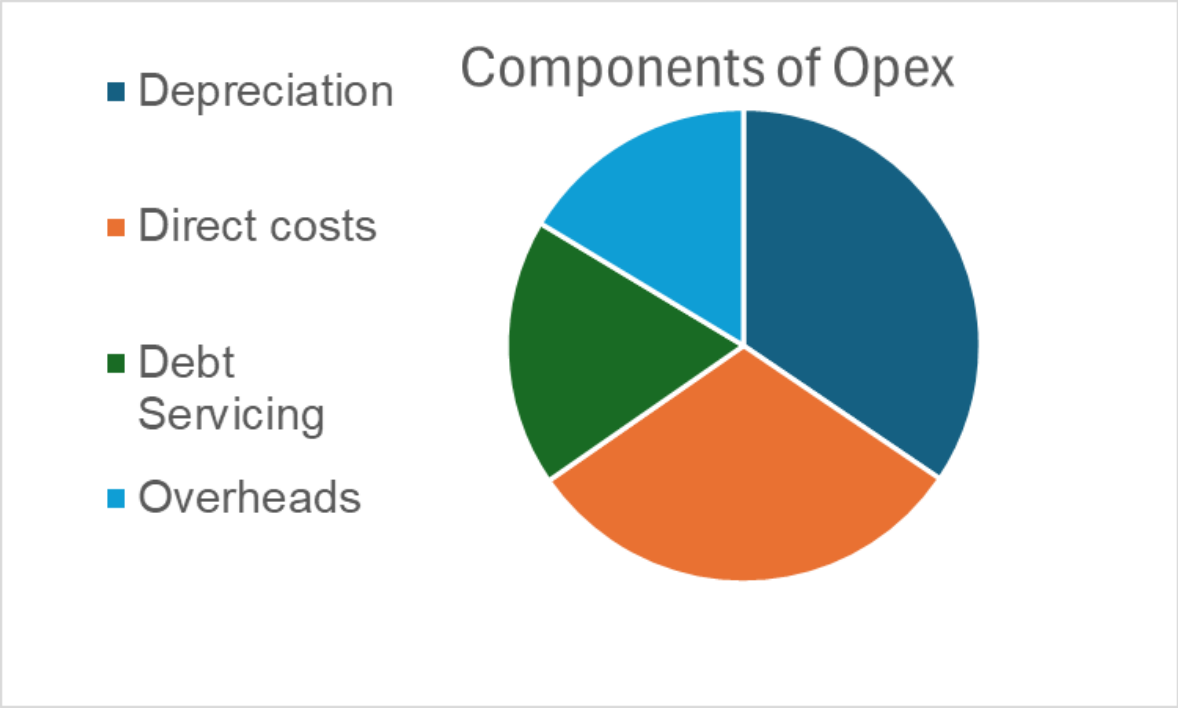


Figure 9S - Components of Operational costs -Three Waters

9.5.1 Depreciation

Overall, and for each of the three individual waters, depreciation is the largest cost centre. It represents 34% of three waters expenditure overall. It varies from a low of 13% for the Stormwater activity, through 22% for Wastewater to a high of 35% for Drinking water. This is understandable as three waters is a very asset intensive activity, especially so for the active infrastructure associated with drinking water supply and wastewater management.

Depreciation can be thought of as the ongoing consumption of the asset. Funding of depreciation provides an income stream that is used in order have funds available to replace the asset at the end of its lifetime.

9.5.2 Direct costs

Direct costs include matters such as operations & maintenance, staff costs, chemicals, electricity & gas, SCADA controls and other costs.

Direct costs represent the second largest cost centre. Direct costs vary from a low of 12% for the Stormwater activity, through 21% for Wastewater to a high of 31% for Drinking water. It represents 31% of three waters expenditure overall. This is understandable as three waters is an active activity, especially so for the active infrastructure (e.g. pumping and storage) associated with drinking water supply and wastewater management.

9.5.3 Debt Servicing

Debt servicing is interest we pay for current (and future) debt involved in asset creation.

Overall, and for each of the three individual waters, debt servicing is the third largest cost centre. It represents 18% of three waters expenditure overall. It varies from a low of 7% for the Stormwater activity, through 13% for Wastewater to a high of 18% for Drinking water. This shows the proposed debt position.

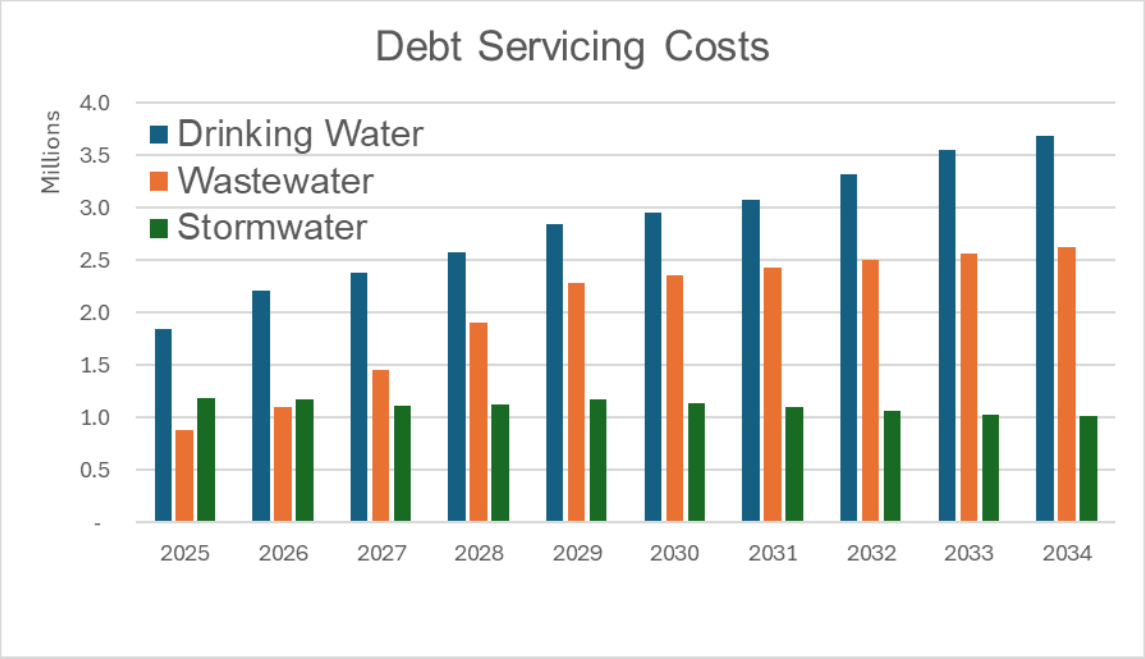


Figure 9T - Debt servicing costs

Debt servicing costs show a rapidly rising debt position for Wastewater then plateauing from Y5 onwards. Drinking water debt servicing starts at a high level (effectively twice the other two) and climbs steadily over the 10 year period. Stormwater debt servicing actually decreases over the 10 year period.

9.5.4 Overheads

Completing the picture of cost centres is allocated costs or Overheads. These are the costs that three waters pays (to other parts of the organisation) for services such as Finance, IT, HR, Comms, Strategic management etc. Typically overheads are calculated in accordance with demands placed upon the supporting services by the actual activity.

9.5.5 Operational Investment by activity

The Tables below describe the operational costs for each of the waters activities year by year at a cost centre level. All numbers are thousands ($000's)

Drinking Water

FY	Depreciation	Interest	Direct Costs	Overheads	Total
2025	4,698	1,847	4,297	2,022	**12,866**
2026	4,947	2,211	4,411	2,142	**13,712**
2027	5,200	2,381	4,549	2,223	**14,353**
2028	5,563	2,571	4,681	2,253	**15,069**
2029	5,762	2,839	4,839	2,298	**15,739**
2030	5,925	2,954	5,054	2,345	**16,277**
2031	6,072	3,076	5,192	2,385	**16,725**
2032	6,166	3,321	5,355	2,410	**17,253**
2033	6,469	3,547	5,547	2,455	**18,018**
2034	6,565	3,685	5,696	2,489	**18,436**
	57,367	**28,435**	**49,622**	**23,023**	**158,447**

Table 9U – Drinking water operational investment at cost centre level

Wastewater

FY	Depreciation	Interest	Direct Costs	Overheads	Total
2025	2,842	878	2,503	1,706	**7,928**
2026	2,857	1,104	2,605	1,826	**8,393**
2027	2,912	1,455	2,738	1,907	**9,013**
2028	2,921	1,904	3,289	1,930	**10,043**
2029	2,937	2,289	3,370	1,961	**10,556**
2030	4,056	2,362	3,503	2,004	**11,926**
2031	4,058	2,431	3,604	2,039	**12,132**
2032	4,062	2,508	3,624	2,065	**12,258**
2033	4,065	2,568	3,759	2,113	**12,505**
2034	4,084	2,623	3,863	2,142	**12,713**
	34,793	**20,122**	**32,858**	**19,692**	**107,466**

Table 9V – Wastewater operational investment at cost centre level

Stormwater

FY	Depreciation	Interest	Direct Costs	Overheads	Total
2025	1,904	1,190	1,484	943	**5,521**
2026	1,991	1,171	1,655	1,005	**5,823**
2027	2,006	1,112	1,734	1,042	**5,895**
2028	2,024	1,119	1,788	1,050	**5,981**
2029	2,042	1,168	1,732	1,071	**6,013**
2030	2,057	1,136	2,112	1,094	**6,399**
2031	2,081	1,101	1,861	1,112	**6,156**
2032	2,100	1,060	1,922	1,124	**6,206**
2033	2,105	1,027	1,993	1,150	**6,275**
2034	2,138	1,014	2,049	1,166	**6,367**
	20,450	**11,100**	**18,329**	**10,758**	**60,637**

Table 9W – Stormwater operational investment at cost centre level

10 Continuous Improvement

10.1 Overview of the improvement programme

Sections 3.8 and 4.8 identify opportunities for improvement. It won't be possible to advance all of these, all at once. A number of focus areas have been identified for early attention during the first three years of the LTP.

10.2 Current asset management maturity

We assess our current level of maturity to me moderate. A future action is to apply a formal maturity model and broaden this assessment in order to validate the level of maturity. This will also reveal focus areas and discrete actions to be adopted.

10.3 Review of progress against previous plan

Previously we prepared individual asset management plans for water, wastewater and stormwater. This led to a certain amount of duplication and diluted the overall messaging. The current approach of a single asset management plan aligns with the direction undertaken nationally throughout New Zealand.

Major advancement within the asset management industry with the release of the new edition of the IIMM, which is the global benchmark for infrastructure asset management and a valuable resource to Council.

Continuation with review of asset data and address gaps within the data source with particular attention to critical assets.

Opportunistic condition assessment of assets by field staff has assisted in the programming of renewal works.

10.4 Improvement plan 2024

Further progress with asset management system to establish system processes and controls around asset data management including:

- Development of proactive maintenance schedules for critical assets
- Improvement of capturing asset data for newly constructed and vested assets in a timely manner
- Develop robust process for updating of GIS data

11 Conclusion and key takeaways

- Like many Councils across the country, we are facing significant funding and financing pressures to deliver the requirement investment. In order, these come from wastewater treatment plant upgrades, water and wastewater pipe renewals, climate change and resilience projects to improve the ability to provide continuity of service in case of asset failure or severe weather events.
- A needs based capital investment programme indicates that almost $440M of investment is needed over the next 10 years. Due to affordability and delivery constraints, this has been reduced to $170M over the same period. The most significant impact of this is the deferral of the physical works costs to upgrade our four wastewater treatment plants that have consents expiring in 2026.
- We have reasonably good knowledge of the condition of our above and below ground wastewater assets and good knowledge of water assets, albeit it through a more discrete sampling programme. For stormwater, we have taken a more criticality based approach and have good information on above ground pumpsations but a very limited view of below ground pipe assets.
- The introduction of a dedicated drinking water regulator has provided a stronger and more robust oversight of drinking water quality standards and expectations. Our most notable drinking water safety risk is in Murupara where the supply lacks a permanent treatment facility. Whilst funding is in place to address this, there remains strong community opposition for treatment (particularly chlorination), therefore, we are taking a very considered and community focused approach to implementing the necessary safeguards.
- Across the country, the majority of resource consents expire in 2026. This places significant strain within the industry in developing and resourcing this volume of consents and on regional councils, as the regulator, to process and approve consents. We have over 20 three waters resource consents that expire in 2026, so our challenge will be in undertaking the preparation and consultation for numerous new resource consent applications prior to lodgement for approval.

Glossary

Asset condition: A measure of the state of an asset in providing its intended function.

Asset criticality: A measure of the importance of an asset in relation to the overall performance of a system.

Asset data confidence: A measure of the quality, accuracy, and reliability of the data used in asset management processes, such as decision making, planning, and performance monitoring. High asset data confidence enables better-informed decisions, while poor data confidence can lead to suboptimal outcomes.

Asset lifecycle: The stages an asset goes through from creation or acquisition to disposal.

Asset management planning: The process of making informed decisions about the acquisition, operation, maintenance, renewal, and disposal of assets to provide the required level of service to customers at the lowest long-term cost.

Asset performance: The asset's ability to meet service objectives related to capacity, reliability, quality, efficiency, and/or utilisation.

Asset resilience planning: A proactive approach to asset management that focuses on enhancing the ability of assets and systems to withstand, adapt to, and recover from disruptions, failures, or extreme events, ensuring the continuity of essential services and minimising impacts on communities.

Asset valuation: A process used to determine the estimated value of an asset for financial planning, asset management planning, and financial reporting.

Closed-Circuit Television (CCTV) inspection: A method used to assess the condition of pipelines by inserting a camera into the pipe and recording video footage.

Common data confidence and accuracy assessment: Assesses all asset groups and types in terms of quantity, age, condition and performance. Understanding data confidence and accuracy benefits valuation, criticality and auditing activities.

Condition grading: A method of rating the condition of an asset to inform future intervention decisions.

Critical assets: Are defined as those which have a high consequence of failure causing significant loss or reduction in service provision.

Data maturity: A measure of an organisation's ability to effectively collect, manage, and utilise data in its decision-making processes. Higher data maturity levels indicate a more advanced and efficient use of data, leading to better- informed decisions and improved organisational performance.

Dry weather overflows: Overflows in the wastewater system during dry weather, often caused by blockages or plant failures.

Failure mode: is the way in which assets can fail (such as cracks in pipes).

Inflow and infiltration: The entry of stormwater and groundwater into the wastewater system, often during rainfall events.

Infrastructure Leakage Index (ILI): A measure of water loss in a water supply network, used to identify areas

where investment is needed to reduce water loss and improve network effectiveness.

Infrastructure strategies: Long-term planning documents that outline the strategic direction, priorities, and investment requirements for the development, maintenance, and renewal of infrastructure assets, such as water, wastewater, transportation, and energy systems. These strategies inform and support the development of Long Term Plans (LTPs) and other asset management initiatives.

International Infrastructure Asset Management Manual (IIMM): A published guide to best practices in infrastructure asset management.

Level of service (LOS): The agreed outcomes that an organisation delivers for its customers based on performance measures and targets.

Mana whenua kaitiaki: Māori guardians responsible for protecting and managing the environment within their region.

Mauri: A Māori concept that refers to the vitality or essence that supports life.

Network assets: Infrastructure that enables the flow of water, wastewater, and stormwater, including pipes, laterals, and structures.

Natural water bodies: Fresh water accumulations that occur naturally in the environment and include lakes, groundwater aquifers, rivers and streams, wetlands, and ponds.

Open channels: Linear waterways, either natural or modified, that form part of a network.

Stations and sites: Locations serving as a water source, storage, and/or pumping functions.

Stormwater network services: The infrastructure and services related to the management and treatment of stormwater.

Tāngata whenua: The indigenous Māori people of a specific region in New Zealand.

Taumata Arowai: New Zealand's three waters regulator

Te Mana o te Wai: A concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

Tikanga, kawa, and mātauranga-a-iwi: Māori customs, traditions, and protocols that influence the way they interact with the environment.

Treatment plants: Facilities that process and improve the quality of water or treat wastewater.

UAC: Uniform Annual Charge: A method of collecting revenue using a fixed charge per (say) household. As opposed to volumetric charging (say) for water by metered amount used

Wai: (noun) Māori – Water, liquid, stream, creek, river.

Wastewater network services: The infrastructure and services related to the collection and treatment of wastewater.

Wastewater Risk Abatement Plan: A strategic document outlining the potential risks associated with

wastewater treatment plants (WWTP) and their associated infrastructure (e.g., pumping stations), and identifying strategies and actions to mitigate or manage these risks to protect public health and the environment.

Water New Zealand National Performance Review (NPR): An annual review of water and wastewater services in New Zealand.

Water Safety Plans (WSP): A comprehensive risk assessment and risk management approach that encompasses all steps in the water supply chain, from catchment to consumer, to ensure the safety and quality of drinking water. (Note that a major consulting firm in New Zealand also shares this acronym.)

Water supply network services: The infrastructure and services related to the provision of water supply.

Wet to dry weather flow ratio: A measure of inflow and infiltration in the wastewater system, calculated as the peak wet weather flow divided by the average dry weather flow.

Wetlands: Ecosystems that are saturated with water, either permanently or seasonally, and support a wide range of flora and fauna.