

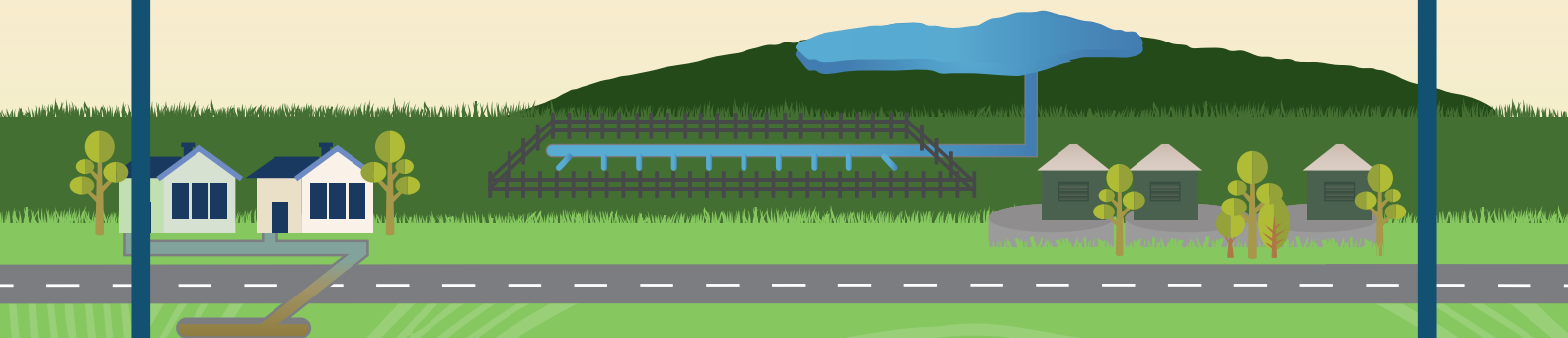


WAIROA DISTRICT COUNCIL

THREE WATERS

ACTIVITY MANAGEMENT PLAN

2021-2031



WAIROA
DISTRICT COUNCIL

ACRONYMS	3	5.3	Key Risks	56
		5.4	Resilience	57
EXECUTIVE SUMMARY	4	6.	OUR ASSETS	58
Strategic Context	4	6.1	Introduction	58
National & Regional Drivers	4	6.2	Water Supply Assets	60
Levels of Service	8	6.3	Wastewater Assets	65
Managing Risk & Resilience	8	6.4	Stormwater Assets	69
What We Are Investing In	8	7.	LIFECYCLE MANAGEMENT	72
Plan Improvement	11	7.1	Introduction	72
Limitations & Assumptions	12	7.2	Operations & Maintenance Plan	72
		7.3	Renewals Plan	75
1. INTRODUCTION	14	7.4	Capital/Upgrade Plan	79
1.1 Purpose of this Plan	14	7.5	Disposal Plan	80
1.2 Scope of this Plan	14	8.	FINANCIAL SUMMARY	81
1.3 Relationship with other Council Plans	15	8.1	Introduction	81
1.4 Limitations & Assumptions	16	8.2	Financial Projections	81
		8.3	Implications of Meeting Budget Limitations	87
2. THE STRATEGIC CONTEXT	18	8.4	Funding Strategies & Policies	87
2.1 National Context	18	8.5	Asset Valuation	90
2.2 Regional Context	19	9.	PLAN IMPROVEMENT & MONITORING	94
2.3 Wairoa Local Context	21	9.1	Overview	94
2.4 Strategic Assessment	27	9.2	Asset Management Practices	95
		9.3	Improvement Plan	99
3. DEFINING LEVELS OF SERVICE	32	APPENDIX A: WATER ASSETS		102
3.1 Overview	32	APPENDIX B: THREE WATERS RISK REGISTER		106
3.2 Legislative Requirements	32	APPENDIX C: THREE WATERS FORECAST EXPENDITURE		117
3.3 Understanding Our Customers' Needs	35	Operations & Maintenance 10 Year Forecast	116	
3.4 Levels of Service Overview	38	Renewals 10 Year Forecast	126	
3.5 Waster Supply Levels of Service	40	Capital Improvements 10 Year Forecast	128	
3.6 Wastewater Levels of Service	44			
3.7 Stormwater Levels of Service	47			
4. DRIVERS FOR CHANGE	48			
4.1 Population & Demographic Change	48			
4.2 Legislative & Policy Change	49			
4.3 Climate Change	50			
4.4 Land Use Change	51			
4.5 Economic Development	51			
4.6 Demand Management	52			
5. RISK AND RESILIENCE	54			
5.1 Risk Management Policy	54			
5.2 Critical Assets	54			

Acronym	Full Description
AMP	Activity Management Plan
CDEM	Civil Defense Emergency Management Act 2002
CSR	Customer Service Request
DWSNZ	Drinking Water Standards New Zealand
IIMM	International Infrastructure Management Manual
IPWEA	Institute of Professional Works Engineering Australasia
LGA	Local Government Act 2002
LOS	Level of Service
LTP	Long Term Plan
NAMS	New Zealand Asset Management Support
RMA	Resource Management Act
SCADA	Supervisory Control and Data Acquisition
WDC / Council	Wairoa District Council
WSP	Water Safety Plan
WTP	Water Treatment Plant

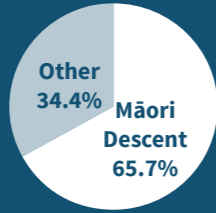
EXECUTIVE SUMMARY

WAIROA AT A GLANCE

COMMUNITY



8,670 population



ENVIRONMENT



4,119km² Land area



130km of coastline

ECONOMY



\$284 GDP (M)



\$32,778 GDP per capita

WATER SUPPLY ASSETS

\$47

Asset Replacement Cost (M)

3

Water Supply Systems

118

Pipe Length (km)

WASTE WATER ASSETS

\$33

Asset Replacement Cost (M)

4

Waste Water Systems

56

Pipe Length (km)

STORM WATER ASSETS

\$24

Asset Replacement Cost (M)

42

Asset Length (km)

This Three Waters Activity Management Plan (AMP) acts as a route map for the future, by providing the logic, reasoning and context behind how we propose to maintain, operate, renew and improve Wairoa's drinking water, wastewater and stormwater (3- waters) services, which include:

- Water Supply** - Council provides safe reliable drinking water through the Wairoa and Tuai supplies to homes and businesses. The Frasertown Water Treatment Plant (WTP) supplies potable water to the Wairoa and Frasertown communities as well as the AFFCO meat works.
- Wastewater** - Council provides reticulated wastewater schemes in Wairoa, Tuai, Māhia Beach and Ōpoutama that provide efficient means of protecting public health and protecting the environment.
- Stormwater** - Council provides stormwater systems in the Wairoa urban area, Māhia Beach and Tuai Village. Other rural networks of primarily open drains with some culverting are treated as part of the land transport activity.

STRATEGIC CONTEXT

Through this AMP, we want to clearly show the value of any investment made in addressing our strategic challenges and undertaking core business activities. Any investment needs to **achieve the desired outcomes and benefits for our customers and represent value for money**. It is also important that we show how we will meet regulatory requirements and environmental protection.

OUR VISION - Desirable Lifestyles, Thriving Economy, Treasured Environments, Connected Communities

NATIONAL & REGIONAL DRIVERS

Significant developments have occurred at a national level over the last three years. The New Zealand Government is reforming how Three Waters services are delivered across New Zealand. The reforms began in response to the issues identified following the Havelock North drinking water contamination in 2016.

As a response to national reform and regional challenges, in early 2019 the five Councils in Hawke's Bay began working together to review the current and potential service delivery options for Three Waters for all of Hawke's Bay. This work primarily focussed on assessing the current state of Council Three Waters services in the Hawke's Bay and developing a recommended approach to ensure the sustainable delivery of these critical services over the long term.

The Councils identified similar challenges with the ongoing Three Waters service provision including:

- Maintaining and improving the condition and performance of infrastructure** - issues around managing demand, aging infrastructure, resilience and risk.

- Ensuring the right capability and capacity** - the shortage of specialist resources makes it hard to fill certain roles and attract the skills needed.
- Ensuring a meaningful role for Māori** - the need for future Three Waters services delivery models to provide opportunity for partnership, co-governance and co-design with Māori.
- Community affordability** - the projected future expenditure highlights that all the Councils face significant increases in three water rates over the next five years in order to meet new requirements.

The Councils commissioned a report **Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options¹ (Regional Delivery Review)** to see whether there are benefits in developing a region-wide solution, to help address current and future challenges for the delivery of Three Waters services and to prepare for likely new central government regulations.

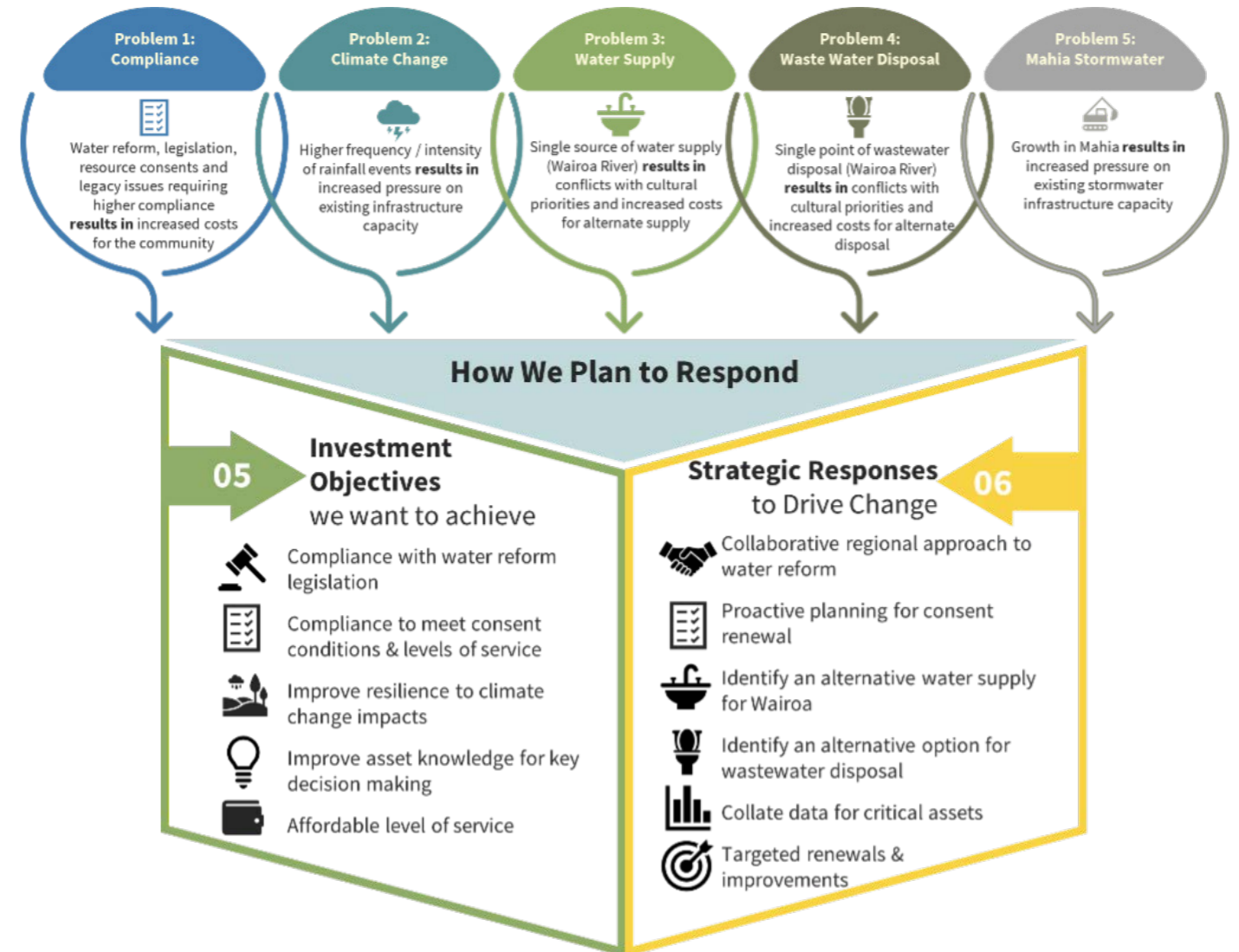
Subsequent to the Hawke's Bay regional review, in July 2020, the Government launched the Three Waters Reform Programme - a three year programme to reform local government Three Waters

service delivery arrangements. The Government's starting intention is to reform local government's Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The exact size, shape and design of these entities is still being worked through. Council has been working to provide required information to the Department of Internal Affairs to assist this process.

In July 2020, the Government announced funding to provide an immediate COVID stimulus package to maintain and improve water networks infrastructure, and to support a three year reform programme of local government water services delivery arrangements. Wairoa received \$11.04 million to help fix the backlog of waste water and water infrastructure projects.

OUR BIGGEST CHALLENGES & HOW WE PLAN TO RESPOND

In providing the Three Waters activity, we are faced with a number of strategic challenges:



¹ Morrison Low, July 2020. Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options.

The table below provides a more detailed summary of our strategic responses and the benefits of investing in these areas.

Problem	Evidence	Investment Objective	Key Strategic Response	Benefits of Investing
Compliance Water reform, legislation, resource consents and legacy issues requiring higher compliance results in increased costs for the community	Water reform Implications from water reforms on service delivery, including the impact of a water regulator and changes to legislation are relatively unknown and may impact on Levels of Service and structural changes. However, it will be a stricter regime with higher compliance requirements. As the Government's three year reform programme progresses, more certainty will be given to Government's starting intention is to reform Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The impacts of reform can then be considered and revaluated within the next AMP review in 2024.	Compliance with water reform legislation Affordable Level of Service	Collaborative Regional approach to water reform Council will continue to collaborate with Hawke's Bay Council's as we navigate the national reform programme impacts. Council will need to formally decide whether to opt-out of the reform. Targeted renewals and improvements Plan and budget on the basis of increased costs to meet legislative change.	Sustainable Level of Service Services provided will comply with legislation in the most cost effective way possible.
	Resource consents Four resource consents need renewing during the 10 year planning period, including Wairoa wastewater discharge consent renewal and stormwater global consent which are underway. Requirements to prepare each resource consent may increase (e.g. environmental impact assessments). New consent conditions will likely require more monitoring increasing the overall operational costs. Additional capital expenditure may also be required to meet new consent conditions.	Compliance to meet consent conditions & Levels of Service	Proactive planning for consent renewal Allocate funding and resourcing to secure new resource consents and monitoring of conditions. May need to be considered in the light of any national approach to the delivery of Three Waters. Council is preparing a global resource consent application to address all public stormwater systems in Wairoa township.	Compliant service delivery Keeping resource consents current means no disruption to service to customers and better health and wellbeing of community.
	Legacy issues <i>Water Supply</i> <ul style="list-style-type: none"> Almost 80% of the water supply network is between 10 and 50 years old. 30% of assets in very poor and poor condition. Network failures result in service interruptions. Water loss management, while improving, continues to be a focus. Leaking pipes can cause property and infrastructure damage. 	Improve asset knowledge for key decision making	Collate data for critical assets Invest in condition assessments of our assets, particularly older networks. Continue with existing leakage management including detection using drones.	Optimised decision making Data will be used in optimised decision making based to ensure appropriate renewal programmes.
	<i>Wastewater</i> <ul style="list-style-type: none"> About half of the wastewater network is greater than 50 years old. Inflow and infiltration is a known wastewater asset performance issue for the district's wastewater network. <i>Stormwater</i> <ul style="list-style-type: none"> About two thirds of the stormwater network is greater than 50 years old. Asset condition has not been assessed for the stormwater network to date. 	Affordable Level of Service	Targeted renewals and improvements Continue to undertake reticulation renewals particularly where assets are deemed critical to community well-being. Universal water metering in urban areas.	Improved network resilience Reduced impact of system vulnerabilities reducing the risk of service disruption due to unexpected outages. Sustainable water use Accurate water usage data can be used to promote sustainable water use.

Problem	Evidence	Investment Objective	Key Strategic Response	Benefits of Investing
Climate Change Higher frequency / intensity of rainfall events results in increased pressure on existing infrastructure capacity	Wairoa has the highest level of rainfall in the region raising river levels and increasing the sediment load in the rivers. Makes drawing and treatment of water for safe drinking water more difficult. Riverbank erosion and stabilisation issues at water intake point on Wairoa River requires further investment to secure access to the water supply for Wairoa and Frasertown. Flooding is a major hazard in Wairoa. Existing stormwater infrastructure may not have capacity to cope with more rainfall.	Improve resilience to climate change impacts	Targeted renewals and improvements Identify assets at risk to enable appropriate contingency plans and work programmes to be put into place. Upgrade infrastructure to cope with climate change impacts on source. Pipes will be increased in capacity to cope with projected climatic variations as they are replaced, or new infrastructure is installed.	Improved network resilience Reduced impact of system vulnerabilities reducing the risk of service disruption due to unexpected outages.
Water Supply Single source of water supply (Wairoa River) results in conflicts with cultural priorities and increased costs for alternate supply	Resource consents are necessary to take water from the environment. Water takes are monitored regularly for compliance with resource consents. Wairoa River is the primary water source for the Wairoa township and Frasertown. As stated above, increasing sediment load carried in the river makes the drawing and treatment of water more difficult.	Improve resilience to climate change impacts	Identify an alternative water supply for Wairoa Identification of an alternative water source to avoid reliance on the Wairoa River. Preferred option is purchase mobile treatment plant to provide additional treatment for high risk areas (i.e. Wairoa Bridge, Frasertown Plant, Tuai Plant).	Improved network resilience Reduces over-reliance on the Wairoa River as only source of water and increases resilience.
Waste Water Disposal Single point of wastewater disposal (Wairoa River) results in conflicts with cultural priorities and increased costs for alternate disposal	Community and iwi do not want the wastewater discharged into the river. Government's freshwater reforms to clean up the nation's waterways, are likely to lead to higher discharge standards for wastewater, and greater treatment of stormwater. Sludge from the wastewater treatment plant is disposed of at the Wairoa Landfill, with 12,000 tonnes of sludge expected over the next 30 years at a cost of approximately \$1.3m. High percentage of customers not very satisfied (20%).	Compliance to meet consent conditions & Levels of Service	Identify an alternative option for wastewater disposal Develop a staged approach to an alternative disposal method of wastewater to land and obtain resource consent. The intention is to transition over time to land discharges (irrigation) which will also require storage ponds to be built for holding treated wastewater during winter so it can be irrigated in summer or discharged to the river when it is flowing faster. There are a range of options for each aspect of the broader package which require integrated decision-making processes.	Improved freshwater quality Better quality water in our river and an outcome that aligns with Māori values and community aspirations.
Māhia Stormwater Growth in Māhia results in increased pressure on existing stormwater infrastructure capacity	There is limited formal stormwater infrastructure in Māhia, where growth is anticipated. The existing stormwater assets are private.	Affordable Level of Service	Targeted renewals and improvements Develop formal stormwater system progressively to manage growth and mitigate environmental risk from more runoff.	Improved network capacity

LEVELS OF SERVICE

Our community feedback on Three Waters services shows an increasing trend in satisfaction. Satisfaction levels with water supply show that only 8% of those surveyed in 2020 are dissatisfied with the quality of the drinking water supply. Dissatisfaction levels for wastewater (2019) and stormwater (2020) are higher with 20% of those surveyed being dissatisfied, but have reduced significantly in recent years.

Our Levels of Service are heavily mandated through legislation and consent compliance. Key measures we use to assess performance against these Levels of Service are based on Department of Internal Affairs mandatory performance measures.

Key gaps in our current Levels of Service and the responses we have taken to address these are detailed below.

Activity	Performance Measure	Service Level Gap	Initiative	Desired Outcome
Water Supply	Safety of Drinking Water	Māhanga Water Supply Wairoa District Council faces considerable challenges to delivering long term safe potable drinking water to the Māhanga community and complying with NZ drinking water standards.	Māhanga Water Supply Referendum A referendum on the Māhanga drinking water will be held in 2021.	Compliant water supply for Māhanga
	Fault Response Times	Responding to Faults within Target Timeframes Resourcing and travel times between various water schemes (Tuai and Māhia) can be an issue in terms of response times.	Proactive Maintenance & Renewals This will ensure fewer faults occur that require reactive response to repair.	Meeting response times for faults
Wastewater	Discharge Compliance	Discharge Infringement Notices Two infringement notices received for discharging out of tidal time. Investigations showed old cabling was causing an issue.	Repairs & Process Automation Have completed cable upgrade and automated discharge times. Proactive Maintenance & Renewals This will ensure fewer faults occur that require reactive response to repair.	Full compliance with all consents

Due to national drinking water and environmental legislation changes, Levels of Service are likely to become more prescriptive and may be challenging for Council to meet. Key impacts on Levels of Service will include:

- Drinking water standards continue to tighten and the future expectation of LOS regarding water quality will also be constricted
- The future of environmental standards constricted hence the pressure to reduce water wastage from leakage
- Continued pressure to reduce overall water usage
- Wastewater discharge consent requirements likely to tighten up further to meet new Freshwater legislative requirements.

Our key response is to continue with a Collaborative Regional Approach. Hawke's Bay Councils will continue to work collaboratively on a review of the current and potential Three Waters service delivery options for Hawke's Bay. Alongside this, we are planning capital renewals and improvements to put us in the best position possible ahead of these legislative changes.

MANAGING RISK & RESILIENCE

Resilience has been identified as a significant challenge for Wairoa in the 2021-2051 Infrastructure Strategy with the following responses followed:

- Good asset management practices and robust renewals programmes based on the condition and the remaining life of infrastructure assets.

- Identification of critical assets and management of these assets to ensure that they do not fail or to limit the effect of a failure.
- Emergency Response and Business Continuity Plans to be in place for emergency events.

Our specific actions to improve the resilience for the Three Waters infrastructure assets to climate change include:

- Complete new stormwater catchment modelling to provide a more up to date view on climate change impacts.
- When modelling has been completed use prioritisations based on flood prone areas (e.g. along the Wairoa River) and development Catchment Management Plans.

WHAT WE ARE INVESTING IN

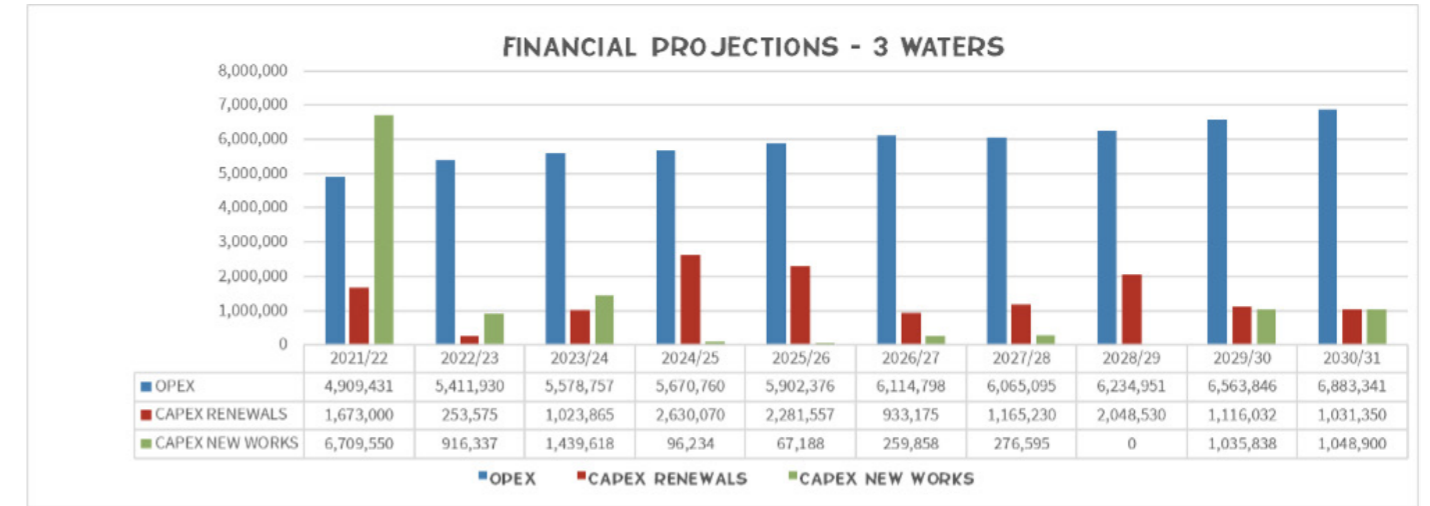
Our investment going forward will address the problems identified for Wairoa within the context of local and national strategic drivers.

OUR PROPOSED INVESTMENT PROGRAMME OVER THE NEXT 10 YEARS

The projected expenditure on our Three Waters assets over the next 10 years, is an investment of approximately \$85.3 million. The 10 year financial plan is summarised below. This shows the annual expenditure for maintenance and operations to be relatively constant over the 10 year period. However, with the Water Reform outcomes coming into effect from 2024 onwards there is potential for significant operational cost increases. Morrison Low's Regional Report projected an increase in Operational Costs is approximately

41% regionally for the enhanced status quo option between 2023/24 and 2024/25.

The peak of capital upgrade expenditure in 2021/22 covers projects that make up the \$11M allocated to Wairoa as part of the Central Government reform process.



A break down of 10 year expected operating and capital expenditure by activity is included in the table below.

Infrastructure Activity	10 Year Operational Expenditure	10 Year Capital Expenditure
Water Supply	\$26.0 million	\$12.3 million
Wastewater	\$26.7 million	\$12.4 million
Stormwater	\$6.69 million	\$1.24 million
Total	\$59.3 million	\$26.0 million

Over the next 10 years, Council is planning a consistent approach to maintenance and operations of the Three Waters networks and a planned optimised renewals programme based on ongoing condition assessments of pipelines.

WATER SUPPLY

Data shows that 34% of the reticulation pipes are in Poor or Very Poor condition. Water leakage assessment indicates that Frasertown and Tuai reticulation has significant leakage with results rating within World Bank Institute Band C: Poor leakage record that requires intensified leakage reduction efforts.

Over the next 10 years, Council is planning a consistent approach to maintenance and operations of the water supply networks and a planned optimised renewals programme that focuses on condition and leakage issues. The renewals programme will also ensure the current "backlog" of pipes already at the end of their useful life are renewed on a prioritised basis. Priority renewals include:

- Achilles Street water main relocation,
- The supply pipeline from the intake on the Waiou River to the Water Treatment Plant at Frasertown,
- The AC pumping main from the treatment plant to reservoirs.

Key capital upgrade projects include:

Project	Year	10 Year Cost
Smart meters installed in all Wairoa Township	2021/22	\$1.33M
Tuai Retic Upgrade	2022/23	\$517.5k

WASTE WATER

The wastewater system in Wairoa has been assessed as having 37% of the reticulation pipes in Poor or Very Poor condition, with 11.7% of the reticulation assets having unknown condition. A recent assessment of waste water pump stations also found these assets to be in average to poor condition.

Over the next 10 years, Council is planning a consistent approach to maintenance and operations of the wastewater networks and a planned optimised renewals programme based on ongoing condition assessments of pipelines, including CCTV infiltration investigation.

Waste water renewals have been bought forward into year 1 from the first 6 years of the 10 year renewals programme, which will be funded as part of the \$11M central government funding. This reduces the need for renewals in subsequent years.

Key capital upgrade projects, which are mostly programmed for construction in the 10 year period include:

Project	Year	10 Year Cost
Ōpoutama / Bluebay Stage 1 - WWTP upgrade	2021/22	\$190k
Ōpoutama / Bluebay Stage 2 - WWTP / Irrigation field expansion	2021/22	\$750k
New Wairoa WWTP / Upgrade / BNRAS & UV	2021/22	\$1.05M
Dedicated Generators in each pump station	2021/22	\$270k

Project	Year	10 Year Cost
Wastewater Expansion - North Clyde (Rising Mains)	2021/22 – 22/23	\$359k
Outfall (Lowe Environmental)	2021/22	\$2.03M
Storage (Lowe Environmental)	2023/24	\$1.33M
Catchment (Lowe Environmental)	2021/22 – 27/28	\$545k
Fencing & Planting Māhia (Consent requirements)	2021/22 – 24/25	\$326k
CCTV Infiltration Investigation	2026/27 – 2027/28	\$348k
Māhia Beach Sewerage System	2029/30 – 2030/31	\$1.76M

STORM WATER

Stormwater assets condition is largely unknown and therefore can only be based on known data such as age. This condition needs further validation and CCTV inspections have been allowed for in years 2023/24 and 2024/25 of the renewals programme.

Stormwater expenditure is predicted to remain relatively constant over the next 10 years with a consistent approach to service delivery and a planned optimised renewals programme.

Asset data shows minimal requirement for renewal of stormwater assets before 2040, based on age data. A small amount of pipeline renewals has been included in 2025/26.

Key capital upgrade projects include:

Project	Year	10 Year Cost
Piping Open Drains - Wairoa	2029/30 – 2030/31	\$350k
Māhia Beach Pipelines	2021/22	\$500k

FUNDING SOURCES

The Council Three Waters activity will be funded in accordance with the financial policies of Council as indicated below.

Key capital upgrade projects include:

Programme	Funding Mechanism
Opex	Funded through general rates
Capital Renewals	Provided by rates, depreciation Assets are depreciated on a straight-line basis at rates estimated to write-off the cost over the expected useful economic life
Capital New Works	Funded by central government water reform funding of \$11M and topped up using loans where applicable

IMPACT OF BUDGET LIMITATIONS

The implications of meeting budget limitations, including justification for the expenditure forecast and consequences if the budget is reduced, are summarised below.

Expenditure Programme	Justification	Consequences if Budget Reduced
Opex	To meet Levels of Service for public health and consent conditions.	Non-compliance with Consent Conditions Any breach of consent condition carries serious penalties and may result in shut down of water services.
	Adequate reactive and proactive maintenance to keep assets functioning and limit failures.	Service Disruption to Customers Large amounts of failures will result in disruption of services to the community and may result in more costly repairs to assets as well as other surrounding assets (e.g. roads and private property).
Capital Renewals	Adequate renewals to optimise life of assets and proactively replace assets prior to failure.	Service Disruption to Customers If renewals are not completed proactively, more failures are likely to occur resulting in increased reactive maintenance budgets and disruption of services to the community. Lack of Resilience Aging assets are more susceptible to wide spread failure in the event of flooding, slips and coastal inundation.
	Capital and upgrade works required in preparation for legislation changes resulting from central government Water Reform.	Risk and Compliance Assets not meeting increasing standards in the provision of Three Waters service. Lack of Resilience Assets which are not designed to meet additional capacity resulting from climate change and increased intensity rain events.

PLAN IMPROVEMENT

Improvement opportunities have been identified throughout the development of this AMP. The main improvement projects to be achieved in the next three years due to their priority and importance

for achieving core asset management for the Three Waters activity include:

Improvement Area	Description	Activity	Action	Indicative Timeline
Drivers for Change	Catchment Modelling	Stormwater	Complete new stormwater catchment modelling to provide a more up to date view on climate change impacts.	2023/24
	Catchment Management Plans	Stormwater	When modelling has been completed use prioritisations based on flood prone areas (e.g. along the Wairoa River) and development Catchment Management Plans.	2023/24 onwards
	AFFCO Engagement & Demand Strategy	Water	To improve our understanding of future demand, we need to understand future trends in water usage from our key user AFFCO. An engagement strategy is required to ensure regular communication with AFFCO to predict peak and future usage trends.	2022/23
Risk & Resilience	Risk Register	All Activities	There is a need for full review of the Three Waters Risk Register to ensure risk issues have been adequately identified and ensure that current high risks are still relevant.	2021/22
	Emergency Response Plans	All Activities	To improve the resilience Level of Service delivery, Emergency Response Plans need to be developed. Draft plans are currently underway. The plan will cover the effects of moderate and significant events on vulnerable and critical assets.	2020/21
Our Assets	Spatial Data	All Activities	Collect spatial data for all assets where this is missing. Use asset criticality to prioritise data collection programme. Above ground asset data quality was reviewed during the 2020 Valuation process but further improvement items are required to improve data quality.	2021/22 - 23
	Water Treatment Plant Re-Valuation	Water	Full asset re-valuation for Water Treatment Plant.	2023/24
	Pipeline Condition Assessment	Water / Stormwater	While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through inspections and materials testing.	Annual
	CCTV Infiltration Investigations	Wastewater	While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through CCTV inspections and materials testing.	2021/22
Lifecycle Management	Pump Stations Maintenance Programme	Wastewater	Develop a scheduled maintenance programme to cover weather tightness (spouting, roofing, housings) as well as general maintenance programmes. Inspect all pump stations each year with a scheduled maintenance programme once per year on average.	2022/23
	Maintenance Costs Data Collection	All Activities	Complete maintenance cost data collation in AssetFinda and georeferenced costs for future analysis.	2021/22
	Disposal Plan	All Activities	Full Disposal Strategy to be completed for key projects requiring disposal of assets. This should include ensuring costs are accounted for in project estimates as well as any environmental impact assessment.	2021/22

LIMITATIONS & ASSUMPTIONS

Key areas of uncertainty and assumptions made as part of this planning process and their likely consequence or impact are included below.

Limitation/Assumption	Description	Consequence/Impact	Risk Level	Uncertainty Level
National Water Reform	In July 2020, the Government launched the Three Waters Reform Programme – a three year programme to reform local government Three Waters service delivery arrangements. The Government's starting intention is to reform local government's Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The exact size, shape and design of these entities is still being worked through. Council has been working to provide required information to the Department of Internal Affairs to assist this process.	While the short term plan (1-3 years) is relatively certain, the longer term outlook (4-10 years) is uncertain. Forecast expenditure could increase substantially from 2024 onwards. Consequences will depend on whether Council decides to opt-out of the reform.	High	High
Climate Change	Climate change makes our weather more extreme and unpredictable leading to flooding and rising sea levels. Although we understand that change is occurring, it is unknown how fast change will occur or the full extent to which consequences will happen in the future.	Increased rainfall intensity impacts on river turbidity and our ability to make drinking water (anything over 4000 NTUs means stopping production). It will also stress our stormwater assets causing potential loss of assets. Coastal erosion may also cause loss of assets. Service interruptions could become more frequent and of longer durations.	High	High
Consenting & Compliance	Four existing consents expiring within the 10 year planning period (or just beyond 10 years), including Wairoa wastewater discharge consent which is underway and stormwater global consent is also underway.	Renewal of consents may have significant cost impact and may result in increased ongoing compliance costs.	High	Medium
Community Affordability	Current predictions of a static (or decreasing) population base and socio-economic demographics mean makes it difficult to provide sustainable services that the community can afford. Ongoing COVID-19 pandemic may also result in further impacts on the local economy, including possible income reduction.	Programmed works are not affordable in the long term for rate payers.	High	Medium
Staffing & Resources	Increased operational requirements as a result of reform and consenting changes will require additional resourcing. Securing and retaining skilled staff has been an issue in the past for Wairoa, primarily due to isolation and associated economic and social issues. A number of initiatives have been introduced to attract staff to the district and to retain staff.	There is an ongoing risk to the sustainability of our services through resourcing and skill shortages and re-training of new staff. Also dependent on outcomes from reform changes.	Medium	Medium

Limitation/Assumption	Description	Consequence/Impact	Risk Level	Uncertainty Level
Asset Revaluations & Data Accuracy	Asset renewal and maintenance forecasts are based on the condition and the remaining life of infrastructure assets. Assumptions on an asset's useful life and its replacement cost have been reviewed through the latest valuation process. Additional data cleansing and pipe material testing is informing useful life.	The accuracy of asset data has a direct impact on the accuracy of renewals and maintenance forecasts.	Medium	Medium
Physical Works Costs	Project estimates of cost and timing are based on the best available scope, asset and market information available at the time of planning. Costs for disposal of existing assets (where this is required) are not well understood. Operations and maintenance costs are based on tender prices with provision for cost fluctuations included. They do not take into account changes to operational requirements that may result from reform changes.	Over or under estimation and possibly not completed the full programme of work, where costs are higher than estimated. Disposal costs could add significantly to total capital costs. Increased operational requirements as a result of reform and consenting changes will require additional expenditure.	Medium	Medium

1. INTRODUCTION

1.1 PURPOSE OF THIS PLAN

This Three Waters Activity Management Plan (AMP) acts as a route map for the future, by providing the logic, reasoning and context behind how we propose to maintain, operate, renew and improve Wairoa's Three Waters network, which includes water supply, wastewater and stormwater. It informs the development of Wairoa District Council's (Council's) 2021-31 Long Term Plan (LTP).

A key driver for the Three Waters activity is compliance with regulatory requirements, so this is core to the development of this plan.

However, we also to clearly show the value of any investment made in addressing our strategic Three Waters problems and undertaking core business activities. Any investment needs to achieve the desired outcomes and benefits for our customers and represent **value for money**.

This AMP seeks to demonstrate that the proposed programme presents **value for money** by doing:



The 3-water activities are combined into one AMP to mirror the way the activity is managed and delivered through a combined Three Waters contract, which aims to deliver a more cost-effective service. This excludes the water production and supply activity for the Frasertown Water Treatment Plant which is retained in-house.

While Council provides these services now, the Government is reforming the Three Waters regulatory system, meaning anyone responsible for Three Waters systems will need to change the way they deliver Three Waters services (drinking, waste and storm water) services. Councils across the country will need to adapt their approaches to meet the new requirements.

1.2 SCOPE OF THIS PLAN

1.2.1 OVERVIEW OF SERVICES

This AMP details the assets and services that comprise the Three Waters Activity:

	Council provides safe reliable drinking water through the Wairoa and Tuai supplies to homes and businesses. The Frasertown Water Treatment Plant (WTP) supplies potable water to the Wairoa and Frasertown communities as well as the AFFCO meat works.
	Council provides reticulated wastewater schemes in Wairoa, Tuai, Māhia Beach and Ōpoutama that provide efficient means of protecting public health and protecting the environment.
	Council provides stormwater systems in the Wairoa urban area, Māhia Beach and Tuai Village. Other rural networks of primarily open drains with some culverting are treated as part of the land transport activity.

In response to the Government water reforms, the Hawke's Bay Councils have been working together to review the current and potential Three Waters service delivery options for Hawke's Bay, Te Matau-a-Māui. Hawke's Bay Councils all share the same responsibility for ensuring our communities can enjoy safe, reliable, resilient, efficient and affordable Three Waters services.

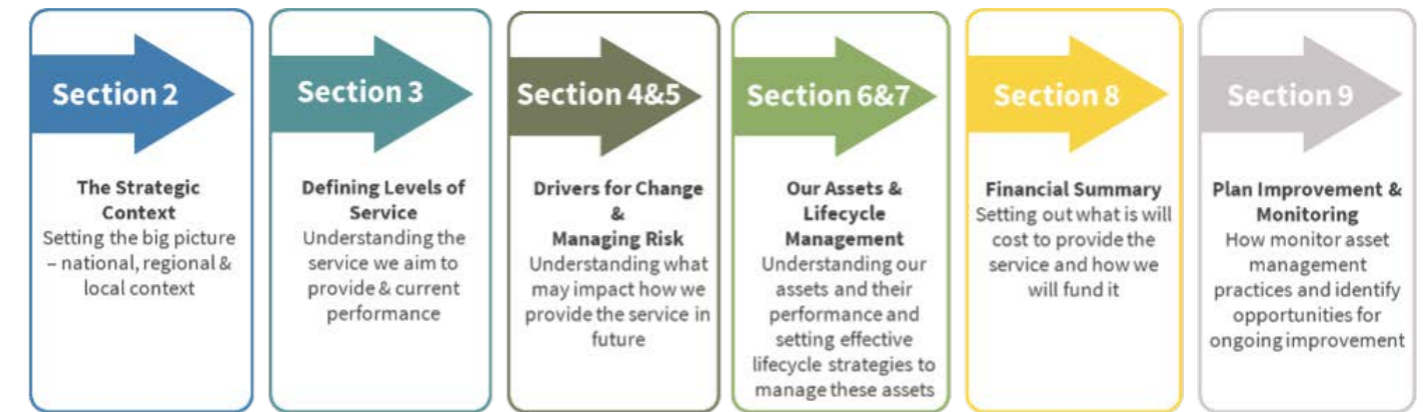
In short:

- New regulations and standards are coming which require change
- Future affordability challenges need to be addressed, especially between urban and rural Councils
- For Hawke's Bay to thrive, we need core infrastructure and services at a cost that is affordable across the region.

1.2.2 PLAN STRUCTURE

To achieve the above purposes, this AMP is structured to provide a 'top down' approach to managing the Three Waters activities. This means we link to key Strategic Drivers, at the start of the plan, to

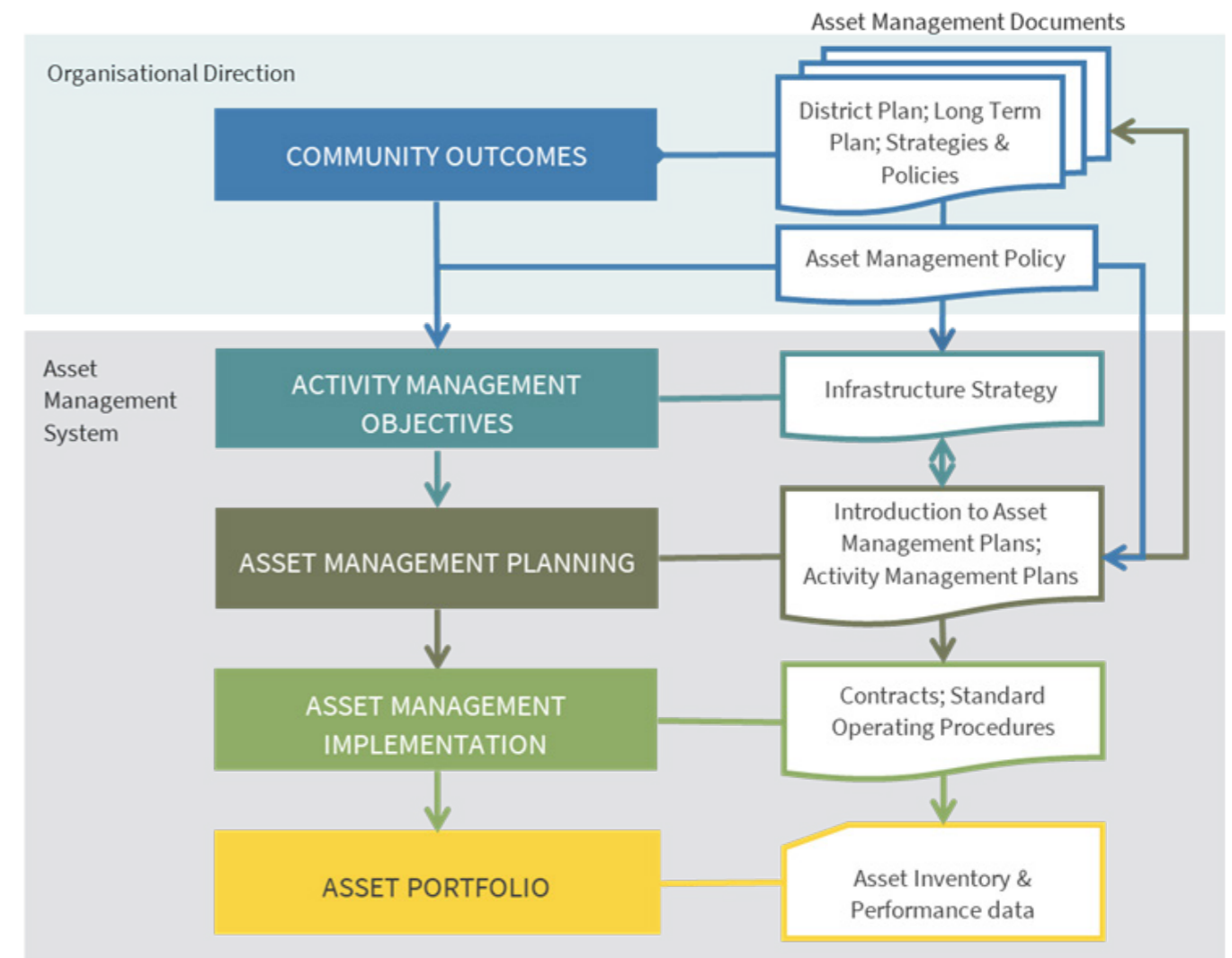
inform the direction for the plan. The plan is divided up into the following sections.



1.3 RELATIONSHIP WITH OTHER COUNCIL PLANS

The Activity Management Plan (AMP) is a tactical plan that details how Council will deliver its Three Waters service. It gives effect to a range of other strategic and tactical planning documents including Council's strategic direction and Long Term Plan (LTP).

This plan should be read in conjunction with Council's other key planning documents. The diagram below shows "line of sight" between Council's objectives and our Activity Management Planning through Council's various strategic and planning documents.



This plan signals a step change for Council to a more a proactive approach to managing the Three Waters activity. This AMP demonstrates how Council's goals and strategic targets will be achieved through effective sustainable management of Three Waters assets. This AMP covers a period of ten years between 1 July 2021 and 30 June 2031. The AMP is updated every three years, unless there are significant changes to activities, programmes and expenditure.

This plan has been written to provide the information required for good asset management planning as set out in:

- LGA 2002 Schedule 10 and amendments

- Office of the Auditor General criteria for AMPs, 2006
- International Infrastructure Management Manual (IIMM) 2015, published by New Zealand Asset Management Support (NAMS).

1.4 LIMITATIONS & ASSUMPTIONS

Key areas of uncertainty and assumptions made as part of this planning process and their likely consequence or impact are included below.

Limitation/ Assumption	Description	Consequence/Impact	Risk Level	Uncertainty Level
National Water Reform	In July 2020, the Government launched the Three Waters Reform Programme – a three year programme to reform local government Three Waters service delivery arrangements. The Government's starting intention is to reform local government's Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The exact size, shape and design of these entities is still being worked through. Council has been working to provide required information to the Department of Internal Affairs to assist this process.	While the short term plan (1-3 years) is relatively certain, the longer term outlook (4-10 years) is uncertain. Forecast expenditure could increase substantially from 2024 onwards. Consequences will depend on whether Council decides to opt-out of the reform.	High	High
Climate Change	Climate change makes our weather more extreme and unpredictable leading to flooding and rising sea levels. Although we understand that change is occurring, it is unknown how fast change will occur or the full extent to which consequences will happen in the future.	Increased rainfall intensity impacts on river turbidity and our ability to make drinking water (anything over 4000 NTUs means stopping production). It will also stress our stormwater assets causing potential loss of assets. Coastal erosion may also cause loss of assets. Service interruptions could become more frequent and of longer durations.	High	High
Consenting & Compliance	Four existing consents expiring within the 10 year planning period, including Wairoa wastewater discharge consent is underway and stormwater global consent is also underway.	Renewal of consents may have significant cost impact and may result in increased ongoing compliance costs.	High	Medium
Community ability to pay	Current predictions of a static (or decreasing) population base and socio-economic demographics mean makes it difficult to provide sustainable services that the community can afford. Ongoing COVID-19 pandemic may also result in further impacts on the local economy, including possible income reduction.	Programmed works are not affordable in the long term for rate payers.	High	Medium

Limitation/ Assumption	Description	Consequence/Impact	Risk Level	Uncertainty Level
Staffing & Resources	Increased operational requirements as a result of reform and consenting changes will require additional resourcing. Securing and retaining skilled staff has been an issue in the past for Wairoa, primarily due to isolation and associated economic and social issues. A number of initiatives have been introduced to attract staff to the district and to retain staff.	There is an ongoing risk to the sustainability of our services through resourcing and skill shortages and re-training of new staff. Also dependent on outcomes from reform changes.	Medium	Medium
Asset Revaluations & Data Accuracy	Asset renewal and maintenance forecasts are based on the condition and the remaining life of infrastructure assets. Assumptions on an asset's useful life and its replacement cost have been reviewed through the latest valuation process. Additional data cleansing and pipe material testing is informing useful life.	The accuracy of asset data has a direct impact on the accuracy of renewals and maintenance forecasts.	Medium	Medium
Physical Works Costs	Project estimates of cost and timing are based on the best available scope, asset and market information available at the time of planning. Costs for disposal of existing assets (where this is required) are not well understood. Operations and maintenance costs are based on tender prices with provision for cost fluctuations included. They do not take into account changes to operational requirements that may result from reform changes.	Over or under estimation and possibly not completed the full programme of work, where costs are higher than estimated. Disposal costs could add significantly to total capital costs. Increased operational requirements as a result of reform and consenting changes will require additional expenditure.	Medium	Medium

2. THE STRATEGIC CONTEXT

2.1 NATIONAL CONTEXT

Significant developments have occurred at a national level over the last three years. The New Zealand Government is reforming how drinking water, wastewater and stormwater (Three Waters) services are delivered across New Zealand. The reforms began in response to the issues identified following the Havelock North drinking water contamination in 2016.

In July 2020, the Government launched the Three Waters Reform Programme – a three-year programme to reform local government Three Waters service delivery arrangements.

Currently 67 different Councils own and operate the majority of the drinking water, wastewater and stormwater services across New Zealand. Local government is facing urgent challenges in the provision of these services including: funding infrastructure deficits, complying with safety standards and environmental expectations,

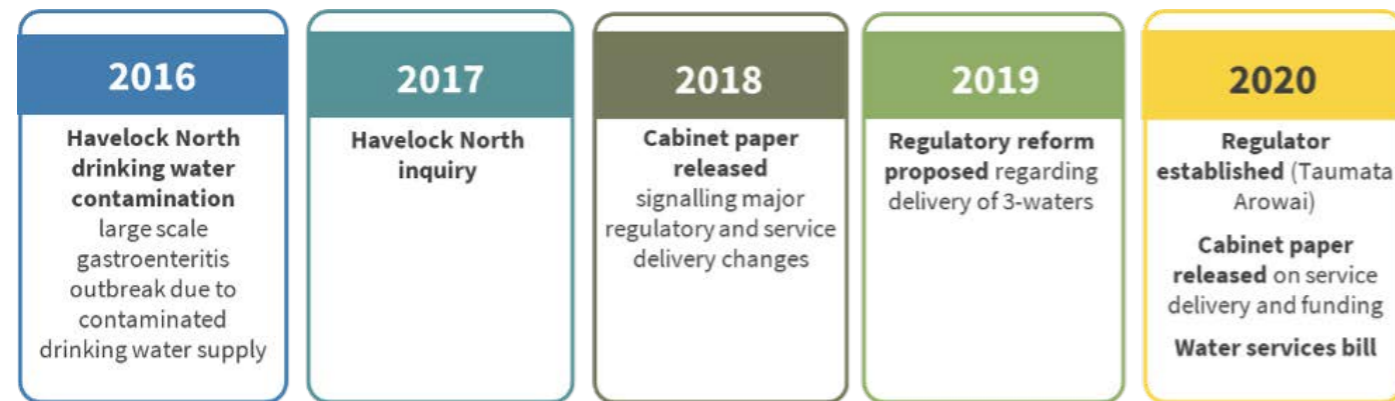
building resilience to natural hazards and climate change into Three Waters networks, and supporting growth.

Rather than piecemeal solutions, comprehensive, system-wide reform is needed to achieve lasting benefits for the local government sector, our communities, and the environment.

The Government's starting intention is to reform local government's Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The exact size, shape and design of these entities is still being worked through.

2.1.1 A TIMELINE OF REFORM

The key timeline of events to date that have led to the reform are:



2.1.2 REFORM REQUIREMENTS

The Three Waters Review has three pou:

- A new regulatory authority – Taumata Arowai
- Improved regulation – new standards and responsibilities for water suppliers
- New Three Waters service delivery arrangements.

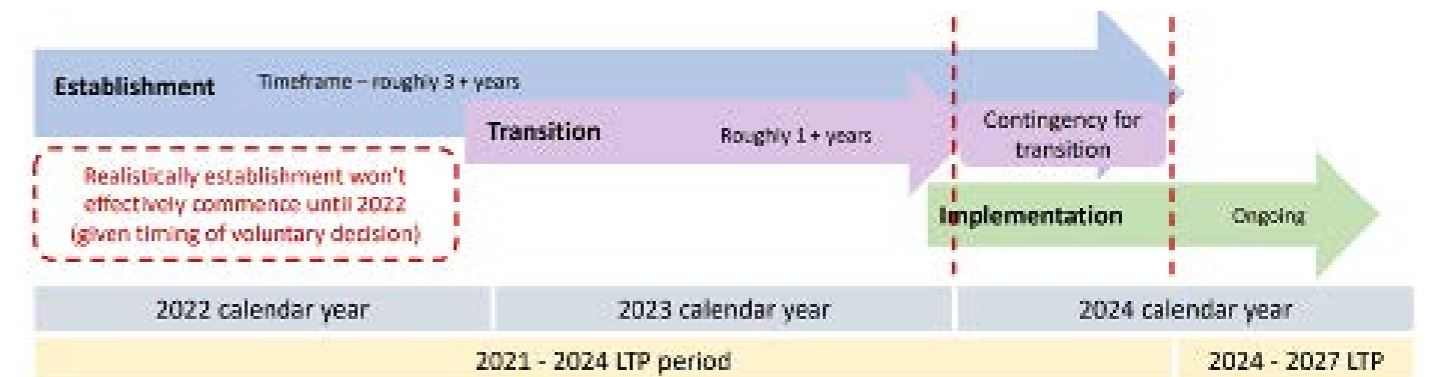
These reforms are covered in more detail below and will have significant implications and challenges for Three Waters service delivery. Councils across the country will need to adapt to meet the new requirements.

National	
Taumata Arowai Water Services Regulator Act	This legislation creates a new regulatory authority to oversee, administer and enforce a revised Three Waters regulatory system.
Water Services Bill	Government has also introduced the Water Services Bill, setting out the new responsibilities that will be imposed on drinking water suppliers and proposing new arrangements relating to sources of drinking water. Submissions on the bill are likely to be called in September.

National	
Reform Programme	Announcement of a three year, Three Waters reform programme supported by a central / local government steering committee to investigate opportunities for collaborative approaches to water service delivery.
	The Reform Programme is being progressed in partnership with local government, and iwi/Māori as the Crown's Treaty Partner. A Joint Three Waters Steering Committee provides collaborative oversight of the reform programme that brings these perspectives together.
	Central government has agreed to a voluntary approach to reform, with early legislation being progressed to enable and support Councils to make decisions to participate in the new service delivery system.
	Hawke's Bay's four local Councils all agreed to participate in the initial steps of the reform process. As a result, \$50m will be allocated for immediate Three Waters investment. Wairoa has been allocated \$11.04 million from this fund. This has contributed to building momentum for change and represents tangible progress towards service delivery reform.
Councils will have a further opportunity to make decisions about participation in late 2021.	

Current indications of the programme for establishment and transition for new service delivery entities is shown below. This programme may change depending on decisions made by Cabinet and therefore provides an indication only of timeframes. However,

the target is for all Water Service Entities to be operationally live by June 2024.



2.2 REGIONAL CONTEXT

Since early 2019, Central Hawke's Bay District Council, Hastings District Council, Napier City Council, Wairoa District Council and Hawke's Bay Regional Council have been working together to review the current and potential service delivery options for drinking, waste and stormwater (Three Waters) for all of Hawke's Bay. The project aligns with the five Councils' strategic priority for the 2019-22 triennium; water safety, security and planning.

The five Councils of Hawke's Bay commissioned a report **Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options³ (Regional Delivery Review)** to see whether there are benefits in developing a region-wide solution, to help address current and future challenges for the delivery of drinking water, wastewater and stormwater services and to prepare for likely new central government regulations.

In July 2020, Government announced an opt in partnership approach to reform Three Waters service delivery arrangements, giving Hawke's Bay Councils access to \$50 million dollars of Three Waters funding. In late August 2020, the four local Councils of the region opted in to the first phase of the Central Government reform programme. **Hawke's Bay will use the findings from the Regional Delivery Review to partner in the service delivery arrangements reform process.**

Morrison Low, July 2020. Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options.

2.2.1 REGIONAL DELIVERY REVIEW OUTCOMES

Three waters services in Hawke's Bay are currently delivered by the four Councils that own the assets. The review concentrated on these four Councils even though it was commissioned by all five Councils. It examined options for a new organisation model to deliver the services and addresses the skills and expertise needed, operational considerations, challenges and benefits.

The primary focus of this review was to complete an assessment of the current state of Council Three Waters services in the Hawke's Bay and develop a recommended approach to ensure the sustainable delivery of these critical services over the long term.

Investment Objectives

The investment objectives for the review are outlined below.

 To provide three water services in a way that is affordable and effective	The Three Waters service's model must address the challenge of providing for an effective, affordable service in a fiscally responsible way.
 To provide services that are safe, reliable and resilient	Access to safe and reliable Three Waters service are fundamental to all the urban and rural communities of Hawke's Bay.
 To provide services through a model that enables a meaningful role for Māori	The Local Government Act requires a local authority to provide opportunities for Māori to contribute to its decision making process.
 To provide services through a model that has the value of water at the centre	Water is vital to community life and as such three water services are part of a holistic water system.
 To provide Three Waters services in a way that supports our urban and rural communities	The services influence how people across Hawke's Bay live, work, gather, socialise, recreate and value environmental amenity.
 To provide Three Waters services that build enduring capability and capacity	The Three Waters model must be capable of, and have the capacity to, deliver quality sustainable planning, management and operation of three water services now and into the future.

The case for change

- New regulations and standards are coming which will force change
- Future affordability challenges need to be addressed
- Strategically, there are good reasons for Hawke's Bay's Councils to work together
 - for customers and ratepayers, staff and Councils
 - to achieve the best solution for Hawke's Bay

The options

Initially a long list of options was considered, and this was reduced to a short list through a high-level assessment. The shortlist represents the options most likely to meet the investment objectives with the enhanced status quo being the benchmark against which all options were considered. The five shortlisted options are outlined below.

Option	Council Responsibility	Approach
Enhanced Status Quo	Councils retain individual Three Waters service delivery, asset ownership and resourcing	No significant change to existing service delivery arrangements
Shared Services Business Unit (SSBU)	Councils second their staff to the SSBU, but retain ownership of assets and public accountability	SSBU would second staff into single group with regional strategic oversight of asset management and infrastructure delivery
Management Council Controlled Organisation (CCO)	Councils would form a joint committee with other Councils and Māori in co-governance model, set objectives, monitor performance, public accountability, asset ownership, strategies and plans.	CCO would be accountable to Councils, employ own staff, deal directly with public, have regional strategic responsibility for network and asset management, recover costs from each Council, have a board of directors.

Option	Council Responsibility	Approach
Sub-national management CCO	Considers Hawke's Bay joining an existing CCO beyond Hawke's Bay	May be savings and efficiencies of scale. Would operate as above.
Asset Owning CCO	As for Management CCO, but Councils no longer retain asset ownership.	As for management CCO, but CCO also own assets, consolidate operational and infrastructure costs, recover costs directly from each customer.

The recommended option from the Regional Study is the Regional asset owning CCO. Based on recent national developments, it is unlikely that a regional CCO approach will come to fruition. However, the recommended outcomes from this study may be used as an input into national level decision making on new Water Service Entities.

2.2.2 TANGATA WHENUA - MĀORI ENGAGEMENT

Wai/Water is considered a taonga/treasure to Māori. *Māori culture and values have always placed a high importance on the energy, value and need to respect wai/water. Marae have always been established close to water, and the rivers, harbours and sea have always been a source of food. This is particularly evident in Hawke's Bay. For Māori and communities, the health of the water is connected to the health of the people; we are one and the same.*

The Regional Delivery Review acknowledged Māori's relationship to this taonga and recognises that the development of any model must acknowledge the importance of providing a meaningful role for Tangata whenua/Māori. Tangata whenua/Māori are our treaty partners and the Review Team committed to engaging and partnering with Māori. In addition, the review team was guided by the Local Government Act to ensure we provide opportunities for Tangata whenua/Māori to contribute to the decision-making process.

As part of the Regional Delivery Review ongoing kōrero with the Māori Standing Committees of the five Councils, Hawke's Bay Regional Council Regional Planning Committee and Māori Advisory Committee has been completed. Through the kōrero it is clear how culturally significant water is for Māori and that the Regional Delivery Review should incorporate Te Ao Māori (Māori world view), kaitiakitanga (guardianship) and acknowledge mātauranga Māori (traditional Māori knowledge). There is a strong desire from Māori for the option to include true partnership, co-design, and co-governance.

The national level Water Services Entity review is considering Māori participation and governance at the heart of future water services delivery.

2.3 WAIROA LOCAL CONTEXT

Council's mission defines who we are, what we are trying to achieve and who our intended customers are in a single succinct statement.

OUR MISSION

To lead and support the Wairoa community through decision-making that promotes the social, economic, environmental and cultural well-being of the District now and in the future.

Council's vision defines our aspirations for Wairoa's future. It helps us to focus on what matters the most for our community.

OUR VISION

Desirable Lifestyles, Thriving Economy, Treasured Environments, Connected Communities

Activity goals have been set for each activity to contribute to the vision:

WATER SUPPLY

To comply with the drinking-water standards

WASTE-WATER

Reliable & safe collection & disposal of sewage

STORM-WATER

Effective and efficient management of collection & disposal of stormwater to ensure that the capacity of available facilities are optimised & that the environment is not compromised

The vision is supported by the following principles:

- Prudent financial management provides for maintaining Levels of Service for current and future generations
- Proactive provision and management of critical assets
- Integrated provision of infrastructure
- Making the best use of our existing investment
- Robust asset management practices
- Partnership with Māori.

Partnership with Māori

Council acknowledges the inclusion and importance of mātauranga Māori in its infrastructure design and implementation processes. Council is committed to exercising due diligence in this area in order to achieve the best outcome for the community and the environment.

Council is committed to meaningful engagement with Māori on issues that are pertinent to all parties and working together to agree on the best pathway forward for the community and the environment.

2.3.1 CONTRIBUTION TO COMMUNITY OUTCOMES

Sitting beneath this vision is a statement outlining the expected Strategic Result for each activity. The vision is supported by **four community well beings and four Council Outcomes**.

COMMUNITY OUTCOMES	Cultural Wellbeing <i>Valued and cherished community</i>	Social Wellbeing <i>Safe, supported and well-led community</i>
	Economic Wellbeing <i>Strong and prosperous economy</i>	Environmental Wellbeing <i>Protected and healthy environment</i>

From these community outcomes, activity specific objectives and Level of Service statements are derived. Associated performance measures and targets allow for a monitored achievement of Council's contribution towards those community outcomes.

The Three Waters contribution to the Community Outcomes are shown below.

Community Wellbeing	Community Outcomes	Water Contribution	Wastewater Contribution	Stormwater Contribution
Oranga Social	Safe, supported and well-led community	A well-managed water supply results in a quality service for our community. Constant monitoring of water quality ensures a healthy standard is maintained.	A well-managed wastewater disposal system ensures the safe hygiene of the community.	Flooding is considered a health hazard, which an adequate stormwater system can alleviate.
Ohanga Economic	Strong and prosperous economy	Water is considered to be an integral part of being prosperous.	Provision is made for the ability to create business growth around the disposal of waste.	The stormwater infrastructure can support the economy by ensuring flooding has a minimal effect on business operations.
Ahurea Cultural	Valued and cherished culture	Council continues to develop Three Waters management models in collaboration with local hapu/iwi taking into account cultural values.		
Taiao Environmental	Protected and healthy environment	Constant monitoring ensures the provision of the water supply takes environmental considerations into account.	Recognition that wastewater can cause harm to the environment if not managed properly.	Compliance with legislative requirements and involvement of key stakeholders ensure the environment is at the forefront of decisions involving stormwater.

2.3.2 INFRASTRUCTURE CONTEXT

Our people

Wairoa is home to **8,670** people (estimate as at 30 June 2020) and has the highest proportion of Māori of any local authority area in the country, with approximately **65.7% of the district's people being of Māori descent**. This is significantly higher than New Zealand average Māori population of 16.5%.

Statistics New Zealand predict that the population of the district will increase to 9,130 in 2051 (under the medium growth projection).

Our communities

While Wairoa township is the primary service area for the district there are a large number of other smaller rural communities throughout the district. Smaller settlements are scattered throughout the districts and include Frasertown, Tuai, Māhia, Raupunga, Nūhaka, Maungataniwha, Ruakituri, Mōrere and Whakaki.

It is expected that growth, if any, will occur in Māhia, as it is a desirable location for holiday homes and more people are retiring and returning to the area. It is relatively affordable for coastal property.

Our culture

20% of Wairoa's population speak te reo Māori. Māori communities and Marae are located throughout the district, and many of these communities are in isolated parts of the district, with limited access opportunities.

The tangata whenua of Wairoa and their culture and traditions have special relationships with their ancestral lands, water, sites, waahi tapu and other taonga. Some activities and developments can have significant adverse effects on these relationships. Council plays an integral part in promoting and encouraging Māori culture and values and ensuring this remains central to key decision making, including within the transportation activity.

The Māori Standing Committee acts as a check and balance on Council processes, especially on those matters requiring a Māori perspective. Recommendations from the Māori Standing Committee will be communicated through the Chair and will be given due consideration by the Council when making decisions that directly impact on Māori and on all matters that require the perspective of Māori.

Our geography

Area: 4,119 square kilometres, with approximately 130 kilometres of coastline.

Topography: The majority of the district is hill country merging with mountains in the west, often dissected with gorges. Areas of coastal and river flats of versatile soils give greater variety to the landscape.

Rivers: The rivers within the Wairoa district are treasured by tangata whenua and our communities as sources that nourish and sustain us. They hold large cultural significance to the local Ngāti Kahungunu Iwi as places for many cultural practices such as ceremony and kai gathering. The Wairoa River and its tributaries supply the fresh drinking water for the town of Wairoa. There are ongoing environmental issues with the water quality in the Wairoa river, such as raw sewage spillages, nitrates from dairying and pastoral farming. Slow responses to water quality issues has impacted on aquatic wildlife habitats, e.g. tuna.

Our climate

Wairoa district receives the highest levels of rainfall out of the territorial authorities in the region. Over the next 30 years Council expects to see an increase in the frequency and intensity of storm events and droughts. Flooding continues to be a major hazard in Wairoa with many lowland areas, including the Wairoa township, at risk.

Climate change is already potentially irreversibly affecting our natural systems, and we can expect more severe effects on our Three Waters network as the change continues. **Increased frequency of intense rainfall events** is expected to increase river

turbidity therefore impacting our ability to make drinking water. It will also have a significant impact on stormwater systems and their capacity requirements to cope with increased rainfall. Erosion, predominantly in steep hill-country areas, may also result in soil loss is likely to impact the quality of water in our waterways. This will impact on the provision of safe drinking water, the disposal of wastewater and stormwater.

Our economy

Economic Development is viewed as a vital element in keeping the Wairoa District alive and thriving, both now and into the future. The economy of Wairoa is based on the rural sector. Approximately 60% of the total land is in productive use, of which some 48% is in pasture. Sheep/beef farming and related processing, and forestry are the leading rural production industries in Wairoa district.

AFFCO, a key employer in the town, is commercially dependent on high drinking water standard. When AFFCO is operating, **75% of the water produced is used by the AFFCO plant**.

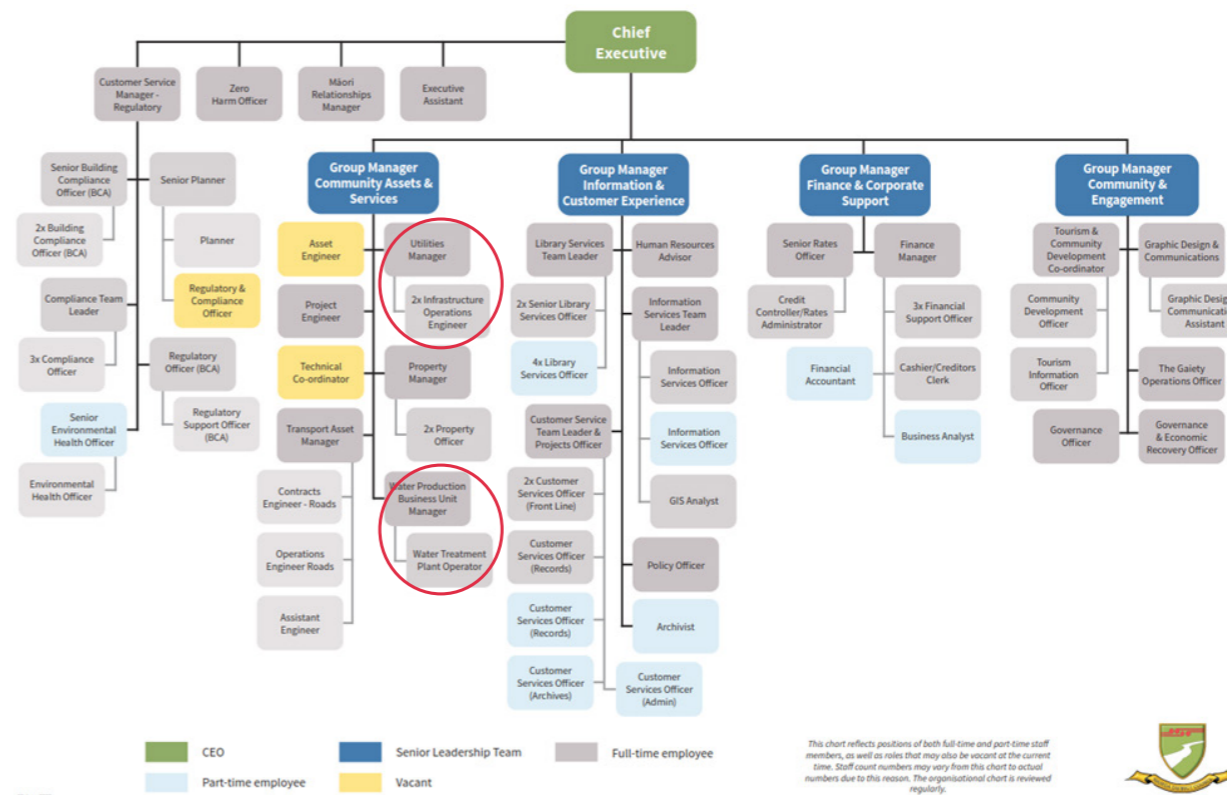
2.3.3 OUR TEAM

Our Community Assets & Services Team delivers core services, including Three Waters, to our community. The Three Waters Team report to the Group Manager, Community Assets & Services who is part of the Senior Leadership Team.

Our team provides management and engineering services to deliver all asset-based activities. We are supported by professional services providers who provide planning, technical design and asset management support. The physical works required to deliver the services and assets are completed through various short and long term physical works contracts.

Our Three Waters team also work closely with other Council service areas, including transportation, open and built spaces, waste management and the airport, to deliver all community services in a coordinated and efficient way.

WAIROA DISTRICT COUNCIL - ORGANISATIONAL CHART



2.3.4 OUR KEY PARTNERS, STAKEHOLDERS & CUSTOMERS

Our key partners are those groups or organisations that we are aligned with as owners of the Three Waters issues in our region and district.

Our key stakeholders are those groups or individuals who can help us to focus our strategic planning on the right things. They have information and knowledge to help us make better decisions. They may not use the schemes directly, but they have an interest in how they are operated and managed.

Our customers are people who use our Three Waters services.

In terms of setting the strategic context and direction for the AMP our key partners and stakeholders and their reason for involvement are shown in the tables below.

Our key partners

Partners	Knowledge/Involvement
Government agencies (Ministry of Health, Ministry for the Environment)	Set policy, legislation and regulations, which Wairoa District Council must comply with. This provides a key input into the Levels of Service provided. The latest Ministry of Health Audit shows full compliance for Wairoa's water supply.
Hawke's Bay Regional Council	Provide regional strategy, policy direction and resource consent process.
Hastings District Council, Napier City Council, Central Hawke's Bay District Council	The Hawke's Bay Councils are working together to review the current and potential service delivery options for Three Waters for all of Hawke's Bay. The Councils' strategic priority for the 2019-22 triennium is water safety, security and planning.
Gisborne District Council	Neighboring RCA with whom we have a strong strategic alignment.

Our Māori stakeholders

Council acknowledges the inclusion and importance of mātauranga Māori in its infrastructure design and implementation processes. Council is committed to meaningful engagement with Māori on issues that are pertinent to all parties and working together to agree on the best pathway forward for the community and the environment.

Stakeholder groups	Full list of stakeholders
Iwi	Ngāti Kahungunu Ngāti Pāhauwera Ngāi Tūhoe Ngāti Ruapani Ngāti Rakaipaaka Rongomaiwahine
Post-Treaty Settlement Governance Entities (PSGE) – Treaty Partners	Ngāti Pāhauwera Development Trust Tu Uru Taumatua (Tūhoe) Tātau Tātau o Te Wairoa Trust (including Tripartite Agreement and Matangirau Reserve Board)

Stakeholder groups	Full list of stakeholders
Mandated Iwi Authority (Resource Management Act 1991)	Ngāti Pāhauwera Development Trust Tātau Tātau o Te Wairoa Trust Te Rākatō Marae Te Iwi o Rakaipaaka Incorporated/Trust Ngāti Kahungunu Iwi Incorporation (NKII) Te Uru Taumatua (Ngāi Tūhoe) Rongomaiwahine Iwi Trust (to be confirmed by TPK)
Mandated Iwi Organisation (Māori Fisheries Act 2004)	Ngāti Kahungunu Iwi Incorporation (NKII) Te Uru Taumatua (Ngāi Tūhoe)
Māori Boards / Māori Committees / Tribal Authority	Wairoa Waikaremoana Māori Trust Board Waikaremoana tribal Authority – representing interests for Ngāi Tūhoe Ngāti Kahungunu (Wairoa Taiwhenua) Incorporated – representing the interests of NKII Ngāti Ruapani ki Waikaremoana – representing the interests of Ngāti Ruapani (Treaty Claim) Kahungunu Executive (Māori health and social services) Te Whare Māire o Tapuwae (Whānau Ora) Māhia Māori Committee (Rongomaiwahine) Rongomaiwahine Iwi Trust – representing the commercial interests of Rongomaiwahine Whakaki Lakes Trust Whakaki Lands Trust
Māori Land Blocks	Including Māori trusts, whanau trust (including Ahu Whenua Trusts), farm blocks (stations, etc.)
Marae	Wairoa District Council Māori Standing Committee (representing all 39-operational marae) Ngāti Kaungunu (Wairoa Taiwhenua) Incorporated Kahungunu Executive (Māori Executive Committee) Wairoa Waikaremoana Māori Trust Board Māhia Māori Committee (Representing all marae in Rongomaiwahine) All marae within the Wairoa district
Māori Community at Large	

Other Stakeholders

Stakeholders	Knowledge/Involvement
Mayor and Councillors	Setting strategic outcomes, reviewing rates impact and ensuring customer satisfaction.
Community Boards	Interested in specific projects in their area, Levels of Service, and rates impact, and working with community groups.
Contractors: Quality Rooding & Services, Fulton Hogan	Provide maintenance and management services to Council. Have valuable history of knowledge of the network. Council are working to collaborate more with Contractors and involve them in planning and decision making to deliver the best outcomes.
Developers	Ensure any new development meets legislative & Council requirements.
Adjoining land owners and users	Impact on Level of Service, particularly land run-off conditions.
Utility Owners (Chorus, Eastland Network, Crown Fibre Holdings etc)	Bi-monthly utility operations meetings, discussing FWP's & co-ordination of projects.
Department of Conservation	Co-located management i.e. Whakamahia Recreational Reserve.
Up-Stream Wairoa Inc.	A business action group focused on Economic Development in Wairoa. Council & Up-Stream co-manage projects, which are initiated & fundraised by the group with the asset transferred to Council once completed.
Other recreational groups such as Fish and Game etc.	

Our customers

Customer group	Key service focus
Households	Water supply activity on such factors as taste, colour, odour and continuity of supply.
AFFCO	When AFFCO is operating, in the order of 75% of the water produced is used by the AFFCO plant.
Community services – hospital, schools etc	Water supply activity on such factors as taste, colour, odour and continuity of supply.
Industrial users	Cost and the availability of an additional supply for firefighting or pressure.
Commercial and business users	Cost and the availability of an additional supply for firefighting or pressure.
Recreation providers – swimming pool etc	Water supply activity on such factors as taste, colour, odour and continuity of supply.
Visitors to the District	Water supply activity on such factors as taste, colour, odour and continuity of supply.

2.3.5 OUR LOCAL STRATEGIES AND PLANS

Council strategies, plans	Linkages to Three Waters
Long Term Plan (LTP)	<p>The LTP is the key planning document for Council and describes how Council will fulfil its responsibilities under the Local Government Act (LGA) 2002 to promote the well-being of the district and enable democratic decision making.</p> <p>The LTP outlines the Community Outcomes and land transport Level of Service (including associated customer performance measures) the Council seeks to achieve, which this AMP links back to. The LTP is to be adopted by June 2021 with reviews triennially.</p> <p>The LTP outlines the Community Outcomes and Three Waters Levels of Service the Council seeks to achieve, which this AMP links back to.</p>
Infrastructure Strategy 2021-2051	<p>The 2021-2051 Infrastructure Strategy provides guidance on key district infrastructure issues that need to be at the forefront of infrastructure planning and decision-making. They are:</p> <ul style="list-style-type: none"> • Legislative and policy change • Land use change • Affordability • Economic development • Climate change • Servicing Māhia • Resilience
Water Safety Plans (WSPs)	<p>WSPs are documents that aim to assess and manage risks to the safety of drinking water associated with that drinking water supply.</p> <p>They are required for all schemes that service more than 500 people. However, Wairoa has WSPs in place for all water supply schemes.</p>
A Wairoa Journey Together: Covid-19 Economic Recovery	Tātau Tātau o Te Wairoa, Ngāti Pāhauwera Development Trust and Wairoa District Council have come together to develop a community driven, aligned, focused, and coordinated socio-economic response to COVID-19 supporting the Wairoa region, its communities, and peoples.
Procurement Strategy 2020	Outlines procurement objectives and legislative requirements to ensure value for money, transparency and fairness, accountability and integrity, and sustainability.
Long Term District Planning, Demographic and Economic Growth Directions, 2018-2048	This report completed by Economic Solutions Ltd was developed in December 2017 and provides key insights into economic development and growth over the 2018-2028 LTP period, and beyond. It provides context and direction for potential future Wairoa district transport impacts. This response focuses on immediate actions, employment, short and long term projects, that address the current response and align with the aims of Wairoa.
Economic Development Strategy	This document provides key strategy for economic development in the district. It outlines Wairoa's current and future economic prospects and goals for further economic development and population growth.
Māori Policy 2012	<p>This policy provides a foundation for establishing processes that provide for tangata whenua to contribute to Council's decision-making responsibilities.</p> <p>Establish a relationship between Wairoa District Council and tangata whenua to achieve mutually beneficial outcomes for the community of Wairoa.</p> <p>Set up processes and procedures that facilitate effective communication between Wairoa District Council and Tangata Whenua o te Wairoa.</p> <p>Enable a Māori world view to be incorporated into local government decision making, policies and procedures.</p> <p>Improve the degree to which Māori participate in Council/community consultation.</p>
District Plan	The Plan sets out the framework for the sustainable management of natural and physical resources in the Wairoa District. It gives key guidance on land use, changes and effects, as well as natural resource management impacting on land transport considerations.

Council strategies, plans	Linkages to Three Waters
Annual Plan	The Annual Plan provides details on the current year's financial predictions and budgets, in accordance with the current LTP. It primarily describes the projects for a single year, however, it may give some indication of projects for subsequent years.
Annual Report	The Annual Report details achievements against performance measures and targets set in the Annual Plan.

2.4 STRATEGIC ASSESSMENT

This section outlines the need for investment. It defines the key issues and challenges facing our region and our district, the evidence base for these issues and the benefits of investing to address them.

2.4.1 KEY ISSUES & CHALLENGES FACING OUR REGION

Councils face the same or substantially the same issues and need to address these challenges in an affordable, coordinated way that eliminates duplication and ensures that all Councils and their communities have access to the appropriate strategic capacity and capability to do so. Four key themes that are based on shared challenges and opportunities:

Maintaining and improving the condition and performance of infrastructure

All four Hawke's Bay Councils have identified in their 30 year Infrastructure Strategies, similar challenges around:

- **Managing growth and demand:** for extensions to existing supplies or supply challenges
- **Asset condition and performance:** driving renewal of aging infrastructure
- **Resilience:** to respond to floods, slips, infiltration and coastal inundation
- **Risk and compliance:** meeting increasing standards in the provision of Three Waters service

Ensuring the right capability and capacity

There is a shortage of specialist resources for Three Waters across New Zealand and internationally. Hawke's Bay's Councils are

already finding it difficult to fill certain roles and attract the skills they need. Councils compete with each other for talent and the smaller Councils require people who must be able to cover a broad range of duties aside from their specialist area.

As water reforms occur across New Zealand there is likely to be increased competition to attract and retain the specialist skills in water that are necessary to enhance delivery.

Ensuring a meaningful role for Māori

The kōrero with the Hawke's Bay Māori committees revealed their frustration with the current model for Three Waters services delivery. The principles that were developed through engagement with the Māori committees demonstrate the significance that Māori place on water and their expectations.

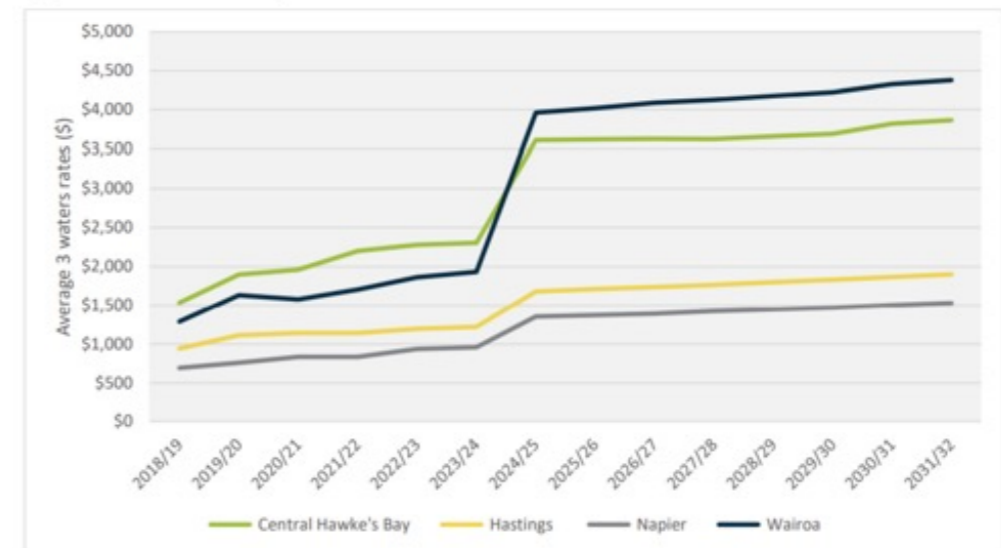
Te wai, he taonga i tuku iho mai i ngā tipuna – water is a taonga, a precious treasure passed down from our ancestors.

The chairs of the Māori committees were clear that a meaningful role for Māori starts with the opportunity for partnership, co-governance and co-design in a new model and how it operates. Their view was that the status quo is not a sustainable option.

Community affordability

The enhanced status quo projection highlights that all the Councils face significant increases in three water rates over the next five years in order to meet new requirements. However, a combination of already high water rates, significant future investment requirements and a small rating base could see the average three water rate rise to over \$4,000 per household in Wairoa.

Figure 4 Enhanced status quo: estimated future costs



Source: Morrison Low

When the impact of the future investment required across the region is considered alongside the differences in the communities, the issues regarding affordability are magnified. The international affordability metrics for water and wastewater cited by Water New Zealand consider a range of spending between 2% to 5% of household income on water and wastewater as being unaffordable. The current affordability challenge with the future projection shows that at 2032 Wairoa exceeds the highest benchmark of 5%.

2.4.2 KEY ISSUES & CHALLENGES FACING WAIROA

While the regional challenges above are very much applicable for Wairoa, we have further refined these within our local context, to five clear problem statements, which provide the focus for investment planning in this AMP.

In order to address the five key problems identified for Wairoa, we have identified a number of Strategic Objectives we want to achieve as an outcome of addressing these. We have also identified key Strategic Responses that we will use to drive change to achieve these objectives.



Problem	Evidence	Investment Objective	Key Strategic Responses	Benefits of Investing	Link to Community Outcomes
Compliance Water reform, legislation, resource consents and legacy issues requiring higher compliance results in increased costs for the community	Water reform Implications from water reforms on service delivery, including the impact of a water regulator and changes to legislation are relatively unknown and may impact on Levels of Service and structural changes. However, it will be a stricter regime with higher compliance requirements.	Compliance with water reform legislation	Collaborative Regional approach to water reform Council will continue to collaborate with Hawke's Bay Council's as we navigate the national reform programme impacts. Council will need to formally decide whether to opt-out of the reform. Targeted renewals and improvements Plan and budget on the basis of increased costs to meet legislative change.	Sustainable Level of Service Services provided will comply with legislation in the most cost effective way possible.	Safe, supported and well led community
	As the Government's three-year reform programme progresses, more certainty will be given to Government's starting intention is to reform Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. The impacts of reform can then be considered and revaluated within the next AMP review in 2024.	Affordable Level of Service			
	Resource consents Four resource consents need renewing during the 10 year planning period, including Wairoa wastewater discharge consent renewal and stormwater global consent which are underway. Requirements to prepare each resource consent may increase (e.g. environmental impact assessments). New consent conditions will likely require more monitoring increasing the overall operational costs. Additional capital expenditure may also be required to meet new consent conditions.	Compliance to meet consent conditions & Levels of Service	Proactive planning for consent renewal Allocate funding and resourcing to secure new resource consents and monitoring of conditions. May need to be considered in the light of any national approach to the delivery of Three Waters. Council is preparing a global resource consent application to address all public stormwater systems in Wairoa township.	Compliant service delivery Keeping resource consents current means no disruption to service to customers and better health and wellbeing of community	Safe, supported and well led community

Problem	Evidence	Investment Objective		Key Strategic Responses	Benefits of Investing	Link to Community Outcomes
Compliance Water reform, legislation, resource consents and legacy issues requiring higher compliance results in increased costs for the community	Legacy issues <i>Water Supply</i> <ul style="list-style-type: none"> Almost 80% of the water supply network is between 10 and 50 years old. 30% of assets in very poor and poor condition. Network failures result in interruptions of service. Water loss management, while improving, continues to be a focus. Leaking pipes can cause property and infrastructure damage. <i>Wastewater</i> <ul style="list-style-type: none"> About half of the wastewater network is greater than 50 years old. Inflow and infiltration is a known wastewater asset performance issue for the district's wastewater network. <i>Stormwater</i> <ul style="list-style-type: none"> About two thirds of the stormwater network is greater than 50 years old. Asset condition has not been assessed for the stormwater network to date. 	Improve asset knowledge for key decision making		Collate data for critical assets Invest in condition assessments of our assets, particularly older networks. Continue with existing leakage management including detection using drones.	Optimised decision making Data will be used in optimised decision making based to ensure appropriate renewals programmes.	Strong and prosperous economy
		Affordable Level of Service		Targeted renewals and improvements Continue to undertake reticulation renewals particularly where assets are deemed critical to community well-being. Universal water metering in urban areas.	Improved network resilience Reduced impact of system vulnerabilities reducing the risk of service disruption due to unexpected outages Sustainable water use Accurate water usage data can be used to promote sustainable water use.	Strong and prosperous economy
Climate Change Higher frequency / intensity of rainfall events results in increased pressure on existing infrastructure capacity	Wairoa receives the highest level of rainfall in the region raising river levels and increasing the sediment load carried in the rivers impacting river turbidity therefore our ability to make drinking water. This makes the drawing and treatment of water more difficult and requires regular attention to ensure the provision of safe drinking water. Council has riverbank erosion and stabilisation issues at its water intake point on the Wairoa River which is requiring further investment to secure access to the water supply for Wairoa and Frasertown. Flooding is a major hazard in Wairoa. Existing stormwater infrastructure may not have capacity to cope with additional rainfall.	Improve resilience to climate change impacts		Targeted renewals and improvements Identify assets at risk to enable appropriate contingency plans and work programmes to be put into place. Upgrade infrastructure to cope with climate change impacts on source. Pipes will be increased in capacity to cope with projected climatic variations as they are replaced, or new infrastructure is installed.	Improved network resilience Reduced impact of system vulnerabilities reducing the risk of service disruption due to unexpected outages	Strong and prosperous economy
Water Supply Single source of water supply (Wairoa River) results in conflicts with cultural priorities and increased costs for alternate supply	Resource consents are necessary to take water from the environment. Water takes are monitored regularly for compliance with resource consents. Wairoa River is the primary water source for the Wairoa township and Frasertown. As stated above increasing sediment load carried in the river makes the drawing and treatment of water more difficult.	Improve resilience to climate change impacts		Identify an alternative water supply for Wairoa Identification of an alternative water source to avoid reliance on the Wairoa River. Preferred option is purchase mobile treatment plant to provide additional treatment for high risk areas (i.e. Wairoa Bridge, Frasertown Plant, Tuai Plant).	Improved network resilience Reduces over-reliance on the Wairoa River as only source of water and increases resilience.	Strong and prosperous economy Protected and healthy environment
Waste Water Disposal Single point of wastewater disposal (Wairoa River) results in conflicts with cultural priorities and increased costs for alternate disposal	Community and iwi do not want the wastewater discharged into the river. Government's freshwater reforms to clean up the nation's waterways, are likely to lead to higher discharge standards for wastewater, and greater treatment of stormwater. Sludge from the wastewater treatment plant is disposed of at the Wairoa Landfill, with 12,000 tonnes of sludge expected over the next 30 years at a cost of approximately \$1.3m. High percentage of customers not very satisfied (20%).	Compliance to meet consent conditions & Levels of Service		Identify an alternative option for wastewater disposal Develop a staged approach to an alternative disposal method of wastewater to land and obtain resource consent. The intention is to transition over time to land discharges (irrigation) which will also require storage ponds to be built for holding treated wastewater during winter so it can be irrigated in summer or discharged to the river when it is flowing faster. There are a range of options for each aspect of the broader package which require integrated decision-making processes.	Improved freshwater quality Better quality water in our river and an outcome that aligns with Māori values and community aspirations	Protected and healthy environment Valued and cherished culture
Māhia Stormwater Growth in Māhia results in increased pressure on existing stormwater infrastructure capacity	There is limited formal stormwater infrastructure in Māhia, where growth is anticipated. The existing stormwater assets are privately owned.	Affordable Level of Service		Targeted renewals and improvements Develop formal stormwater system progressively to manage growth and mitigate environmental risk from more runoff.	Improved network capacity	Protected and healthy environment

3. DEFINING LEVELS OF SERVICE

3.1 OVERVIEW

This section defines the Levels of Service customers can expect from Council and the measures that are used to identify Council's performance in delivering them.

This section outlines the following:

- Key drivers for Levels of Service (legislation requirements and engagement with customers to understand needs)
- Current Levels of Service and how they are measured
- Future changes to the Levels of Service.

It must be noted that for Three Waters activities the required Levels of Service are substantially defined by legislation or regulation so the opportunity for significant changes through community consultation is limited.

3.2 LEGISLATIVE REQUIREMENTS

The AMP acknowledges Council's responsibilities to act in accordance with legislative requirements that impact on the goals and objectives for the maintenance and future development of Council's Three Waters assets. Compliance with all statutory requirements is essential for Council's integrity and continued access to government funding. Accordingly, a comprehensive knowledge and application of legislative requirements is vital to Council's business.

The table below details a summary of relevant legislative requirements that affect the Three Waters activity.

Legislation/Standard/Policy	Description of Requirements
Local Government Act 2002 and its Amendments	Sections 10 and 11 of the Local Government Act (LGA) 2002 state the purpose of local government is to meet the current and future needs of communities through efficient and effective local network infrastructure, that is appropriate for present and anticipated future circumstances. This includes drinking-water, wastewater and stormwater. Council is required to maintain water supply services under Section 130 of the LGA.
Drinking-Water Standards New Zealand (DWSNZ) 2005 (Revised 2018)	<p>The Drinking-Water Standards for New Zealand provide requirements for drinking-water safety by specifying the:</p> <ul style="list-style-type: none"> • Maximum amounts of substances or organisms or contaminants or residues that may be present in drinking-water • Criteria for demonstrating compliance with the Standards • Remedial action to be taken in the event of non-compliance with the different aspects of the Standards. <p>It now requires routine monitoring of total coliforms; and enumeration testing for E.coli and total coliforms.</p> <p>Any gaps between the DWSNZ and water quality must be managed through a Water Safety Plan (WSP). This plan identifies each risk and how it will be managed to protect public health.</p>
Health Act 1956 Health (Drinking Water) Amendment Act 2019	<p>Water suppliers must:</p> <ul style="list-style-type: none"> • Register their supply • Monitor their water • Implement a Water Safety Plan • Ensure an adequate supply and take reasonable steps to protect the source <p>The latest amendment of the act amends/deletes references to taking 'all practical steps' to comply with the DWSNZ. Section 69V now outlines the Duty to comply with drinking-water standards. This act also gives local authorities the responsibility for collection and disposal of domestic sewage.</p>
Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (Freshwater NES)	<p>The Freshwater NES set requirements for carrying out certain activities that pose risks to freshwater and freshwater ecosystems. Anyone carrying out these activities will need to comply with the standards.</p> <p>Councils are required to implement the Freshwater NES in their policies and plans as promptly as is reasonable in the circumstances, so that it is fully completed by no later than 31 December 2025. Full implementation of the Freshwater NES's policies has been extended out to 31 December 2030 in Hawke's Bay.</p>

Legislation/Standard/Policy	Description of Requirements
Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007	<p>The National Environmental Standard for Sources of Human Drinking Water sets requirements for protecting sources of human drinking water from becoming contaminated.</p> <p>As part of the Government's Three Waters Review, they are proposing amendments to the Sources of Human Drinking Water NES. The aim is to strengthen the ability of regional Councils and territorial authorities to manage risks to drinking water posed by activities in drinking water catchments. Proposed amendments to the NES will be further consulted on in 2021.</p>
Resource Management Act (RMA) 1991	<p>The RMA is New Zealand's primary environmental protection legislation which is mainly administered via resource consents.</p> <p>Through the RMA, Council manages the effects of activity on the environment. This includes the discharge of wastewater and stormwater and the taking of water. These are often consented with various conditions.</p>
Health & Safety at Work Act 2015	The main purpose of the Act is to provide for a balanced framework to secure the health and safety of workers and workplaces.
Land and Subdivision Infrastructure (NZS 4404:2010)	Provides criteria for design and construction, including requirements for stormwater, wastewater, water supply, landscape, and network utility services. The Standard incorporates up-to-date design principles such as low impact design (LID) solutions to stormwater management, and urban design principles that encourage more sustainable places, spaces, and networks in towns and cities.
National Policy Statement on Urban Development 2020	<p>The NPS-UD 2020 recognises the national significance of:</p> <ul style="list-style-type: none"> • Having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future • Providing sufficient development capacity to meet the different needs of people and communities.
Civil Defence Emergency Management Act 2002	The Civil Defence Emergency Management Act 2002 creates a framework within which New Zealand can prepare for, deal with, and recover from local, regional and national emergencies.
Fire and Emergency New Zealand Act 2017	The Act provides for the creation of a single fire service organisation for all rural, urban, paid and volunteer firefighters. This organisation is the existing Fire Services Commission renamed "Fire and Emergency New Zealand" (FENZ) and is provided with a significantly wider range of functions, duties and powers.
Hazardous Substances and New Organisms Amendment Act 2015	This act defines those substances that are hazardous. This act and regulations also control the import, manufacture or use (including disposal) of hazardous substances.

Other guidelines and Code of Practice include:

- NZ Fire Fighting Water Supplies Code of Practice 2008 (SNZ PAS 4509:2008)
- Backflow Code of Practice for Water Suppliers.

3.2.1 RESOURCE CONSENT REQUIREMENTS

Consent for Three Waters activities involve mostly the abstraction of water supplies and the discharge of treated wastewater. The renewal of resource consent is one of the more significant challenges for the Council. Monitoring is undertaken by Council staff and consents is issued by Hawke's Bay Regional Council.

Water supply consents

Resource Consents are based on abstraction from a water source and discharge contaminants as detailed in the table below.

Scheme	Number	Type	Description	Expiry Date
Frasertown	AUTH-119824-01	Water Permit	To take water from the Waiau River to supply municipal water to Wairoa township. While this consent renewal is outside the 10 year financial forecast period, the consent renewal process will need to commence at least 12 months prior to expiry. This has been allowed for in this AMP.	31/05/2032
	AUTH-118809-02	Water Permit	To take water from a spring to provide a public water supply to Tuai. <i>Consent renewal has been allowed for in this AMP.</i>	31/05/2024
Tuai	AUTH-119825-01	Discharge to Water	To discharge contaminants (filter backwash from a settling tank and filtered water from the filter press) from the public water supply treatment process into a tributary of the Kauhauroa Stream. <i>While this consent renewal is outside the 10 year financial forecast period, the consent renewal process will need to commence at least 12 months prior to expiry. This has been allowed for in this AMP.</i>	31/05/2032

Wastewater Consents

The status of the Council's current wastewater resource consents are detailed in the table below. Those expiring within the next 10 years are highlighted.

Scheme	Number	Type	Description	Expiry Date
Wairoa	AUTH-107264-01	Sewage - Secondary Treated	To discharge treated sewage effluent from the Wairoa sewage treatment plant into the Wairoa River estuary. <i>Council is in the process of renewing their wastewater discharge consent for the Wairoa Wastewater Treatment Plant. Council does not know how long the consent will be granted for; however, has applied for a 35 year term and Hawke's Bay Regional Council have recommended a 20 year term. There is likely to be a staged improvement programme and operational costs going forward.</i>	31/05/2019 Renewal underway
Tuai	AUTH-107267-02	Sewage - Secondary Treated	To discharge treated sewage effluent from a biological sand filter treatment plant into the Kahutangaroa Stream.	31/05/2034
Māhia Beach	AUTH-118701-04	Discharge Permit	To discharge contaminants (namely treated municipal domestic effluent) to land, in circumstances where those contaminants (or any other contaminants emanating as a result of natural processes from those contaminants) may enter water as a result of the spray irrigation of effluent to land, or as a result of seepage from the base of the three ponds.	20/04/2036
	AUTH-118700-01	Air Odour	To discharge contaminants (odour and aerosols) to air from the treatment plant and land application area associated with the operation of the Māhia Beach Sewerage System.	20/04/2036

Ōpoutama	AUTH-118687-02	Air Odour	To discharge contaminants (odour) to air in association with the discharge of treated wastewater to land from a community wastewater treatment system.	31/05/2035
	AUTH-118685-02	Sewage - Secondary Treated	To discharge contaminants (namely treated effluent) to land, in circumstances where those contaminants (or any other contaminants emanating as a result of natural processes from those contaminants) may enter water.	31/05/2035

Stormwater consents

There are currently no resource consents in place for stormwater. However, Council is preparing a global resource consent application to address all public stormwater systems in Wairoa township. Through this process, and as a result of the water reforms, there is

the likelihood that the quality of stormwater being discharged into the environment will need to be improved.

Consents challenges & response

Challenges	Response
<p>Resource consents</p> <p>Four resource consents need renewing during the 10 year planning period.</p> <p>Requirements to prepare each resource consent may increase (e.g. environmental impact assessments).</p> <p>New consent conditions will likely increase requiring more monitoring increasing the overall operational costs to provide service.</p> <p>Additional capital expenditure may also be required to meet new consent conditions.</p>	<p>Proactive planning for consent renewal</p> <p>Allocate funding and resourcing to secure new resource consents and monitoring of conditions.</p> <p>May need to be considered in the light of any national approach to the delivery of Three Waters.</p> <p>Council is in the process of renewing their wastewater discharge consent for the Wairoa Wastewater Treatment Plant.</p> <p>Council is preparing a global resource consent application to address all public stormwater systems in Wairoa township.</p>

3.2.2 LOCAL GOVERNMENT MANDATORY PERFORMANCE MEASURES

In 2010, the Local Government Act 2002 was amended to require the Secretary for Local Government to make rules specifying non-financial performance measures for local authorities to use when reporting to their communities. The aim was to help the public to contribute to discussions on future Levels of Service for their communities and to participate more easily in their local authority's decision-making processes. Local authorities were required to incorporate the performance measures in the development of the 2015-2025 Long Term Plans.

3.2.3 POLICIES & BYLAWS

The purpose of Council's Water Supply Bylaw, adopted in 2011, is to enable Council, as a Water Supply Authority, to provide for the supply of water to its customers. It covers Council requirements in terms of supply protection, access to the supplies and outlines enforcement of beaches to the Bylaw.

Managing trade waste well can increase the life of downstream assets and reduce the risk of blockages, overflows and damage to the network. Council's Trade Waste and Wastewater Bylaw was adopted in 2007. Council has recently employed a Trade Waste Officer.

3.3 UNDERSTANDING OUR CUSTOMERS NEEDS

Community and customer expectations are very important in determining future Levels of Service and in assessing how well Council is performing against current Levels of Service.

3.3.1 COMMUNITY ENGAGEMENT

Under the Local Government Act 2002, Council is required to consult with the community and stakeholders to identify the outcomes (goals for the present and future economic, social, cultural and environmental well-being of the district) that the community wishes to have now and into the future. The LGA Amendment Act 2014 makes no reference to community outcomes, and so these are no longer a legislative requirement. However, Council has confirmed that the community outcomes remain relevant in the delivery of core services to the community.

Various legislation (e.g. Resource Management Act and the LGA 2002) require Council to consult with tangata whenua and take into account the principles of the Treaty of Waitangi in the management of Three Waters infrastructural assets. This is particularly relevant for Wairoa District where 65.7% of the population is of Māori descent.

Long Term Plan

The Long Term Plan (LTP) places significant emphasis on the need to consult with the community and other stakeholders.

The intended process is to gather expectations of all stakeholders and then to communicate back on the cost of meeting these expectations. Through this process, an indicative understanding of

customer focus can be achieved. This will help in developing future LOS.

To better understand the cost of service versus service expectations we also complete:

- Customer satisfaction surveys annually
- Workshops/meetings on more specific aspects of service (i.e. a specific project) to better understand customer needs and wants
- Analysis of service costs against specific service expectations of community and other stakeholders and then feed this information back
- Undertake a detailed analysis of research and customer expectations to better define the links between customer and technical Level of Service.

Customer Service Request (CSR) System

Council maintains a Customer Service Request System to allow

Aspect of Service	2020		2019		2018	
	Very/Fairly Satisfied	Not Very Satisfied	Very/Fairly Satisfied	Not Very Satisfied	Very/Fairly Satisfied	Not Very Satisfied
Quality of the drinking water supply	59%	8%	57%	13%	61%	14%
Functioning of the existing sewerage system	Not measured		49%	20%	41%	33%
Functioning of the existing stormwater system	47%	20%	46%	21%	43%	33%

In comparison with Wairoa's Peer Group and the national average, there is more dissatisfaction with the sewerage and stormwater systems.

Aspect of Service	The percent not very satisfied with service		
	Wairoa	Peer Group*	National Average*
Quality of the drinking water supply	8%	14%	14%
Functioning of the existing sewerage system	20%*	3%*	7%*
Functioning of the existing stormwater system	20%	16%	16%

*2019 Result

customer comments and feedback to be recorded and managed. These results give Council some direction for prioritisation and targeted activities to undertake in their endeavour to improve public satisfaction and deliver an acceptable Level of Service.

Annual community survey

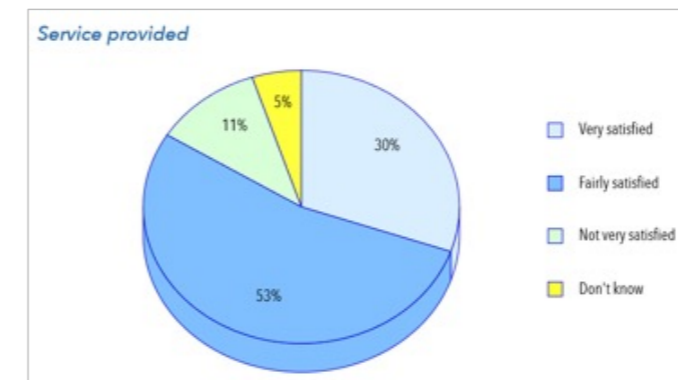
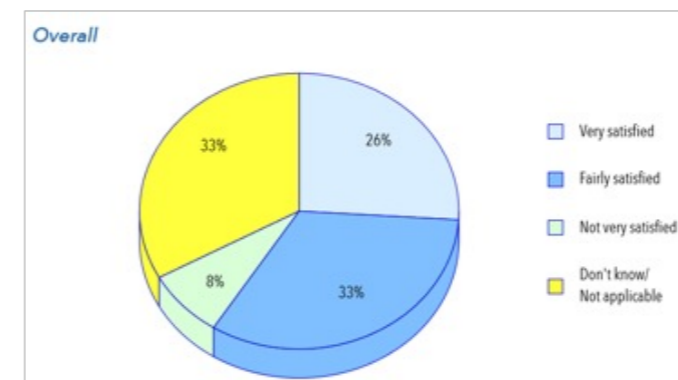
Communitrak™ is a survey undertaken by the National Research Bureau (NRB). Council has a long history of using this annual survey to assist in the assessment of customer satisfaction, and more importantly to monitor trends over time.

3.3.2 CUSTOMER SATISFACTION

The latest NRB Communitrak survey was completed in August 2020. Results from this survey are included below. There has been an increasing trend for satisfaction for all Three Waters and a reduction in the level of dis-satisfaction over the last three years.

Water Supply

54% of residents say they receive a piped water supply (59% in 2019). Those with a piped water supply are more likely to be satisfied (83%), than residents overall, while being less likely to be unable to comment (5%).



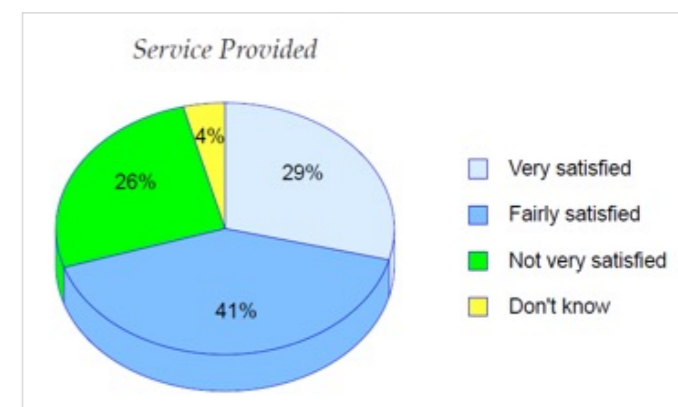
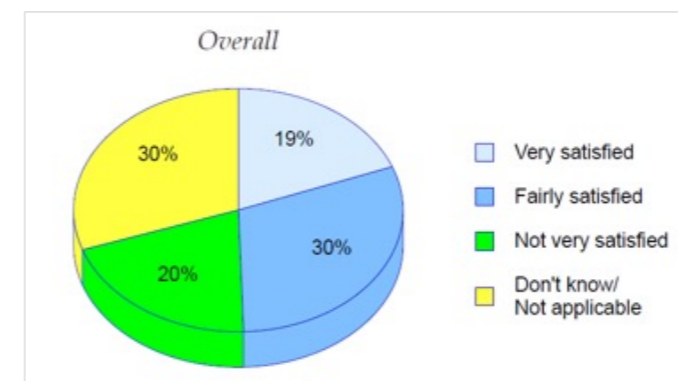
The main reasons residents are not very satisfied with the quality of the drinking water supply are:

- poor quality/dirty, mentioned by 3% of all residents,
- use a filter/boil it, 2%,
- tastes bad, 2%.

Wastewater

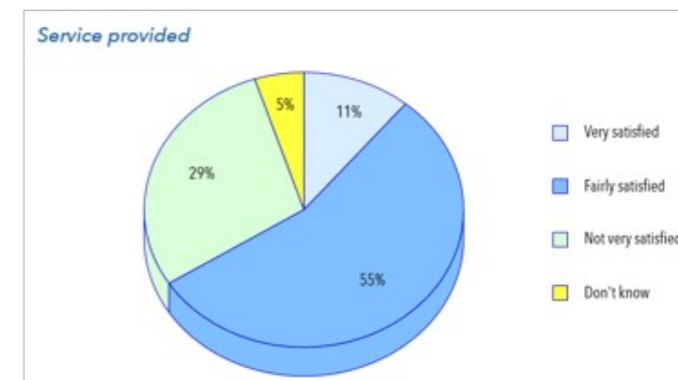
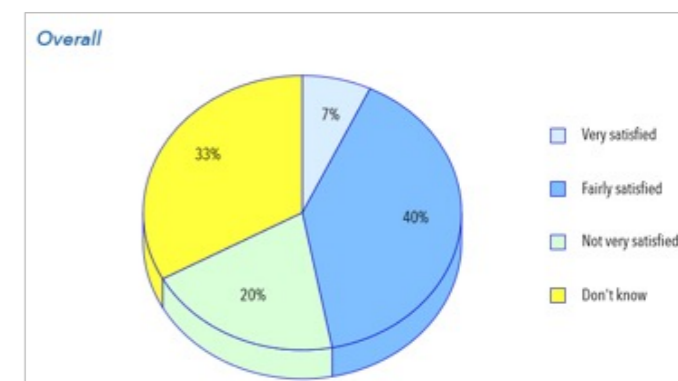
Waste water was not included in the 2020 survey. The outcomes below are from the latest available survey results (2019). 54% of residents are provided with a sewerage system. Compared to residents overall, they are more likely to be satisfied (70%), less likely to have been unable to comment (4%) and on par in terms of being not very satisfied (26%).

Level of dissatisfaction have dropped considerably from the 2019 results, however it remains relatively high at over 20%.



Stormwater

The outcomes from the survey for storm water are outlined below. 43% of residents are provided with stormwater drainage (49% in 2019) and, of these, 66% are satisfied and 29% are not very satisfied. Levels of dissatisfaction have dropped considerably from the 2018 results, however they remain relatively high at over 20%.



The main reasons why residents are not very satisfied with stormwater drainage in the district are:

- flooding/surface flooding,
- drains get blocked/need clearing/cleaning out/maintenance,
- inadequate system/needs upgrading.

Response & Key Projects

Key findings and our response to these are outlined below.

Service	Response & Key Projects
Water Supply	<p>Targeted renewals and improvements</p> <p>Continue to undertake reticulation renewals particularly where assets are deemed critical to community well-being.</p> <p>Universal water metering in urban areas.</p>
Wastewater	<p>Inflow and Infiltration Project</p> <p>Council's inflow and Infiltration project has identified areas where stormwater is entering the wastewater network which directs the future renewals programme and enable illegal stormwater connections to be addressed. The extent of inflow and infiltration of stormwater into the wastewater system during times of wet weather has significantly reduced since the Inflow project commenced.</p> <p>Unconsented Discharge of Sewerage Improvements</p> <p>At times, there have been non-compliant discharges (outside permitted hours) of treated wastewater from the treatment pond across the outfall which has resulted in Council receiving infringement notices. Wastewater treatment plant upgrade works are being completed as part of the consent renewal, in the short-term remedial works have automated discharge times.</p>
Stormwater	<p>Inflow and Infiltration Project</p> <p>Council's Inflow & Infiltration project has identified blocked stormwater laterals which has been a key reason for poor performance. Blocked stormwater laterals are being progressively cleared to address this problem.</p>

3.4 LEVELS OF SERVICE OVERVIEW

Levels of Service statements describe how Council intends to deliver the Three Waters activity to the customer. Levels of Service are used to:

- Inform customers of the existing and alternate types and Levels of Service
- Enable customers to assess suitability and affordability of the services offered
- Develop asset management strategies to deliver the required Level of Service
- Measure performance against defined targets
- Identify costs and benefits of the services provided

The key drivers of the Levels of Service are:

- **Community expectations** are established through both formal and informal research with stakeholders and users of each activity. These are covered in detail in section above.
- **Community Outcomes** as outlined in the Strategic Context Section.
- **Statutory requirements** determine the minimum Levels of Service for water activities. These are covered in detail in the Legislative Requirements Section.

The Council ensures that Levels of Service are customer focused, technically meaningful and address the issues that are important to the community. There are two types of Level of Service performance measure used by Council:

- **Customer Measure:** How the customer receives or experiences the service, e.g. “% customers satisfied with the reliability of wastewater services”. Key customer performance measures linking Community Outcomes to the planned Levels of Service.
- **Technical Measure:** What the organisation does, e.g. “the number of disruptions to service”. The water activities has a range of technical service standards. These operational measures and other technical guidelines are relevant for setting service standards for three water services.

These performance measures are based on Department of Internal Affairs mandatory performance measures (highlighted in light blue) and other performance measures to show how our Three Waters service contributes to community outcomes (white).

3.4.1 PERFORMANCE AGAINST LEVELS OF SERVICE

Performance measures are monitored and reported on annually through the Long Term and Annual Planning process.

Where possible target levels are set for each performance measure. Any non-achievement of these targets, while not favourable, gives Council the ability to focus on specific issues for resourcing improvements where necessary.

The LOS customers can expect for each activity is tabulated below. Performance against these and other key Council measures against target for the last three years is detailed below. The highlighted red, yellow and green cells indicate where Council has performed worse or better than target.

Red = target not achieved, **yellow** = close to target, **green** = target achieved.

Where there are ‘Service Gaps’ between the Level of Service provided and the target Level of Service we have outlined initiatives to address these gaps.

3.5 WATER SUPPLY LEVELS OF SERVICE

3.5.1 CURRENT LEVELS OF SERVICE

Community Outcome	Customer Outcome	Customer Level of Service	Performance Measure	Measure Type	Annual Target 2021-2024	2017/18 Actual	2018/19 Actual	2019/20 Actual
Safe, supported and well-led community	Safety	Safe, high quality water supply is provided	DIA Mandatory Non-Financial Performance Measure 1: Safety of Drinking Water Compliance with Drinking Water Standards for NZ 2005 (revised 2008): (a) Part 4 bacteria compliance criteria (b) Part 5 protozoal compliance criteria	Technical	Wairoa / Frasertown & Tuai: 100% Compliant	100%	100%	100%
		To provide reliable water networks	Council Performance Measure: Residents satisfied with the water supply Percentage of respondents who indicate they are 'very satisfied' or 'fairly satisfied' with the Water Supply expressed as a percentage (excluding 'don't know' respondents)	Customer	Sum of 'very satisfied' and 'fairly satisfied' ≥80%	81%	81%	88%
	Reliability / Quality	Water pressure and flow appropriate for its intended use	DIA Mandatory Non-Financial Performance Measure 4: Customer Satisfaction Number of complaints received by the local authority 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) responsiveness to any of these issues (expressed per 1000 connections to the local authority's networked reticulation system).	Customer	Complaints received annually shall not exceed: a) 10 per 1000 b) 10 per 1000 c) 10 per 1000 d) 20 per 1000 e) 20 per 1000 f) 10 per 1000	a) 1 b) 0 c) 0 d) 10 e) 16 f) 7	a) 0 b) 1 c) 0 d) 8 e) 11 f) 0	a) 0 b) 0 c) 0 d) 4 e) 3 f) 0
			DIA Mandatory Non-Financial Performance Measure 2: Maintenance of the Reticulation Network Percentage of real water loss from the local authority's networked reticulation system (calculated using minimum night flow).	Technical	35% (2022) 32% (2023) 30% (2024)	50% (against target of 46%)	35.33% (against target of 44%)	20.7% (against target of 42%)
Strong and prosperous economy	Financial Sustainability	Water supply assets are managed prudently to ensure long term financial sustainability for current and future generations	DIA Mandatory Non-Financial Performance Measure 3: Fault Response Times Where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times measured: a) attendance for urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site b) resolution of urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption c) attendance for non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site d) resolution of non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption.	Technical	For Wairoa / Frasertown a) 1 hour b) 4 hours c) 2 days d) 3 working days Note: targets correspond to the Three Waters maintenance contract response times for emergency works and priority works.	a) not measured b) 3.5 hours c) 3 hours d) 3 hours	a) not measured b) 24.8 hours c) 4.2 hours d) 4.2 hours	a) N/A b) N/A c) 3.9 hours d) 4.5 hours
					For other areas a) 2 hours b) 5 hours c) 2 days d) 3 working days	a) not measured b) 3.5 hours c) 3 hours d) 3 hours	a) not measured b) 24.8 hours c) 4.2 hours d) 4.2 hours	a) 0.2 hours b) 6 hours c) 3.9 hours d) 4.5 hours
Protected and healthy environment	Environmental Sustainability	Water resources are used efficiently and sustainably	DIA Mandatory Non-Financial Performance Measure 5: Demand Management Average drinking water consumption per day, per resident within the territorial authority district	Technical	530 litres per resident per day (2022) 500 (2023) 450 (2024)	535 litres (against target of 550 litres)	Not Achieved (against target of 540 litres)	291.5 litres (against target of 530 litres)

3.5.2 INITIATIVES TO ADDRESS LEVELS OF SERVICE GAPS







Performance Measure	Service Level Gap	Initiative	Desired Outcome
DIA Mandatory Non-Financial Performance Measure 1: Safety of Drinking Water	<p>Māhanga Water Supply</p> <p>Wairoa District Council faces considerable challenges to delivering long term safe potable drinking water to the Māhanga community and complying with NZ drinking water standards.</p> <p>Taumata Arowai, the new drinking water regulator, will bring a stronger focus on safe reliable drinking water and will take a stronger approach to non-compliance and lifting standards.</p> <p>Upgrade cost estimated to be a minimum of \$1million with a significant spend required to get more accurate costings.</p>	<p>Māhanga Water Supply Referendum</p> <p>A referendum on the Māhanga drinking water will be held in 2021.</p> <p>Council's duty with closing the Māhanga water supply would be to ensure the community has safe and reliable drinking water if the water supply is shut down. This would be done with rainwater tanks and filtration and UV disinfection. This could be a partnership with Council.</p>	Compliant water supply for Māhanga
	<p>Responding to Faults within Target Timeframes</p> <p>Resourcing can be an issue in terms of response times, particularly getting between various water supply schemes.</p> <p>In future, responding to faults may become even more challenging due to the spread out nature of the water supply networks in Wairoa. The travel time between Tuai Scheme and potential future Māhia Schemes could become an issue, if needing to respond to multiple faults.</p>	<p>Proactive Maintenance & Renewals</p> <p>This will ensure fewer faults occur that require reactive response to repair.</p>	

3.5.3 FUTURE CHANGES TO LEVELS OF SERVICE

The expected future changes to the Levels of Service are detailed below.

Customer Level of Service	Applicable Performance Measure	Future Change	Impact on Level of Service	Response	Timeframe
Safe, high quality water supply is provided	DIA Mandatory Non-Financial Performance Measure 1: Safety of Drinking Water	From a national context, drinking water standards continue to tighten and the future expectation of LOS regarding water quality will also be constricted.	Council will continue to increase the safety of water supplied to communities through continuing the upgrade programme of water supply and treatment upgrades.	Council intends to revise Water Safety Plans and be fully compliant with safety aspects of the NZ Drinking Water Standards.	2024 onwards
To provide reliable water networks	DIA Mandatory Non-Financial Performance Measure 2: Maintenance of the Reticulation Network	The future of environmental standards constricted hence the pressure to reduce water wastage from leakage.	Targets for water loss likely to reduce further.	Installation of accurate water metering. Reticulation renewals programme is preventative measure of water loss.	2021 – 2024
Water resources are used efficiently and sustainably	DIA Mandatory Non-Financial Performance Measure 5: Demand Management	Continued pressure to reduce overall water usage.	Targets for water usage likely to further reduce.	Investigating alternate water source.	2021 - 2024

3.5.4 THE 6 PRINCIPLES OF DRINKING WATER SAFETY

 Principle 1: A High Standard of Care	All those involved in supplying drinking water, from operators to elected decision-makers, must embrace a high standard of care. Consequences of failure can cause sickness, injury and death - as in medicine and aviation - so similar diligence and competence should apply as in these fields.
 Principle 2: Protect Source Water	As the first and most significant barrier against contamination, it is vital to understand and manage the risks to source water.
 Principle 3: Multiple Barriers	Because no single barrier is effective against all sources of contamination at all times, multiple barriers must be working to protect the water from “catchment to tap”.
 Principle 4: Watch for Change	Contamination is almost always preceded by some kind of change and change must never be ignored. Baseline conditions must be known so a change of any kind can be monitored and responded to. Changes can be environmental (rainfall, etc), equipment, governance, operational (flow rates, etc), or organisational.
 Principle 5: Personal Ownership	Knowledgeable, experienced, committed and responsive personnel provide the best assurance of safe drinking water. There must be commitment from the highest level of the organisation with responsibility for drinking water.
 Principle 6: Preventive Risk Management	The focus must always be on preventing contamination, not detecting and responding to contaminated water. A systematic assessment of risks from the catchment to tap, and identifying the ways these risks can be managed and monitored is the best approach to protecting against waterborne illness.

3.6 WASTEWATER LEVELS OF SERVICE

3.6.1 CURRENT LEVELS OF SERVICE

Community Outcome	Customer Outcome	Customer Level of Service	Performance Measure	Measure Type	Annual Target 2021-2024	2017/18 Actual	2018/19 Actual	2019/20 Actual
Safe, supported and well-led community	Safety	Mitigate risk of environmental and public health impacts	DIA Mandatory Non-Financial Performance Measure 1: System Adequacy Number of dry weather sewerage overflows from the Council's wastewater System (expressed per 1000 sewerage connections to that sewerage system)	Technical	10	1	Achieved	1
	Reliability / Quality	To provide safe and reliable wastewater service to customers	DIA Mandatory Non-Financial Performance Measure 4: Customer Satisfaction Total Number of complaints received by the Council about any of the following: a) Sewage odour b) Sewerage system faults c) Sewerage system blockages d) The Council's response to issues with its sewerage system (expressed per 1000 connections to the Council's sewerage system)	Customer	Complaints received annually shall not exceed: a) 15 per 1000 b) 15 per 1000 c) 15 per 1000 d) 15 per 1000	a) 1 b) 20 c) 31 d) 2	a) 0 b) 16 c) 13 d) 0	a) 0 b) 0 c) 6 d) 0
Protected and healthy environment	Environmental sustainability	Protection is provided to the community and the environment	DIA Mandatory Non-Financial Performance Measure 2: Discharge Compliance Compliance with Council's resource consents for discharge from its sewerage system measured by the number of: a) Abatement notices b) Infringement notices c) Enforcement orders d) Convictions	Technical	a) 0 b) 0 c) 0 d) 0	a) 0 b) 0 c) 0 d) 0	a) 2 b) 0 c) 0 d) 0	a) 0 b) 2 c) 0 d) 0
Strong and prosperous economy	Financial Sustainability	Wastewater assets are managed prudently to ensure long term financial sustainability for current and future generations	DIA Mandatory Non-Financial Performance Measure 3: Fault Response Times Where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times measured: a) Attendance time: From the time that the Council receives notification to the time that service personnel reach the site b) Resolution time: From the time that the Council receives notification to the time that service personnel confirm resolution of the blockage or other fault reach the site	Technical	For Wairoa / Frasertown a) 1 hour b) 4 hours	a) 20 hours b) 20 hours	a) Not assessed b) 3.9 hours	a) N/A b) N/A
					For other areas a) 2 hours b) 5 hours	a) 20 hours b) 20 hours	a) Not assessed b) 3.9 hours	a) 2.4 hours b) N/A

3.6.2 INITIATIVES TO ADDRESS LEVELS OF SERVICE GAPS

Performance Measure	Service Level Gap	Initiative	Desired Outcome
DIA Mandatory Non-Financial Performance Measure 2: Discharge Compliance	Two infringement notices received for discharging out of tidal time. Investigations showed old cabling was causing an issue.	Repairs & Process Automation Have completed cable upgrade and automated discharge times. Proactive Maintenance & Renewals This will ensure fewer faults occur that require reactive response to repair.	Full compliance with all consents

3.6.3 FUTURE CHANGES TO LEVELS OF SERVICE

The expected future changes to the Levels of Service are detailed below.

Customer Level of Service	Applicable Performance Measure	Future Change	Impact on Level of Service	Response	Timeframe
Protection is provided to the community and the environment	DIA Mandatory Non-Financial Performance Measure 2: Discharge Compliance	National Environmental Standard for Freshwater Full implementation of the Freshwater NPS's policies by 31 December 2030 in Hawke's Bay.	Consent requirements likely to tighten up further.	Collaborative Regional Approach Continued regional approach to determine the best service delivery for Three Waters.	2025 - 2030

3.7 STORMWATER LEVELS OF SERVICE

3.7.1 CURRENT LEVELS OF SERVICE

Community Outcome	Customer Outcome	Customer Level of Service	Performance Measure	Measure Type	Annual Target 2021-2024	2017/18 Actual	2018/19 Actual	2019/20 Actual
Safe, supported and well-led community	Safety	Mitigate risk of flooding in urban areas	DIA Mandatory Non-Financial Performance Measure 1: System Adequacy a) The number of flooding events that occur in the Councils district. b) For each flooding event, the number of habitable floors affected (expressed per 1000 properties connected to the Council network)	Technical	a) ≤10 b) ≤50	a) 14 b) 3	Not measured	a) 12 b) 0
	Reliability / Quality	To provide reliable stormwater networks	Council Performance Measure: Residents satisfied with the stormwater supply Percentage of respondents who indicate they are 'very satisfied' or 'fairly satisfied' with the stormwater service expressed as a percentage (excluding 'don't know' respondents)	Customer	Sum of 'very satisfied' and 'fairly satisfied' ≥80%	61%	71%	70%
			DIA Mandatory Non-Financial Performance Measure 4: Customer Satisfaction The number of complaints received by Council about the performance of its stormwater system (expressed per 1000 properties connected to the Council network)	Customer	Complaints received annually shall not exceed 50 per 1000	40	Not reported	29
Strong and prosperous economy	Resilience	Stormwater disruption during natural disaster events are minimised	DIA Mandatory Non-Financial Performance Measure 3: Response Times The median response time to attend a flooding event, measured from the time that the Council receives notification to the time that service personnel reach the site.	Customer	a) 1 hour for emergency event b) 2 hours for urgent event	Not reported	a) 23.9 hours b) 23.9 hours	a) N/A b) 2.4 hours
Protected and healthy environment	Environmental sustainability	Effects on the natural environment are minimised	DIA Mandatory Non-Financial Performance Measure 2: Discharge Compliance Compliance with Council's resource consents for discharge from its stormwater system measured by the number of: a) Abatement notices b) Infringement notices c) Enforcement orders d) Convictions	Technical	a) 0 b) 0 c) 0 d) 0	No consent - consent application currently underway		

3.7.2 INITIATIVES TO ADDRESS LEVELS OF SERVICE GAPS

Performance Measure	Service Level Gap	Initiative	Desired Outcome
Council Performance Measure: Residents satisfied with the stormwater supply	<p>While some customer comments are more related to drainage outside the Wairoa urban network, general feedback is that stormwater facilities are blocking up frequently.</p> <p>General feedback comments indicate that many of the streets in the town area flood too easily.</p>	<p>Community Engagement Processes Revised engagement questions to ensure more applicable responses for this measure.</p> <p>Proactive Maintenance This will ensure fewer faults occur that require reactive response to repair.</p>	Customer satisfaction meeting targeted levels

3.7.3 FUTURE CHANGES TO LEVELS OF SERVICE

There are no expected future changes to the Levels of Service, outside of any changes that may result through the national Three Waters reform programme.

4. DRIVERS FOR CHANGE

4.1 POPULATION & DEMOGRAPHIC CHANGE

The Three Waters services provided are directly influenced by the number of customers accessing these services.

The current estimated population for the Wairoa District is 8,670 people (estimate as at 30 June 2020). Statistics New Zealand have provided various prediction scenarios through to 2043, based off 2013 census data. These show general population decline. However, recent population data shows growth for Wairoa. It is expected that Wairoa's population will remain relatively static over the duration of this plan.

It is expected that growth, if any, will occur in Māhia, as that is a desirable location for holiday homes and more people are retiring and returning to the area. It is relatively affordable for coastal property.

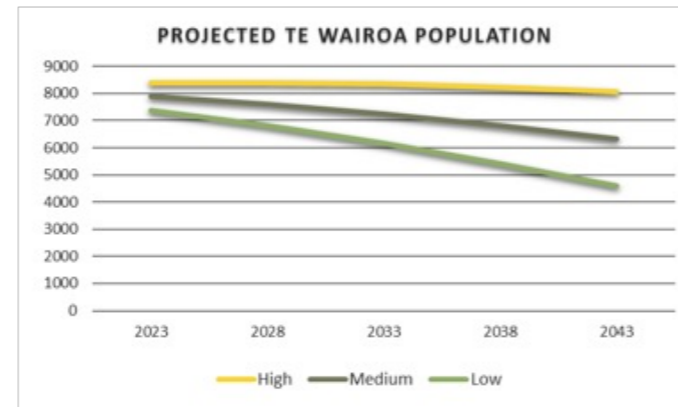
An assessment of the change in demographics of the population will also need consideration. Statistics suggest that by 2028, 1 in 5 Wairoa residents will be over the age of 65. As the workforce declines and people move to retirement incomes, the ability to fund cost increases can reduce.



Comparison of Current Cost Service

	Central Hawke's Bay	Hastings	Napier	Wairoa
Average Three Waters residential rate	\$1,664	\$759	\$686	\$1,123
Affordability of water and wastewater	2.7%	1.1%	1%	2.1%

With a small rating base and higher ability to pay challenges, Council needs to think more broadly about how to fund its infrastructure programme. This will therefore challenge Council to look for alternative funding sources.



4.1.1 AFFORDABILITY

Population and socio-economic depravity indicators have a significant impact on affordability of the Three Waters activity, with limited ability for the ratepayers to finance any increases in Three Waters maintenance and renewals costs.

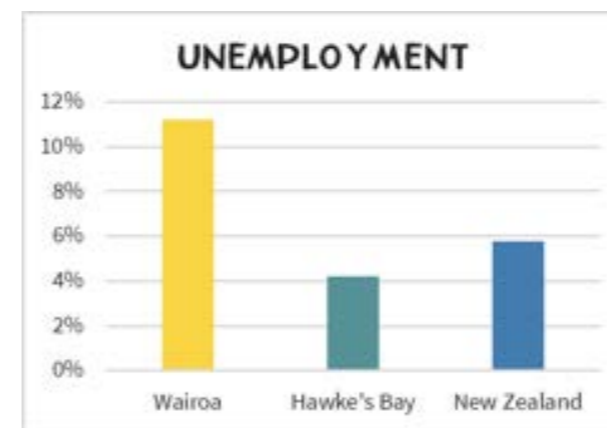
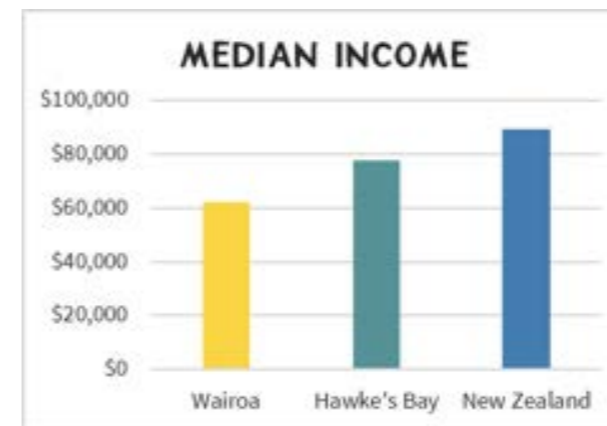
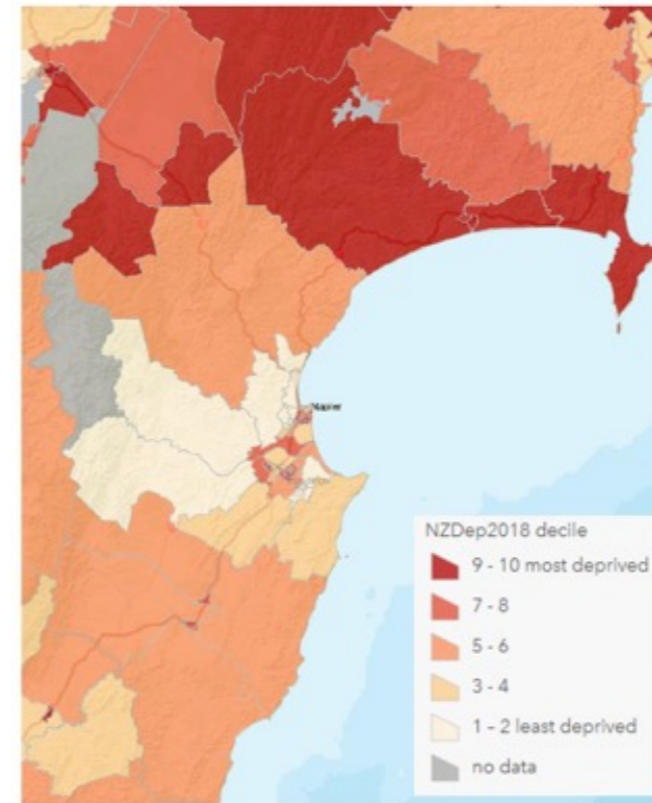
Affordability is not only related to the cost of the service but also the community that is paying. In the Water NZ 2017-18 National Performance Review it considered relative affordability of water and wastewater services. It referred to varying international water affordability metrics for water and wastewater services ranging from 2 - 5% of household income⁴.

Morrison Low have completed a Hawke's Bay Three Waters Review, including analysis of the current level of affordability of water and wastewater in Hawke's Bay⁵, which shows Wairoa above the lower range metric of 2% already.

Council also needs to make sure its infrastructure is well maintained to avoid future unexpected costs for repair or replacement, and to prevent unexpected disruption of services to the community.

Wairoa community ability to pay

Wairoa's low population base and median household income significantly impacts on the community's ability to pay for transport services. Wairoa is also has high unemployment and is the most deprived part of the Hawke's Bay region, with most of the district being Decile 9-10.



4.2 LEGISLATIVE & POLICY CHANGE

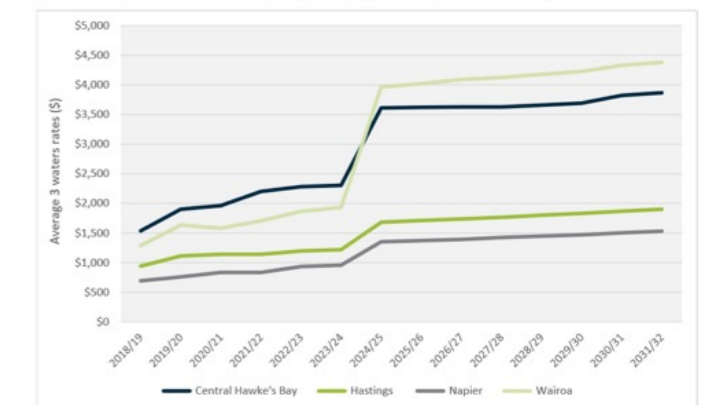
As already outlined in Section 2 The Strategic Context, the New Zealand Government is reforming how drinking water, wastewater and stormwater (Three Waters) services are delivered across New Zealand, in response to the 2016 Havelock North Drinking Water Inquiry. New regulations and standards are coming which will force change.

Changes to legislation are likely to result in higher standards for water, wastewater and stormwater treatment and compliance costs. These reforms will have significant implications and challenges for Three Waters service delivery.

4.2.1 HAWKE'S BAY REGIONAL REVIEW OUTCOMES

In the Hawke's Bay Three Waters regional review, Morrison Low have calculated the likely additional future costs⁶ to meet expected regulatory reform and associated increased community expectations. These additional costs result from both operational cost increases to meet new compliance requirements and capital investment to upgrade infrastructure to meet the higher standards. The enhanced status quo projection highlights that a combination of already high water rates, significant future investment requirements and a small rating base could see the average three water rate rise to over \$4,000 per household in Wairoa.

Figure 24 Enhanced status quo: estimated future costs (average three water residential rates)



When considered using the same affordability measure introduced in the analysis of the current costs, the full impact of the changes shows that in Wairoa unaffordability has increased significantly and is now over the 5% threshold.

⁴ Water NZ. 2017-18 National Performance Review, Page 7

⁵ Morrison Low (July 2020). Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options. p41

⁶Morrison Low (July 2020). Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options. pp48-49

Estimated average Three Waters residential rate enhanced status quo (2032)

	Central Hawke's Bay	Hastings	Napier	Wairoa
Average Three Waters residential rate	\$3,867	\$1,901	\$1,531	\$4,380
Affordability of water and wastewater	4.4%	1.9%	1.5%	5.9%

The projected increase in Operational Costs is approximately 41%⁷ regionally for the enhanced status quo between 2023/24 and 2024/25.

4.3 CLIMATE CHANGE

Climate change is a gradual process, and its impacts for the district are difficult to determine due to the range of plausible emission scenarios, and uncertainty in region specific results.

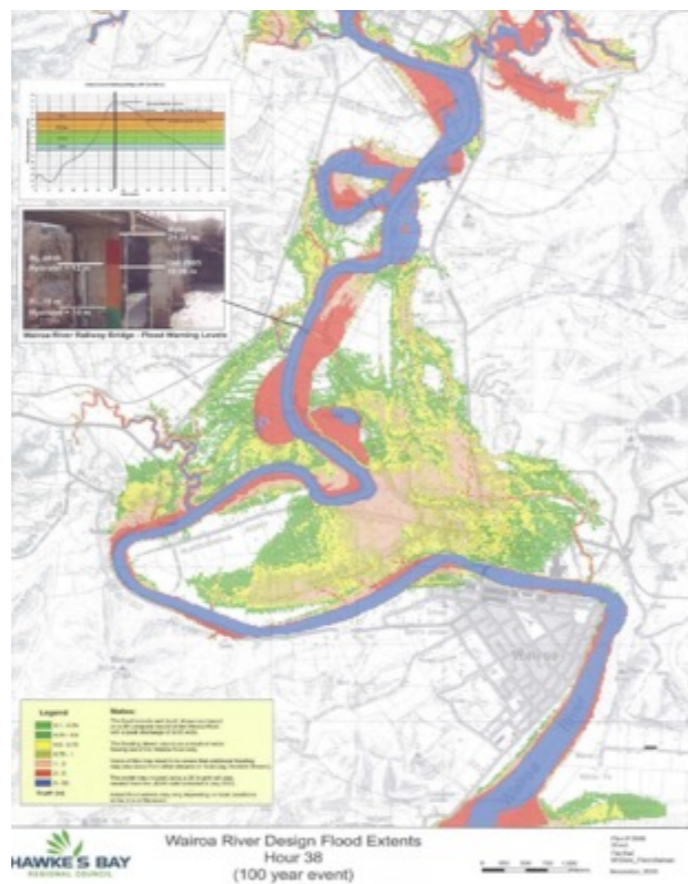
Wairoa District Council commissioned a study in 2017 on the effects of climate change impacts on Wairoa⁸. The objectives of the report were to provide an overview of climate change prediction on a regional scale for Wairoa and to look at the potential impact on the district and how to mitigate this.

Potential impacts that Wairoa could expect include:

- Increased coastal inundation and erosion
- Inland flooding from the Wairoa River
- Longer growing seasons for the agriculture sector – short to medium term
- Negative impacts of drought over the longer term
- Increased likelihood of wildfire

These changes in the climate could affect the water services in various ways such as:

- Increased rainfall intensity impacts on river turbidity and our ability to make drinking water (anything over 4000 NTUs means stopping production)
- Increased incidence of more extreme rainfall events will expose the stormwater system to higher volumes of water which may exceed current design standards, resulting in flooding where capacity is insufficient. This should be considered in the provision of pipes and other systems for stormwater management. Options for more resilient, sustainable or environmentally friendly (e.g. Low Impact Design systems) stormwater could be explored.
- Wastewater inflow and infiltration during rainfall events contribute to a higher amount of wastewater generation. A drying climate may result in this becoming less of an affect.
- Increased demand for potable water as temperatures rise
- Increased risk of wild fire that could threaten the townships and the reticulated firefighting supplies



IMPROVEMENT ITEM – Complete new stormwater catchment modelling to provide a more up to date view on climate change impacts.

IMPROVEMENT ITEM – When modelling has been completed use prioritisations based on flood prone areas (e.g. along the Wairoa River) and development Catchment Management Plans.

4.4 LAND USE CHANGE

Land use change, particularly in urban areas, can result in changes to water services patterns and demand. Dwellings with higher demand can collectively have a high impact on the water network capacity. Likewise, development increases impermeable services, which can impact on the wastewater and stormwater networks. Changes in zoning from rural to rural residential, and development of visitor attractions, can increase demand on our water services. The larger rural residential lots generally use more water for irrigation than low density lots.

The rural areas of Wairoa have traditionally been used for sheep and beef farming, however, some change to land use has occurred over the past decade. These include further residential developments, primarily in Māhia, which have connected to the wastewater scheme. Where a Council scheme is not available, private and onsite supplies are often developed. There is a risk that these schemes are not maintained to the same LOS as the Council network, which could lead to health risks for the users or confusion as to the Level of Service expected.

Change of land use could also affect the quality and quantity of stormwater and wastewater discharges that may have to be mitigated to ensure the development doesn't impact on conditions of a discharge resource consent.

4.5 ECONOMIC DEVELOPMENT

Economic Development is viewed as a vital element in keeping the Wairoa District alive and thriving, both now and into the future. The economy of Wairoa is based on the rural sector. Approximately 60% of the total land is in productive use, of which some 48% is in pasture. Sheep/beef farming and related processing, and forestry are the leading rural production industries in Wairoa district.

Council has embarked on an ambitious programme of attracting new businesses to the district and further developing our district's strength in land-based industries. An increased emphasis by the Wairoa District Council on economic development, particularly aimed at encouragement of diversification of agribusiness, ecotourism, digital creative industry attraction, and attraction of new and returning residents, has led to an increasingly positive community view of the district's future.

Tourism is an area of focus, in particular the potential tourism related to Rocketlab. This has the potential to attract a significant number of visitors to the Māhia area and infrastructure must be in place to support this.

4.5.1 AFFCO WATER SUPPLY

Council is largely dependent on demand from AFFCO which varies over the year. When AFFCO is operating, in the order of 75% of

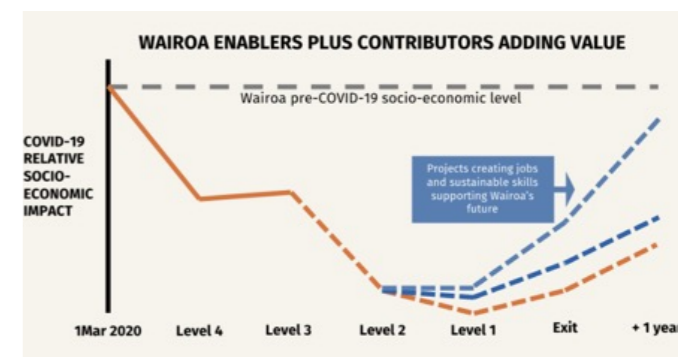
the water produced is used by the AFFCO plant. This significantly contributes to Wairoa's water consumption levels.

Water consumption for 2019/20 in Wairoa was in line with the national average residential consumption. Average production rates are in the order of 291.5 litres per person per day. The average consumption level of other Councils throughout New Zealand employing water demand management initiatives is around 293.9 litres/person/day, and the minimum peak domestic demand recommended by NZ Standard 4404:2010 is 250 litres/person/day. Wairoa's water consumption was significantly lower than previous years, where it has been over 500 litres per person per day. The reduction is a result of concerted efforts to deal with leakage.

IMPROVEMENT ITEM - To improve our understanding of future demand, we need to understand future trends in water usage from our key user AFFCO. An engagement strategy is required to ensure regular communication with AFFCO to predict peak and future usage trends.

4.5.2 POST COVID-19 RECOVERY

Wairoa has put considerable effort into proactively responding to COVID-19 through strategic planning. A Wairoa Journey Together: Covid-19 Economic Recovery outlines the key impacts of COVID-19. Most businesses halted during Level 4 and Level 3 because they were unable to operate from their home due to the nature of their business, the lack of connectivity and/or no online marketplace presence. Infrastructure, forestry, and other industries that provide employment to Wairoa people were halted. Although there was a large uptake by businesses of the wage subsidy programme and other government assistance, job losses occurred. A survey of a sample of local businesses during Level 4, identified approximately 17% expected to cut jobs. This aligns with MSD's information noting an increase in job seeker support.



Wairoa District Council have developed key recovery projects, including the following Three Waters 2021 and Future Commencement Projects:

Project	Timing	Reasons for Completion
Ōpoutama Wastewater Treatment and Discharge Upgrade	Starting 2021	• Management of community growth and greater certainty of compliance with resource consents.

⁷Morrison Low (July 2020). Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options. Table 28, p134

⁸The Implications of Future Climate Change on the Wairoa District, J. Oram, Jan 2017

Project	Timing	Reasons for Completion
Storage	Starting 2020, but additional stages to follow in planning period	<ul style="list-style-type: none"> Provides certainty that the volumes of wastewater generated by Wairoa during storm events can be stored. Provides certainty that the WWTP ponds will never overflow. Provides opportunities to adjust the discharge flow rates and timing to reflect the river flow rates and the likelihood of community contact via recreation. Provides opportunities to hold back wastewater during winter so that it can be utilised for irrigation during summer.
Irrigation	Starting 2020, but additional stages to follow in planning period	<ul style="list-style-type: none"> Community aspirations are achieved with gradual removal of wastewater from the Wairoa river. Availability of irrigation water will provide certainty to manage variable seasonal rainfall. Use of wastewater for Irrigation increases pasture and animal productivity improving farm profitability and viability by effectively using wastewater nutrients instead of discharging them into the river and sea. Improved pasture will help to develop deeper and more resilient topsoil, stabilise the steep erosion-prone slopes of soft sedimentary strata, and reduce the rates of sediment and nutrient run-off losses from erosion of the farm.

Demand Issue	Demand Impact	Specific LOS Issues	Demand Management Initiative
Land Use Change	Low	Change from rural to urban form will increase demand in areas with already limited capacity. This primarily impacts the Māhia area.	Development policies to ensure that any new infrastructure meets full legislative requirements.
Economic Development	Low	Changes in AFFCO production are likely to have the biggest impact on Three Waters Levels of Service, particularly around capacity. COVID-19 is putting a strain on local businesses and employment, so Council is proposing to support the local economy through Level of Service related projects.	Develop a consultation and engagement plan for key commercial users of the Three Waters services, particularly AFFCO. Complete identified projects through the COVID-19 Recovery Strategy.

4.6 DEMAND MANAGEMENT

Key demand management focuses include:

Demand Issue	Demand Impact	Specific LOS Issues	Demand Management Initiative
Population & Demographic Change	Medium	While there is unlikely to be any significant growth impacting Levels of Service, as the workforce declines and people move to retirement incomes, the ability to fund Level of Service cost increases will reduce.	<p>Identify alternative funding sources available to enable Council to maintain current Levels of Service delivery without any impacts on ratepayers.</p> <p>Identify where a change in Levels of Service, to mitigate cost escalations, will not have a significant impact on residents and businesses.</p> <p>Set priorities based on alignment with our vision, community feedback and economic development aspirations.</p>
Legislative & Policy Change	High	<p>Implications from water reforms will primarily result in higher compliance requirements, increasing the Level of Service.</p> <p>Budget impacts are unknown but are expected to be significant and may be unaffordable for District's small population.</p>	<p>Continued regional approach to determine the best service delivery for Three Waters.</p> <p>Keep a watching brief on legislative change to understand potential cost increases to ratepayers e.g. waste levy charges.</p>
Climate Change	Medium	Varied Levels of Service impacts may occur, but it is likely that increased pressure will be put on some assets, particularly stormwater capacity.	Council's response to climate change will help it to identify key assets at risk, ensure it recognises climate change and its impacts in its asset and financial modelling, and prioritise funding for resilience. It will ensure that Council identifies the critical components of its infrastructure networks and prioritise renewals so that the network can continue to operate.

5. RISK AND RESILIENCE

5.1 RISK MANAGEMENT POLICY

Risk Management continues to be an area of learning and growth for Council. We are focussed on developing a consistent organisational approach to risk management.

Council's updated Risk Management Policy was adopted in December 2017. This is a Council-wide policy overseen by the Chief Executive Officer. Staff, contractors, and elected members have a shared role to play in the identification, reporting and management of risk through risk management processes being integrated with planning processes and embedded in management activities.

Since this time, Council has commissioned a Risk Management Framework Review by independent consultants in March 2018, which introduced a number of improvement recommendations for future implementation. Then in early 2020, we commissioned WSP to further review our risk management processes and develop a practical Risk Management Strategy to align risk management across the Community Assets and Services Group. A key component of the Risk Management Strategy is the provision of a process for identifying critical assets.

This section of the AMP highlights key Risk Management outcomes incorporated into the future planning included in this AMP.

5.2 CRITICAL ASSETS

Asset Criticality is the consequence arising from the sudden and total loss of an asset. The principal objective is to prevent the deterioration of critical assets to "very poor" condition where major and urgent replacement is required, to allow for service continuity and minimise disruption costs. To assess the criticality of an asset the following three factors are considered:

- **Service Importance:** The importance of core asset groups providing the service to the community. This answers the question: **What is the effect on the community of losing service provision?**
- **Functionality:** Reflects how important the specific asset is to the functionality of the core asset groups providing the service. It answers the question: **What is the impact on the service if the asset fails?**

- **Down-time:** Duration that the asset will be "down", until return of the asset to full capacity, if it fails. It answers the question: **How quickly can the asset be repaired/replaced?**

5.2.1 SYSTEM IMPORTANCE

Service Importance has a 1 to 5 scale where 1 is of Low Importance and 5 is Extremely Important. Using this assessment process from our Risk Management Strategy, the Service Importance of core asset groups within the Three Waters activity have been determined as follows. Specific examples of assets that fall under the category of Extremely Important are:

Core Asset Group Delivering Key Services	Importance to Service Provision
Water Supply Treatment Plant	5 - Extremely important
Water Supply Storage Tanks / Reservoirs	5 - Extremely important
Water Supply Reticulation	5 - Extremely important
Wastewater Treatment Plants	5 - Extremely important
Stormwater Reticulation	5 - Extremely important
Water Supply Intake	4 - Highly important
Water Supply Trunk Main Supply & Pipeline	4 - Highly important
Wastewater Reticulation	4 - Highly important
Wastewater Pump Stations	4 - Highly important
Stormwater Manholes & Sumps	4 - Highly important
Stormwater Channel	3 - Important
Stormwater Outlets	3 - Important
Stormwater Open Drains	3 - Important

Asset Group	Critical Asset	Consequence of Failure	Current Response/Contingency Plan
Water			
Water Supply Treatment Plant	Wairoa Treatment plant including intake structure and connecting main	Failure of the treatment plant would mean no delivery of water or delivery of non-potable water	Advise customers to conserve water Shut down AFFCO supply Implement demand management strategies
Water Supply Trunk Main	Frasertown to Wairoa Trunk main supply & pipeline (including Scamperdown Bridge)	Failure of the mains means no delivery of water or delivery of non-potable water	Identify and rectify problem as soon as possible Prepare for emergency supplies To minimise the impact of earthquake damage with new mains are constructed from material that is more ductile.

Asset Group	Critical Asset	Consequence of Failure	Current Response/Contingency Plan
Water Supply Storage Tanks / Reservoirs	Major concrete reservoirs	Insufficient storage may lead to lack of supply during times when treatment plant is unable to produce water for example.	Additional storage tank commissioned August 2017 to ensure 24hrs storage – adds resilience to the network.
		Water loss from breaks in the falling mains without the protection automatic seismic shut off valves.	Automatic seismic shut off valves shut the outflow from the reservoir when excess flow from the reservoir is detected (such as from a broken outlet trunk main) the outlet valve is automatically shut and an alarm sent to the Duty Officer via the SCADA system.
Software Systems	SCADA (Supervisory Control and Data Acquisition) software used for monitoring of water productions and Critical Control Points as identified in the WSP	Failure of SCADA means failure of water operations as Council staff and contractors will not be notified if there are any issues or problems requiring immediate attention.	Options for automated consent monitoring using SCADA have been commenced simplifying consent monitoring and reporting.
Wastewater			
Wastewater Treatment Plants	Wairoa Treatment Plant discharge system	Failure of the discharge system will lead to a build-up of wastewater in the ponds and possible discharge over the emergency spillway without full treatment and outside permitted hours	Telemetry system and additional storage capacity gives a time envelope to respond to mechanical malfunction of discharge system. Have duty standby for key equipment such as UV units, pumps etc. as part of the plant upgrade. Standby generator set to protect the plants from the loss of power.
Wastewater Pump Stations	Fitzroy Pump Station and rising main (WAIROA)	Failure of either of these leaves the system unable to transfer waste to the treatment plant	Additional pumping capacity available
	Kopu Rd Pump Station (WAIROA)	Failure of these means waste cannot be transferred to the treatment plant. One third of Wairoa system goes through here.	
	Māhia Pump Station and rising main	Failure of either of these means waste cannot be transferred to the treatment ponds	Manual transfer ability included in maintenance plan
	Ōpoutama Pump Stations	Failure of these means waste cannot be transferred to the treatment plant	Manual transfer ability included in maintenance plan
Wastewater Reticulation	Pumping main in Wairoa	Wastewater unable to be conveyed to WWTP for treatment, resulting in raw sewer overflows	
Software Systems	SCADA (Supervisory Control and Data Acquisition) software used for monitoring of treatment plants and pump stations	Failure of SCADA means failure of water operations as Council staff and contractors will not be notified if there are any issues or problems requiring immediate attention.	Options for automated consent monitoring using SCADA have been commenced simplifying consent monitoring and reporting.

Asset Group	Critical Asset	Consequence of Failure	Current Response/Contingency Plan
Stormwater			
Stormwater Reticulation	Reticulation pipes inlets & outlets	Failure of stormwater reticulation assets results in flooding of roads and adjacent properties	Reactively responding to blockages Increasing capacity of critical assets through improvements programme Targeted renewals and improvements

5.3 KEY RISKS

The current risk register was last updated in December 2017 and is included in Appendix B. Through the development of the risk register, **Council's top risks for the Three Waters activity** are included below.

Risk	Cause	Residual Risk	Control	Mitigation Strategies
Water				
Water supply becomes contaminated	Damage to reticulation system resulting in unknown groundwater or sewerage infiltration Lack of maintenance and sediment build up Contamination from external source during operation of the plant, repairs to the networks or new construction project	High	Chlorine residual maintained in treatment Dead end flushing programme in place Water Safety Plans Procurement processes (qualification requirements)	Draft Emergency Response Plan underway Develop a water supply shutdown procedure Develop a water disconnection procedure Develop boil water notice Employ a contract with qualified staff and robust management practises, including having a suitable disinfection process before any new pipework becomes live.
Water supply demand cannot be met	No alternative water source for Wairoa township Budget constraints for new works / upgrades Demand faster than predicted (ie new industrial customer) Unexpected failure of a critical asset.	High	Overflow monitoring and response planning Reactive response to requests for service Proactive risk based renewals programme	Prepare scoping plan for Resilience Plan development for the alternative water source for Wairoa township (such as a package plant)
Raw water becomes contaminated making treatment ineffective	Natural disaster including flooding, tsunami, earthquake, third party damage, terrorist attack	High	SCADA alarms Operator training Water Safety Plans	Review the effectiveness of the Contingency Plans with the scheduled WSP updates Draft Emergency Response Plan underway.
Wastewater				
Public safety compromised for example by falling into a manhole or entering a pump station	Insufficient hazard controls	High	Personnel undertaking works responsible for site security and exclusion zone establishment	Implementation of exclusion zone and site security procedures to be audited at least annually as acceptable industry practice

Risk	Cause	Residual Risk	Control	Mitigation Strategies
Stormwater				
Stormwater becomes contaminated	Natural disaster including flooding, tsunami, earthquake, third party damage, terrorist attack	High		Draft Emergency Response Plan underway

5.3.1 RISK REGISTER

As a result of this Risk Management Strategy, we are currently completing a full review of our Risk Register. In the interim, our previously identified high risks have been included. At this point, investment has primarily been prioritised through our understanding of our critical assets and their condition / performance.

IMPROVEMENT ITEM – There is a need for a full review of the Three Waters Risk Register to ensure risk issues have been adequately identified to ensure that current high risks are still relevant.

5.3.2 WATER SAFETY PLANS

The Drinking Water Standards New Zealand (DWSNZ) seek to provide an acceptable quality level for water delivery to the community. The risk of a contaminated water supply is guarded against by the development and approval of Water Safety Plans (WSPs). The purpose of a WSP is to assess possible risks to our water supply, to identify any actions necessary to manage those risks, and any investment required to achieve the DWSNZ.

Council currently has approved Water Safety Plans for all the water supplies; Wairoa & Frasertown and Tuai. Water Safety Plans use a risk-based approach to addressing public health related issues associated with our water supplies. They are the means of identifying forward works projects for public health driven expenditure in the LTP.

All WSPs were updated in 2019. Most Wairoa Frasertown Water Supply improvements scheduled in the previous WSP have been completed. Most Tuai Water Supply improvements scheduled in the previous WSP have been completed.

5.4 RESILIENCE

Three Waters networks are susceptible to ageing infrastructure and the sometimes-small nature of the networks can make them more vulnerable with communities being without those key services at times. The Wairoa supply is dependent on a single source.

Resilience has been identified as a Significant Challenge for Wairoa in the 2018-2048 Infrastructure Strategy with the following responses followed:

- Good asset management practices and robust renewals programmes based on the condition and the remaining life of infrastructure assets.
- Identification of critical assets and management of these assets to ensure that they do not fail or to limit the effect of a failure.

Emergency Response and Business Continuity Plans to be in place for emergency events

5.4.1 EMERGENCY MANAGEMENT

Emergency management is undertaken collaboratively across the Hawke's Bay region. Emergency management staff are employed by the Hawke's Bay Council.

The Civil Defence Emergency Management (CDEM) Act 2002 requires local authorities to co-ordinate plans, programmes and activities related to CDEM across areas, aspects of risk reduction, readiness, response and recovery. It also encourages co-operation and joint action within regional groups.

The Hawke's Bay Lifelines Group has a programme of work in place that is being delivered collaboratively and will be able to provide improved response and intelligence in a major event.

5.4.2 EMERGENCY RESPONSE PLANS

IMPROVEMENT ITEM - To improve the resilience Level of Service delivery, Emergency Response Plans need to be developed. Draft plans are currently underway. The plan will cover the effects of moderate and significant events on vulnerable and critical assets.

5.4.3 NATURAL DISASTERS & BUSINESS CONTINUITY

We assume that in the event of a significant disaster, natural or man-made, Council can continue to provide sufficient services to the community. We have assumed we could extend our external borrowing to fund the clean-up and ongoing capital work to rebuild any damaged assets, for which we don't fully insure.

Alongside the Council, Central Government also has a role in disaster recovery and restoration works after natural disasters happen.

Other than increased insurance costs, there is no further allowance in this plan for funding the repair of infrastructure damaged by any future natural disasters.

Equally, the predicted future occurrence of drought has a major impact by reducing the incomes of primary sector businesses; this will influence decisions on the affordability of the LTP. The risk of this occurring is medium.

5.4.4 CLIMATE CHANGE & RESILIENCE

Our current actions to improve the resilience for the Three Waters infrastructure assets to climate change include:

- Complete new stormwater catchment modelling to provide a more up to date view on climate change impacts.
- When modelling has been completed use prioritisations based on flood prone areas (e.g. along the Wairoa River) and development Catchment Management Plans.

6. OUR ASSETS

6.1 INTRODUCTION

This section provides an overview of asset information regarding the individual asset groups within the Water Services Activity. Council manages the following:

- Public water supply schemes in Wairoa, Frasertown, Tuai and Māhanga.
- Four public wastewater schemes, including wastewater treatment plants (WWTP), in Wairoa, Māhia, Ōpoutama and Tuai.
- Stormwater for the Wairoa township, Māhia Beach and Tuai.

Privately owned septic tanks are used in townships without reticulated wastewater schemes e.g. Māhanga, Nūhaka and Mohaka. Private water supplies comprise predominately of rainwater tanks. Part of Māhia Beach is serviced by a private communal supply.

Council owns, controls and manages the 3-Water activities. The assets are operated and maintained on the Council's behalf under contract by Fulton Hogan, except for the water treatment plant in Frasertown, which Council operates and maintains in-house.

6.1.1 ASSET DATA QUALITY

Wairoa District Council uses AssetFinda as its asset register for adding, updating and deleting assets related to the Three Waters network. AssetFinda has the ability to store both inventory and condition information as it relates to the assets.

Reticulation assets data quality

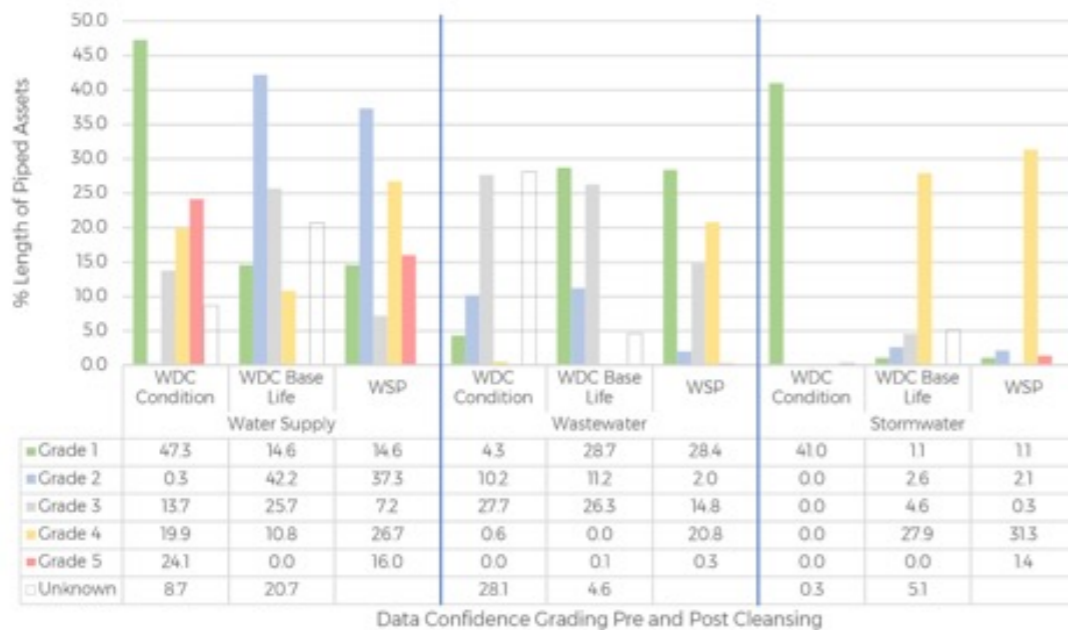
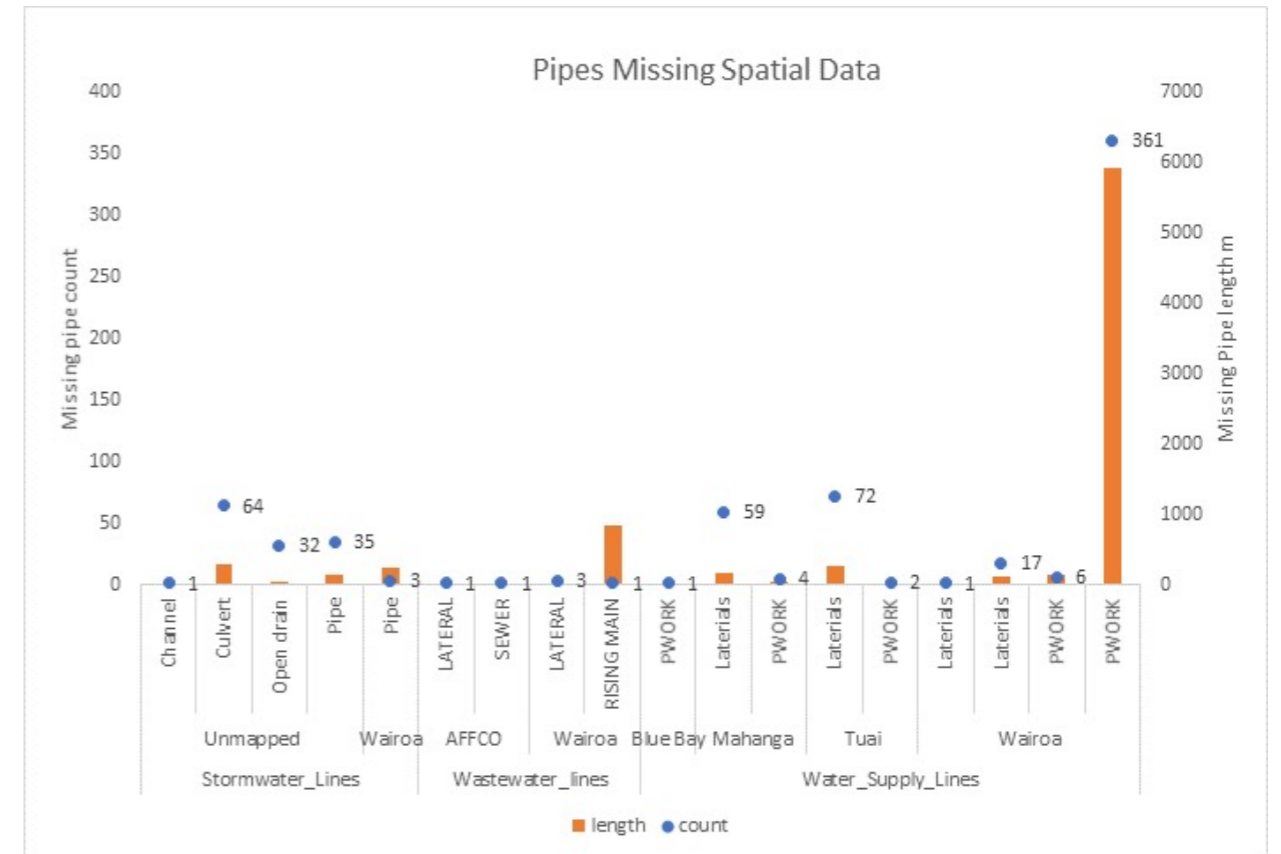
Wairoa District Council has invested in significant data improvement works over the last two years. In August 2019 a pipe data confidence, desktop condition assessment and water loss management plan was completed for the Wairoa water supply¹⁰. Subsequently during 2020, Council undertook work to improve the pipe data confidence and condition data across the Three Waters piped asset dataset¹¹. A data confidence exercise was completed using sample CCTV inspections, materials testing and analysis of pipe materials enabled Council to derive more accurate asset lives.

Key project outcomes:

- Improved dataset quality and assign a data confidence rating to each piped asset.
- Improved understanding of each pipe material useful life.
- The remaining useful life range table and process was used to allocate a provisional condition grade to all piped assets (excluding asbestos cement pipes).
- The maximum operating pressures for each asbestos cement piped asset is estimated.
- Desktop condition assessment was applied for asbestos cement pressure piped assets and the provisional desktop condition grade was allocated to each piped asset.
- Better understanding of the water balance and leakage assessment.

The piped asset dataset has been updated in AssetFinda to reflect the updates, amendments and recommendations made during the Three Waters piped asset data management project.

A review of asset spatial data has also identified some missing spatial data. There are 8.2 km out of 265.1 km missing spatial features as shown below.



IMPROVEMENT ITEM – Collect spatial data for all assets where this is missing. Use asset criticality to prioritise data collection programme.

Above ground assets data quality

IMPROVEMENT ITEM – Above ground asset data quality was reviewed during the 2020 Valuation process. There were a number of key improvement items noted to improve data quality. These included:

- Ensure installation and replacement dates are applied to assets
- Where major assets are replaced or upgraded and recorded

in the Fixed Asset Register ensure that these changes are also recorded in Assetfinda

- Review the categorisation for Wairoa Water Treatment Plant assets
- The Optimised assets should be recorded at a component level to ensure consistency with MEA unit rates, instead of being grouped into assets with similar lives
- Investigate systems to allow for varied minimum useful lives base on asset type specific characteristics
- Ensure the alignment of the asset category, location, system name and communities fields in AssetFinda.

¹⁰WSP (5 August 2019).

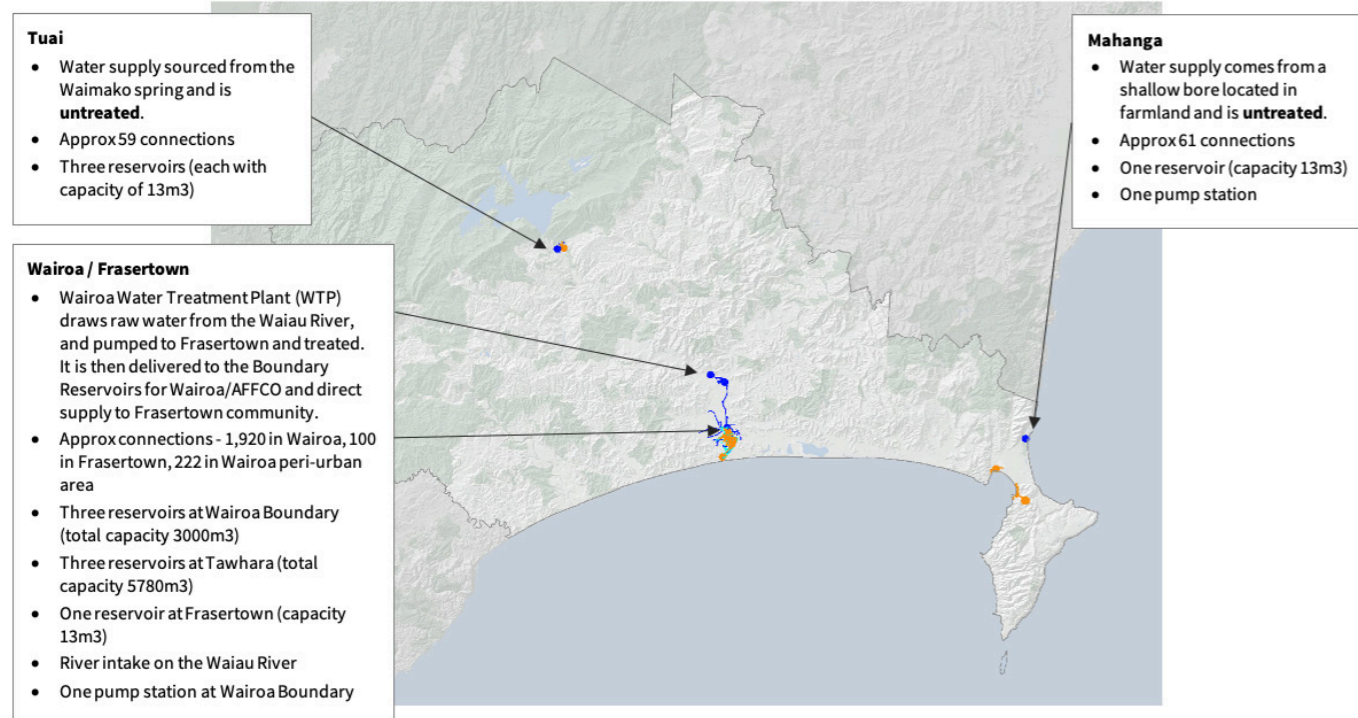
¹¹WSP (4 May 2020). Three Waters Piped Asset Data Management District Wide.

6.2 WATER SUPPLY ASSETS

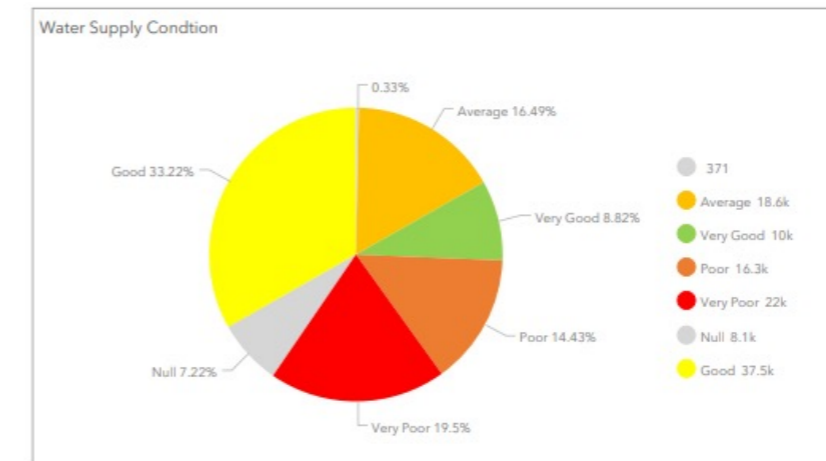
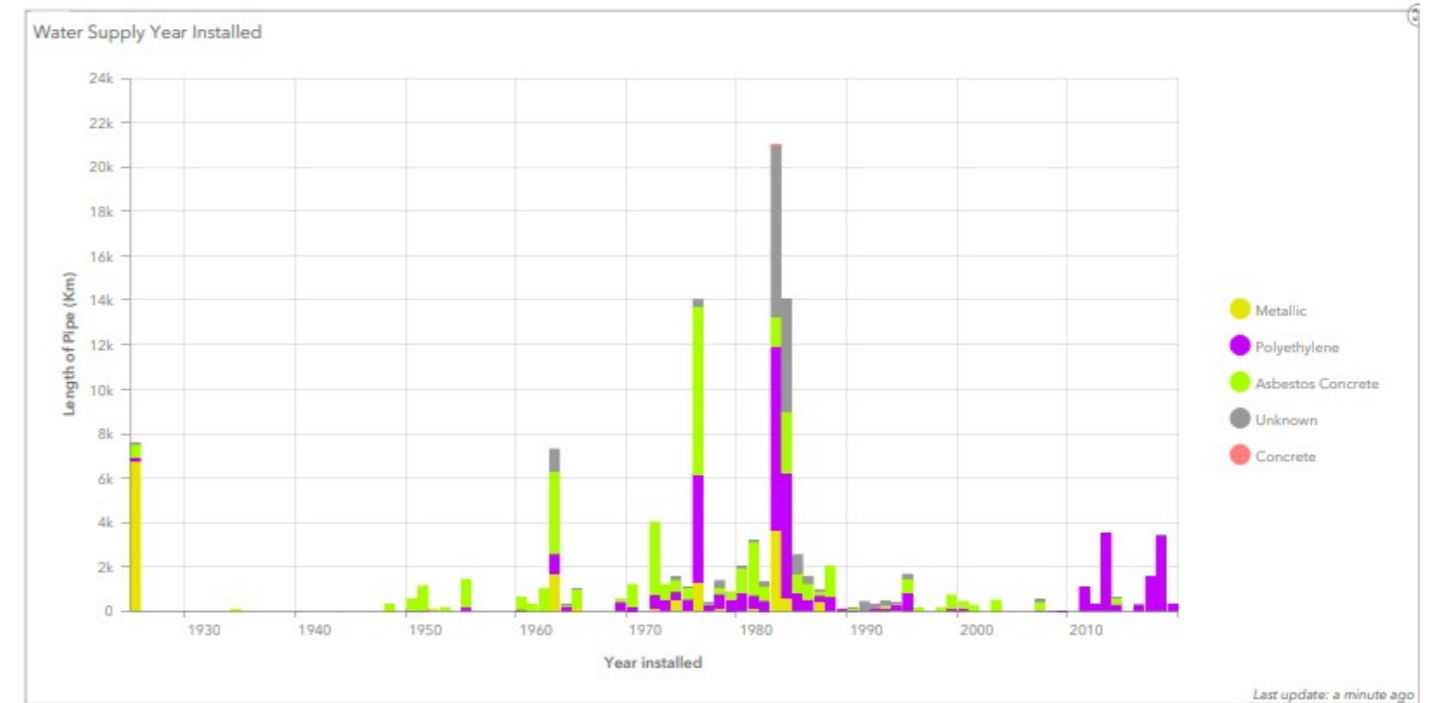
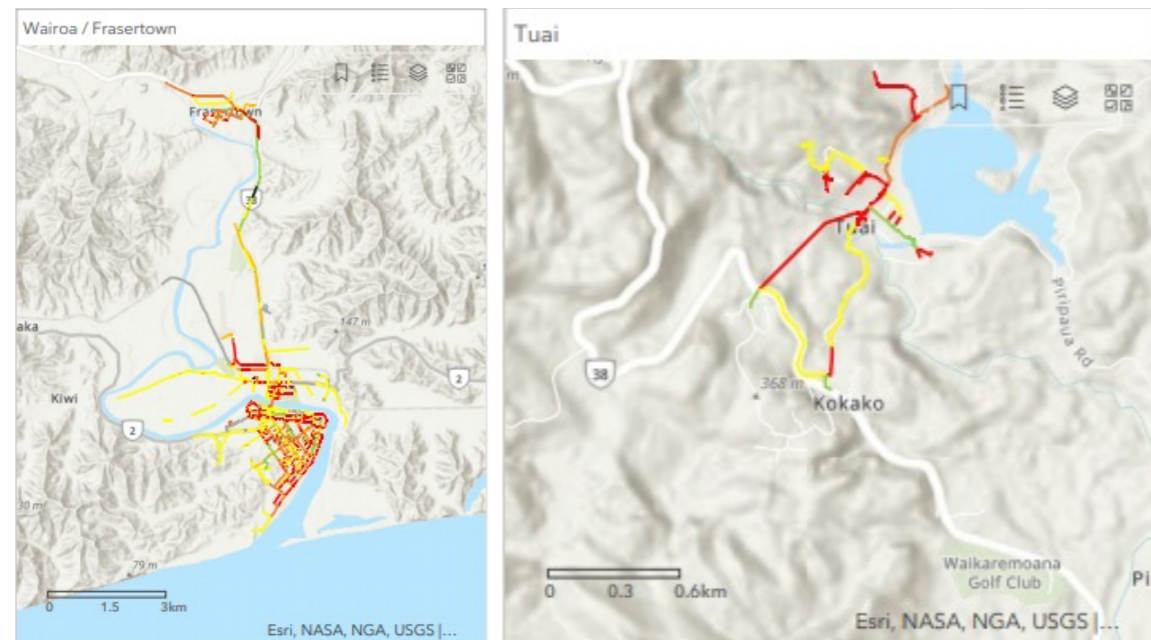
6.2.1 ASSET DESCRIPTION

Above ground assets

A summary of the location and type of above ground water supply assets (shown in blue) within the Wairoa District are shown on the map below. Further details on these assets are included in Appendix A.



Reticulation



Reticulation Assets include:

Total length of water reticulation network of 118.2km, split as follows:

- Wairoa - 76.7km of reticulation
- Frasertown - 5.4km
- Wairoa peri-urban - 18km
- Tuai - 6km of reticulation
- Māhanga - 1km of reticulation (untreated)

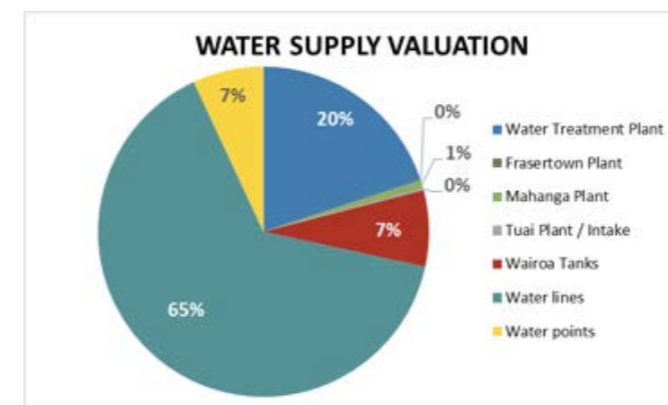
Assets components include:

- Pipelines
- Fittings comprising air valves, nodes, meters, isolating and sluice valves, tees and some services to properties

The trunk main is a low-pressure pipeline, approximately 6.7km long that connects the WTP with the Boundary Reservoirs in Wairoa from where the water is distributed to Wairoa and the AFFCO meat works.

6.2.2 ASSET VALUATION

The last valuation of the network and the water treatment facilities was completed in June 2020 by WSP. A full summary of valuation outputs is included in Section 8.5. The total value of Wairoa's Water Supply Assets is \$46.52M (Optimised Replacement Cost). The total depreciated value is \$21.25M (Optimised Depreciated Replacement Cost).



As water reticulation (water lines and water points) makes up 72% of the asset value, this provides the most significant focus for the following sections in terms of condition and performance.

6.2.3 ASSET CONDITION & REMAINING LIFE

It is essential for Council to know the condition of its assets and to address issues that can impact on both planning and public health and safety.

In August 2019 a desktop condition assessment was completed for the Wairoa water supply. Every piped asset has been allocated a provisional condition grade between 1 - Very Good to 5 - Very Poor. A condition assessment programme for water reticulation including sampling and testing sections of pipe is continuing, and provides further validation to the desktop assessment.

Condition Rating Gradings

Condition Rating	Description	Intervention
1	Very Good Condition	None required
2	Good Condition	Minor defects only, programme proactive maintenance or monitor
3	Fair or Average Condition	Some defects, maintenance required to return to accepted Level of Service
4	Poor Condition	Substantial defects, consider renewal
5	Very Poor Condition	Approaching unserviceable, consider disposal or replacement

*condition definitions (IIMM 2015)

IMPROVEMENT ITEM – While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through inspections and materials testing.

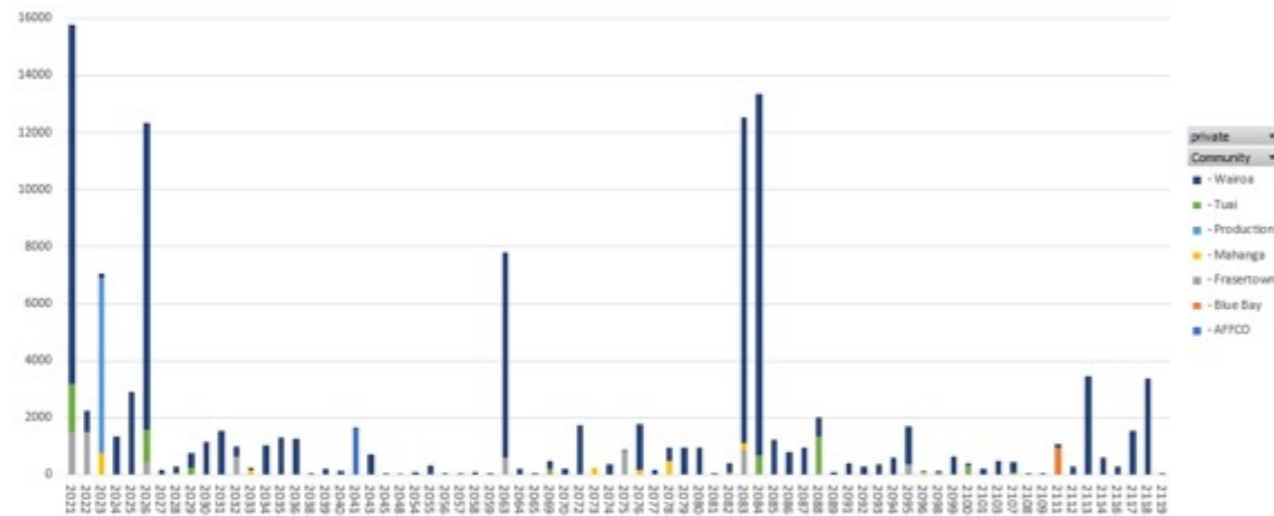
Remaining useful life

One of the two key components in the current pipeline renewal methodology is the pipe material useful life (useful life), which has been reviewed by WSP. The review identified the importance of useful lives as these are critical to the current desktop renewal methodology. In May 2020, the useful lives were modified using pipe condition assessment and nationally recognised guidelines¹². The 2020 recommended useful life for each pipe material was compared to the following national and international documents:

- International Infrastructure Management Manual 2015 (IIMM).
- New Zealand Asset Valuation & Depreciation Guidelines, Version 2.0, 2006.
- New Zealand Asset Valuation & Depreciation Guidelines, Version 1.2, 2001.
- New Zealand Asset Management Manual, Edition 1.1, June 1998.

The graph below shows a significant amount of reticulation pipeline has no remaining useful life.

Reticulation assets condition is included in the dashboard in Section 6.2.1. This shows that **34% of the reticulation pipes are in Poor or Very Poor condition**. The maps show the locations of these Poor and Very poor reticulation assets. Condition is unknown for 7.5% of reticulation pipes.



This indicates a backlog of renewals work. The majority of this pipeline is within the Wairoa Scheme, with 6.15km being Production Assets. Production assets are those pipes that run from the Water Treatment Plant to the Wairoa tanks/reservoirs, as well as from the water intake to the Wairoa Treatment Plant.

The maps below show where the “backlog” pipes are located in both Wairoa and Tuai.



Above ground assets

Condition for above ground assets is assessed at a detailed level on a case by case basis. We use external Consultants to complete these assessments and provide recommendations of future works to be completed as a result.

AFFCO operates 12 months of the year with a typical two to three week maintenance shut down period in August / September each year.

The chart below shows the volume of water produced over the last 13 years at the Frasertown Water Treatment Plant. This shows production to be slowly declining over the period. Records for 2018 and 2020 are incomplete, so volumes are partially based on estimated quantities.

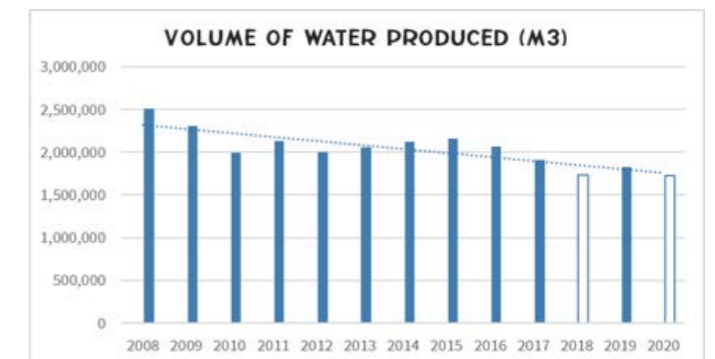
6.2.4 ASSET PERFORMANCE

Performance of an asset relates to the ability of the asset to meet defined service criteria.

Compliance with drinking water standards

The latest Ministry of Health Audit, completed in 2020, shows full compliance with DWSNZ for Wairoa’s water supply.

Māhanga water supply does not meet DWSNZ, however it was originally intended only as a supplementary non-potable supply and for firefighting. Much of the community is also on rainwater. A referendum is being completed in 2021 to determine whether to retain and upgrade to meet the DWSNZ.



It is anticipated that water production demand will remain at similar levels to the last 3-4 years over the duration of this AMP.

Water production volumes

The Wairoa Water Treatment Plant is a ‘demand-operated’ facility:

- The rate of processing can be adjusted (within limits) dependent upon raw water quality and demand.
- When the water level in the Boundary tanks is below the set level, booster pumps at the WTP are activated and treated water is pumped from the WTP contact tank to the Boundary tanks.
- When the WTP contact tank falls below the set level, pumps at the intake are activated and raw water is pumped from the intake to the WTP, starting the water treatment process

The capacity of the plant is approximately 13,600 m3/day of treated water.

Typical flows are:

- 5,500m3/day on average
- 10,000m3/day when AFFCO in operation
- 3,000m3/day when AFFCO not in operation

Water loss

A Water Loss Management Plan was completed in May 2020¹³. The purpose of the water loss management plan (WLMP) is to gain a better understanding of the reasons for water loss and non-revenue water (NRW). The areas encompassed in this water loss management plan are:

- Boundary pump station and the Tawhara reservoirs
- Frasertown
- Tuai

The leakage calculations were carried out using data from the model, and metered data from Wairoa DC where available. A revised calculation has subsequently been completed for Boundary Pump Station and Tawhara Reservoirs¹⁴.

¹²WSP (May 2020). Three Waters Piped Asset Data Management District Wide Review.

¹³WSP (May 2020). Three Waters Piped Asset Data Management District Wide Review.

¹⁴WSP Memorandum (13 August 2020). Variation 4 Wairoa Water Loss Assessment.

Performance	Boundary Pump Station & Tawhara Reservoirs (2020)	Frasertown (2019)	Tuai (2019)	Uncertainty
Water Loss	247 litres/service connection/day	319 litres/service connection/day	820 litres/service connection/day	Frasertown: ± 34.8% Tuai: ± 48.8%
Losses	7.0 m ³ /km of mains/day	5.8 m ³ /km of mains/day	13.7 m ³ /km of mains/day	Frasertown: ± 34.9% Tuai: ± 48.9%
Infrastructure Leakage Index (ILI) Calculation	2.9 Band B	6.9 Band C	5.7 Band C	Frasertown: ± 35.2% Tuai: ± 49.1%

World Bank Institute bandings show that leakage results are all within Band C: Poor leakage record, tolerable only if water is plentiful and cheap; even then, analyse level and nature of leakage and intensify leakage reduction efforts.

Developed Countries (ILI Range)	Band
<2	A
2 to < 4	B
4 to < 8	C
≥ 8	D

The Water Loss Management Plan includes the following initiatives to reduce water loss.

Performance	Key Focus Areas
Boundary Pump Station & Tawhara Reservoirs	<ul style="list-style-type: none"> Improved pressure management to reduce leak flow rates. Flow monitoring at 5-minute intervals from the pump station to allow the system to be better understood. Metering of all consumers to allow areas of high losses to be identified. Review of operational and maintenance procedures for tracking pipe repairs and renewals. The speed and quality of repairs should be investigated, as well as break frequencies to inform problem areas in the system, and support renewal planning.
Frasertown & Tuai	<ul style="list-style-type: none"> Bulk metering and SCADA upgrades to allow flow monitoring at 5-minute or similar intervals from the reservoirs and pump station to better understand the system. Metering of consumers to allow areas of high losses to be identified. Review of operational and maintenance procedures for tracking pipe repairs and renewals. The speed and quality of repairs should be investigated, as well as break frequencies to inform problem areas in the system, and support renewal planning. Improved pressure management to reduce leak flow rates.

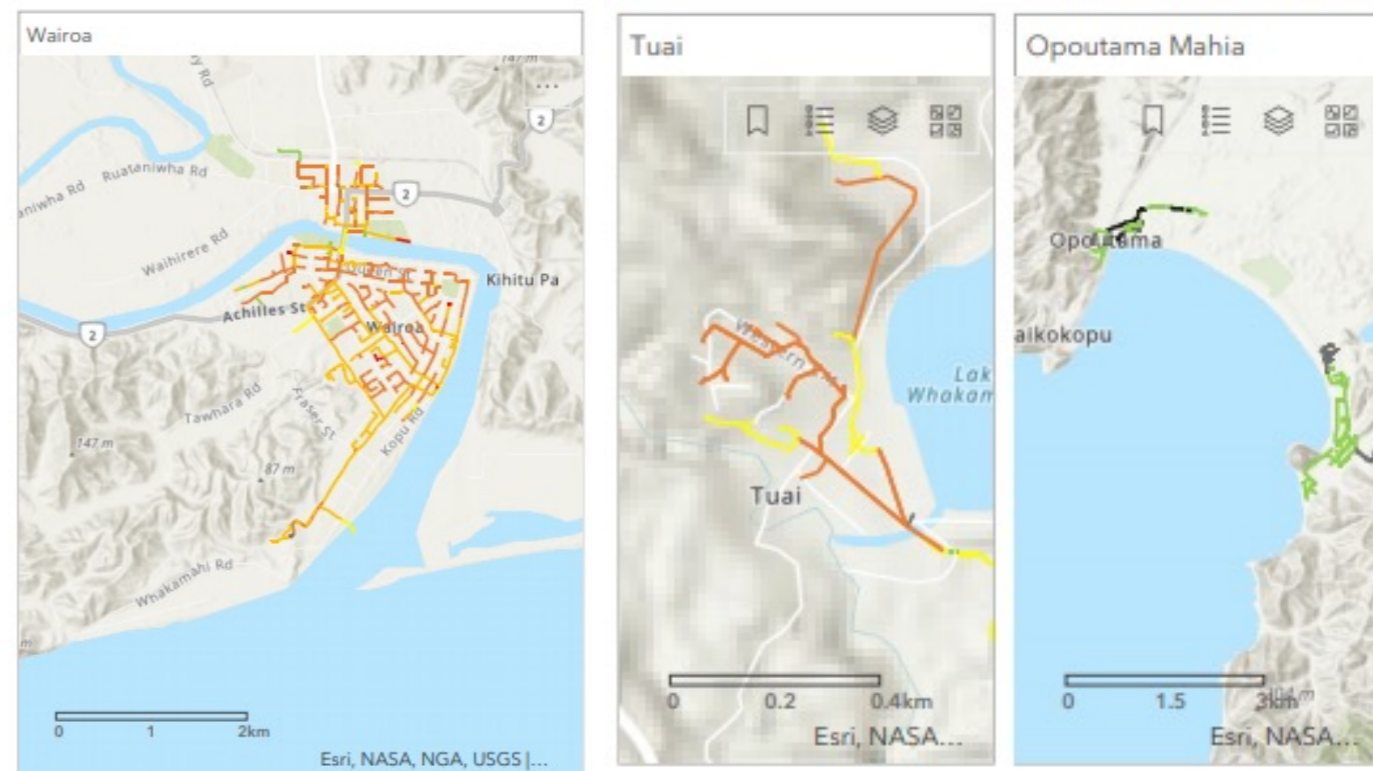
6.3 WASTEWATER ASSETS

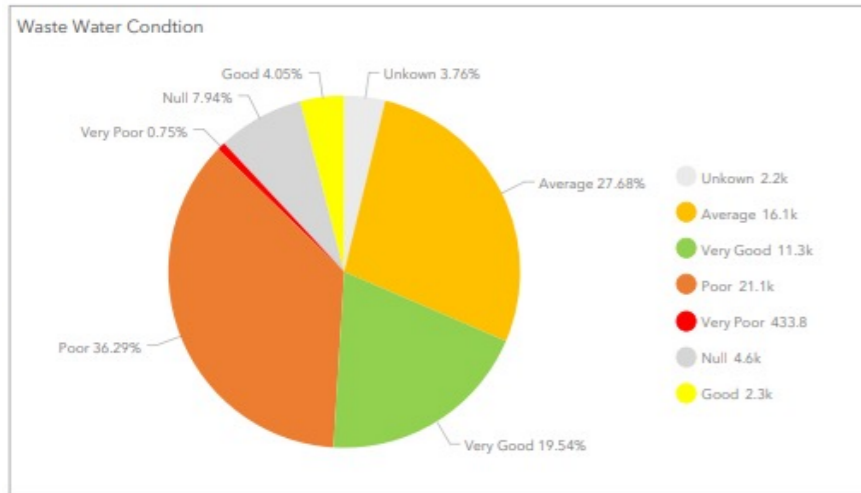
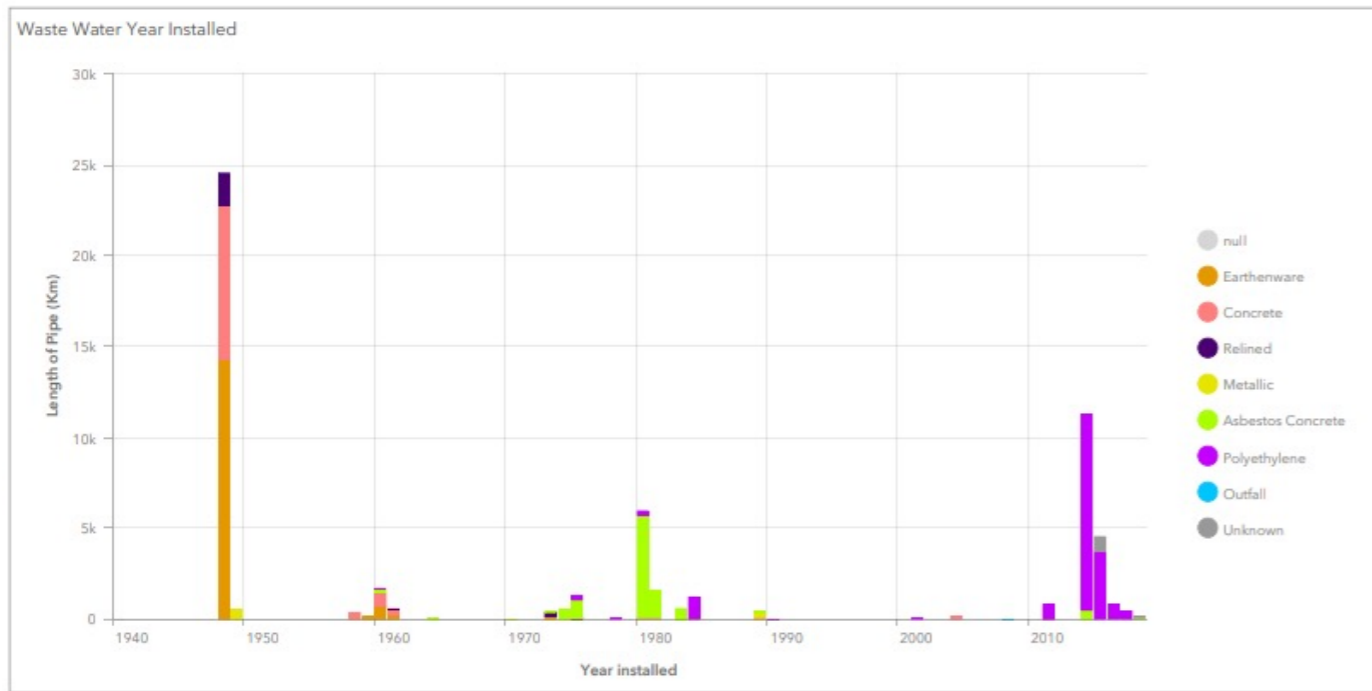
6.3.1 ASSET DESCRIPTION

The four wastewater systems are outlined below.



Reticulation





Reticulation Assets include:

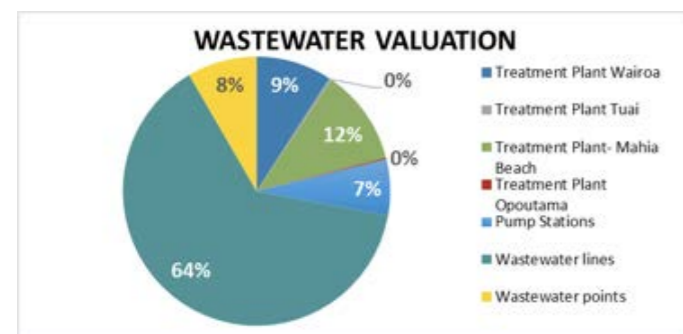
Total length of pipe reticulation network of 58.5km, split as follows:

- Wairoa – 36.9km
- Tuai – 4.5km. Includes separate reticulation systems for grey water and sewage (black water), therefore, much of the network consists of two pipes running parallel to each other
- Ōpoutama – 5.0km
- Māhia – 11.3km

6.3.2 ASSET VALUATION

The last valuation of the network and the water treatment facilities was completed in June 2020 by WSP. A full summary of valuation outputs is included in Section 8.3. The total value of Wairoa’s wastewater assets is \$32.92M (Optimised Replacement Cost). The total depreciated value is \$17.14M (Optimised Depreciated Replacement Cost).

As wastewater reticulation (wastewater lines and wastewater points) makes up 77% of the asset value, this provides the most significant focus for the following sections in terms of condition and performance.



6.3.3 ASSET CONDITION & REMAINING LIFE

As with water supply, a desktop condition assessment was completed for the Wairoa wastewater reticulation in 2020. Every piped asset has been allocated a provisional condition grade between 1 – Very Good to 5 – Very Poor.

Condition Rating Gradings

Condition Rating	Description	Intervention
1	Very Good Condition	None required
2	Good Condition	Minor defects only, programme proactive maintenance or monitor
3	Fair or Average Condition	Some defects, maintenance required to return to accepted Level of Service
4	Poor Condition	Substantial defects, consider renewal
5	Very Poor Condition	Approaching unserviceable, consider disposal or replacement

*condition definitions (IIMM 2015)

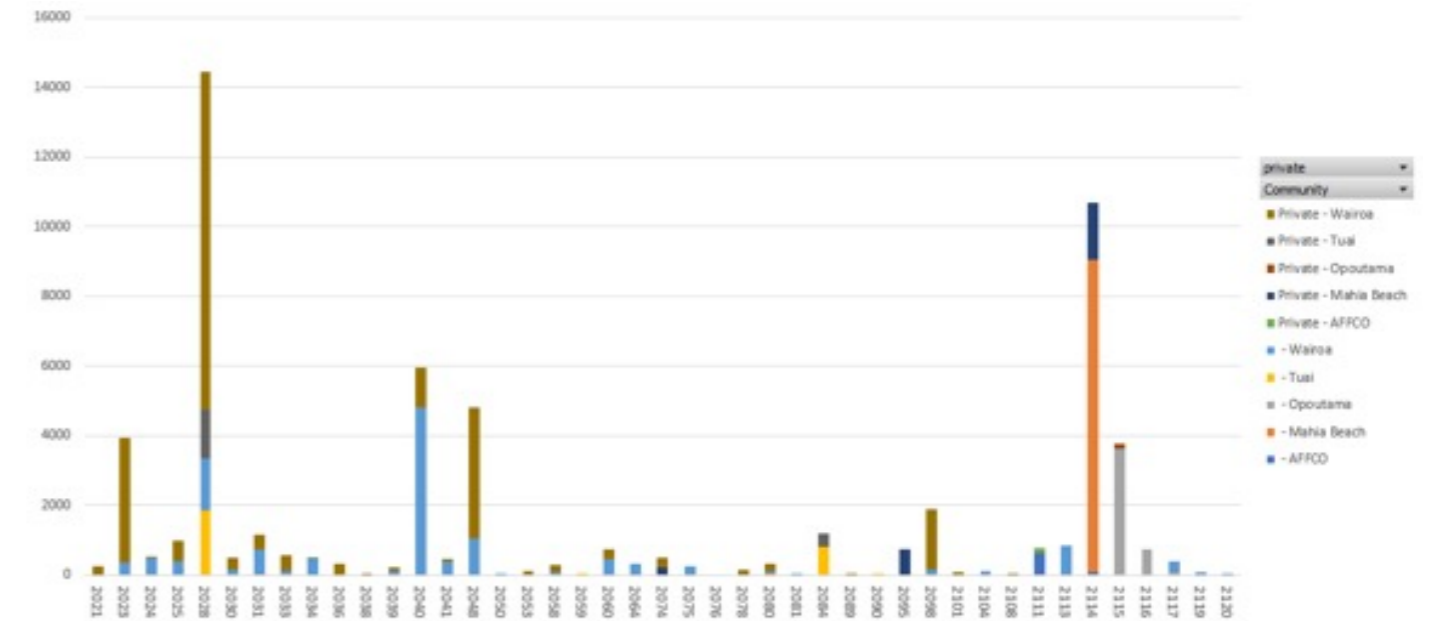
Reticulation assets condition is included in the dashboard in Section 6.3.1. This shows that **37% of the reticulation pipes are in Poor or Very Poor condition**. The maps show the locations of these Poor and Very poor reticulation assets. 11.7% of the reticulation assets have unknown condition.

IMPROVEMENT ITEM – While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through CCTV inspections and materials testing.

Remaining useful life

The graph below shows the profile of remaining useful life for reticulation pipeline. There is a peak of approximately 14km of pipeline coming to the end of its useful life in 2028, which correlates with the age of the pipe network.

The graph also shows how much of the reticulation pipe length is in private property versus pipeline in public road reserve, which will impact on the type of renewal option. 21.8km of pipe is predicted to reach its end of useful life over the next 10 years, with 14.4km in 2028. The next peak of predicted renewal is in 2040.



Above ground assets

Condition for above ground assets is assessed at a detailed level on a case by case basis. We use external Consultants to complete these assessments and provide recommendations of future works to be completed as a result.

A recent assessment has been carried out by WSP for our Wastewater Pump Stations. The overall rating for each pump station as well as their worst component and respective rating are shown below.

Pump Station	Overall Rating	Worst Component	Component Rating
Alexander Park	3 – Average Condition	Main pump chamber safety railing	4 – Poor Condition
North Clyde	3 – Average Condition	Main pump chamber safety railing	4 – Poor Condition
Rutherford	3 – Average Condition	Pump float support bar	4 – Poor Condition
Kopu	4 – Poor Condition	Pump lifting beam and connections, valves	5 – Very Poor Condition
Fitzroy	3 – Average Condition	Safety railing and stairs in pump chamber	4 – Poor Condition

IMPROVEMENT ITEM - Develop a scheduled maintenance programme to cover weather tightness (spouting, roofing, housings) as well as general maintenance programmes. Inspect all pump stations each year with a scheduled maintenance programme once per year on average.

Performance of the network is not formally measured and is based more on staff knowledge, CSRs and feedback from contractors undertaking maintenance works. The treatment plant has a more proactive approach with the system frequently checked to ensure water is treated to the required standards.

6.3.4 ASSET PERFORMANCE

Performance of an asset relates to the ability of the asset to meet defined service criteria.

Generally speaking, it is considered that the sewerage networks and wastewater treatment facilities are performing with conditions of consent generally being met, an effective maintenance contract is in place and the majority of performance targets are being met.

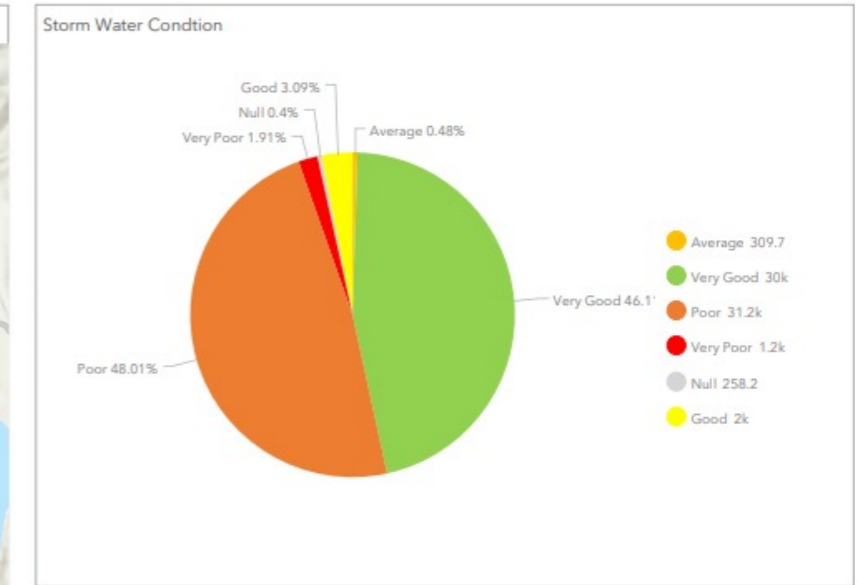
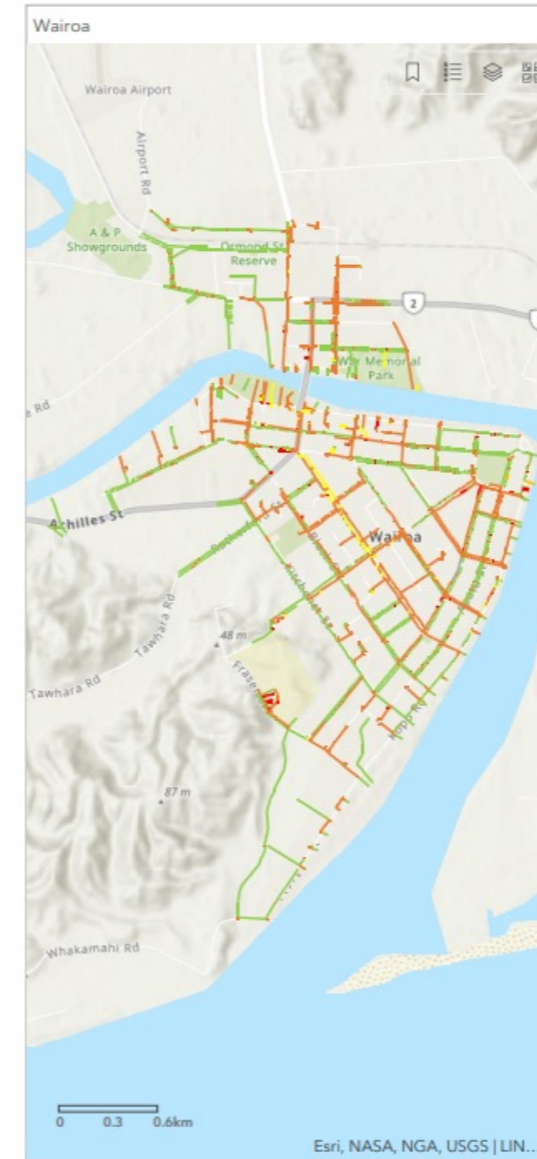
The exceptions are outlined in the table below:

Performance Exception	Description
Unconsented Discharge of Sewerage	<p>At times, there are also non-compliant discharges (outside permitted hours) of treated wastewater from the treatment pond across the outfall which has resulted in Council receiving infringement notices.</p> <p>Whilst it is recognised that the treatment plant is being assessed in terms of an upgrade or new facility as part of the consent renewal process (current consent expired in 2019 and is currently in process of renewal), a short-term remedial solution has included cable upgrade and automated discharge times.</p>
Inflow & Infiltration	<p>The extent of inflow and infiltration of stormwater into the wastewater system during times of wet weather has significantly reduced since the Inflow project commenced. This project is 99% completed. There are properties where there are broken or ground openings into sewer pipes as a result of the smoke testing and also 3 sewer manholes needing repairs. This work is programmed to be carried out. There will also be a review to ensure all the down pipes discharging into the sewer network have been picked up.</p> <p>To date this project has resulted in:</p> <ul style="list-style-type: none"> • 123 properties' down pipes diverted • 194 Gully Traps have been either replaced, repaired or raised • 13 sumps disconnected from the sewer pipe work, and • 12 open sewer pipes capped.

6.4 STORMWATER ASSETS

6.4.1 ASSET DESCRIPTION

The four wastewater systems are outlined below.

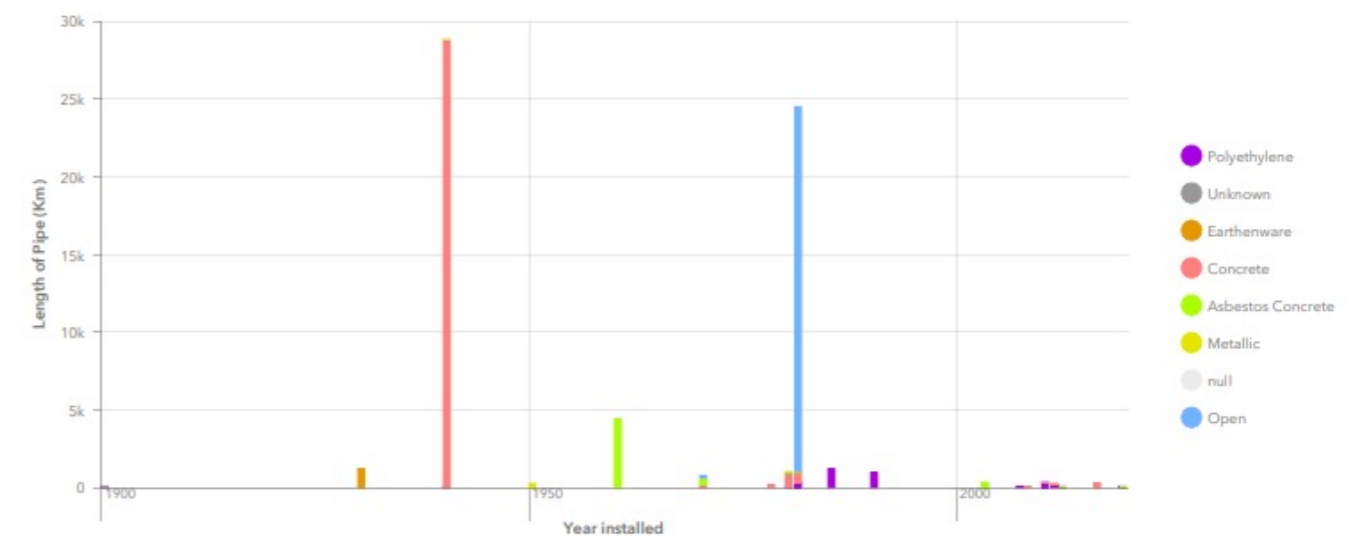


Stormwater assets include:

- Approximately 41.86km of stormwater reticulation with more than 75% of the network deemed to be over halfway through its expected life
- 37.8km of stormwater pipes
- 3.39km of culverts
- 0.6km of stormwater channels
- 23km of urban open drains / channels
- 219 manholes
- 914 sumps
- 1063 Inlet structures

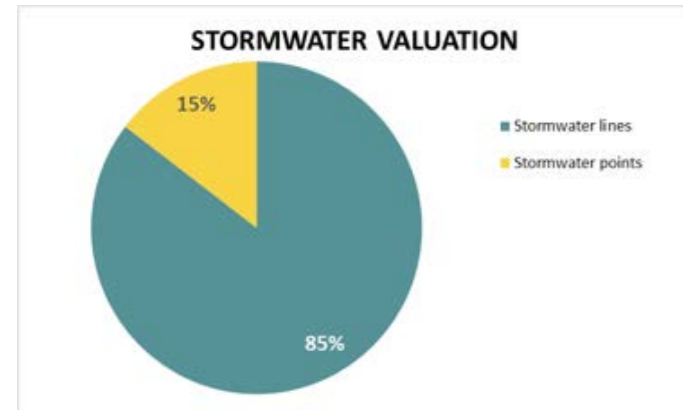
The AMP concentrates on the Wairoa, Māhia and Tuai systems. Stormwater assets in other areas, primarily rural open drains, are generally dealt with as roading assets.

Storm Water Year Installed



6.4.2 ASSET VALUATION

The last valuation of the network and the water treatment facilities was completed in June 2020 by WSP. A full summary of valuation outputs is included in Section 8.3. The total value of Wairoa's stormwater assets is \$24.32M (Optimised Replacement Cost). The total depreciated value is \$6.96M (Optimised Depreciated Replacement Cost).



6.4.3 ASSET CONDITION & REMAINING LIFE CONDITION

Condition information of the stormwater assets is based primarily on visual assessments and age with some information gathered through reactive works etc. This information is stored on Council's asset database, AssetFinda.

Condition Rating Gradings

Condition Rating	Description	Intervention
1	Very Good Condition	None required
2	Good Condition	Minor defects only, programme proactive maintenance or monitor
3	Fair or Average Condition	Some defects, maintenance required to return to accepted Level of Service
4	Poor Condition	Substantial defects, consider renewal
5	Very Poor Condition	Approaching unserviceable, consider disposal or replacement

*condition definitions (IIMM 2015)

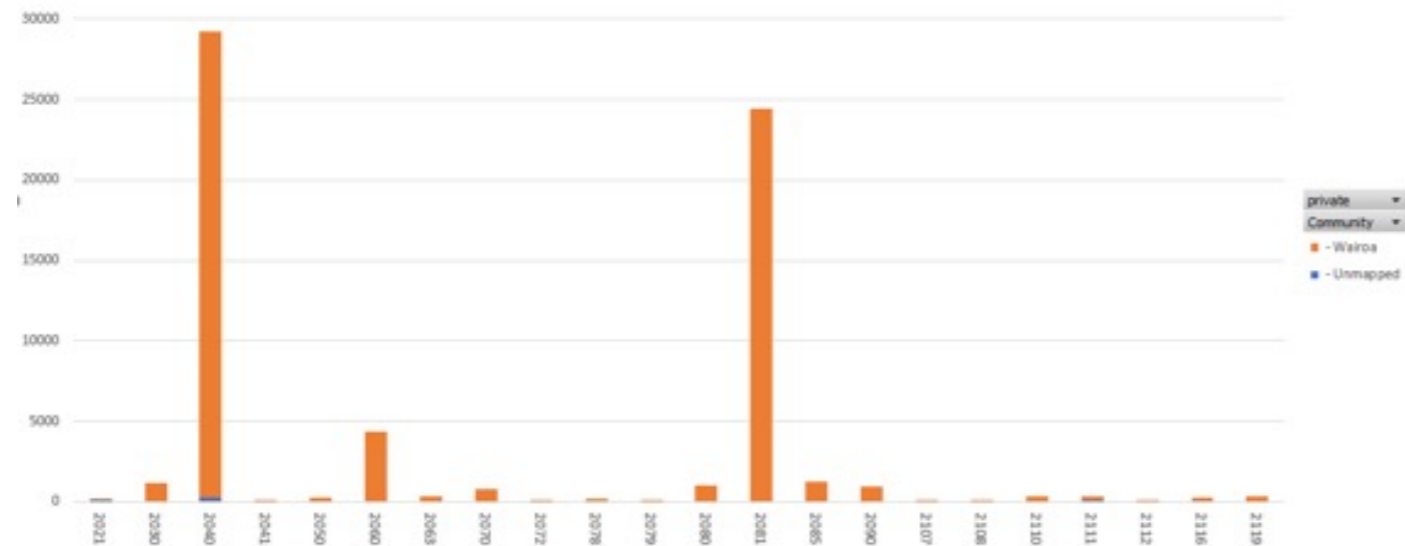
50% of stormwater assets are in Poor or Very Poor condition based on age. This condition has not been validated through specific materials testing. In the order of 75% of the pipes are concrete. Council has insufficient information to fully determine the material or condition of the older pipes, although it is likely to be concrete or earthenware.

The 46% of stormwater assets in Very Good condition are open drains assets. This condition rating has been assigned generically to all open drain assets and needs to be verified in the field.

IMPROVEMENT ITEM – Council needs to better determine the age and condition of all stormwater assets, to enable forward planning to be effectively implemented to replace and repair assets at the most appropriate time.

Remaining useful life

The graph below shows the profile of remaining useful life for reticulation pipeline. There is a peak of approximately 30km of pipeline coming to the end of its useful life in 2040, which correlates with the age of the pipe network.



6.4.4 ASSET PERFORMANCE

Performance of an asset relates to the ability of the asset to meet defined service criteria.

Performance of the network is not formally measured and is based more on staff knowledge, CSRs and feedback from contractors undertaking maintenance works. The treatment plant has a more

proactive approach with the system frequently checked to ensure water is treated to the required standards.

Although the majority of performance targets are being met, customer satisfaction is relatively low for stormwater, primarily due to blockages within the network.

The exceptions are outlined in the table below:

Performance Exception	Description
Inflow & Infiltration	<p>The extent of inflow and infiltration of stormwater into the wastewater system during times of wet weather has significantly reduced since the Inflow project commenced. This project is 99% completed. The Project has identified blockages and these are being addressed through the Maintenance and Operations Contract.</p> <p>To date this project has resulted in:</p> <ul style="list-style-type: none"> • 123 properties' down pipes diverted • 194 Gully Traps have been either replaced, repaired or raised • 13 sumps disconnected from the sewer pipe work
Stormwater Discharge Consent Process	<p>Council is preparing a global resource consent application to address all public stormwater systems in Wairoa township. Through this process, and as a result of the water reforms, there is the likelihood that the quality of stormwater being discharged into the environment will need to be improved.</p> <p>Initial results are showing worse quality than wastewater. Need to consider interceptors to redirect to sewers to be treated.</p>

7. LIFECYCLE MANAGEMENT

7.1 INTRODUCTION

Affordability is a key issue for Wairoa District, so achieving value for money is critical. Population and socio-economic depravity indicators have a significant impact on affordability of the Three Waters activity, with limited ability for the ratepayers to finance any increases in maintenance and renewals costs.

A key affordability driver is ensuring asset integrity – through a whole-of-life approach, implementing good asset management planning including lifecycle management planning and modelling. In the context of this plan, the lifecycle of an asset is “understanding the rate of change.” The primary objective is to know when to maintain OR renew OR improve (upgrade through capital works) an asset or its component.

This section of the AMP outlines:

- Operation and maintenance plans
- Planning for renewal of assets
- Upgrade and creation of assets for activities and services delivered to the community
- Disposal.

It describes Council’s practices that are delivering current Levels of Service, and explores opportunities to enhance the asset lifecycles through condition monitoring.

One of the keys to good lifecycle management is better data (confidence) and better interpretation of that data to enable more informed decisions. This enables us to ‘get the best out of our infrastructure’ and is of particular importance for mature and critical assets.

It is also critical that management and funding of established assets and capital development meets all resource consent and safety requirements in order to ensure that Three Waters services remain viable within the Wairoa District to serve the needs of this District.



7.2 OPERATIONS & MAINTENANCE PLAN

Maintenance strategies cover the practices that we employ to operate and maintain the Three Waters assets to achieve the optimum use of the asset, and at the agreed service levels.

Maintenance of an asset does not increase the asset’s service potential or keep it in its original condition. It slows down deterioration and delays when rehabilitation or replacement is needed. It is a way of ensuring that an asset continues to deliver the required Level of Service.

Operations and maintenance for the Three Waters Activity comprise the following:

O&M TYPE	Description
Operations	Operations are the day-to-day activities completed to provide the service, including: service location, meter readings etc.
Routine Maintenance	Regular ongoing day-to-day work that is necessary to keep assets at their required standards, such as mains flushing. Routine maintenance also includes for the regular monitoring of consents.
Reactive Maintenance	Maintenance that is completed as a result of asset failure or deterioration, such repairs to pipes.
Preventative Maintenance	Maintenance that is completed proactively to ensure an asset does not fail, such as annual activities.
Emergency Works	Responding to emergency needs to secure and/or repair any failure deemed to be a danger to safety and/or health or in contravention of legislation and/or resource consents.

7.2.1 SERVICE DELIVERY ARRANGEMENTS

Water Services Physical Works Contract

Council implements service levels for the Three Waters activity operations through its Operations and Maintenance contract, which is predominantly performance based, utilising KPIs that fully reflect the objectives of Wairoa District Council in achieving best practice performance and service excellence to its customers. This contract is for delivery of the operations and maintenance of Councils Water Services Assets, and some improvement works. This includes the reticulation for the Three Waters and treatment systems for the wastewater.

Council commenced a Three Waters Maintenance Contract (Contract No. 17/01) with Fulton Hogan on 1 July 2017. The contract has two separable portions that allow for extension of the contract to six years in total, until 30 Jun 2023.

Scope of Contract

The scope of Operations & Maintenance contract works include all maintenance services to water, wastewater and stormwater networks within the Wairoa District as below.

Activity	Systems	Inclusions	Exclusions
Water Supply	Routine and preventive maintenance of the following systems: <ul style="list-style-type: none"> • Wairoa District Council Wairoa / Frasertown –reservoirs, reticulation • Tuai – includes treatment plant and associated reticulation • Māhanga – supplementary non-potable supply 	<ul style="list-style-type: none"> • Investigation of all faults within specified response times. • Prioritisation and completion of maintenance repairs. • May include renewals as directed by Council. 	<ul style="list-style-type: none"> • The operation and maintenance of the telemetry system at the Water Treatment Plant in Frasertown. • The operation and maintenance of the Water Treatment Plant and associated pump stations.
Wastewater	Maintenance and repair of the Wairoa District Council Wairoa and Tuai wastewater systems, including reticulation, pump stations and discharge systems.	<ul style="list-style-type: none"> • Routine and preventive maintenance (as directed by Engineer) • Reactive maintenance (as directed by Engineer) • Emergency Works • Tankered Effluent • May include renewals as directed by Council. 	<ul style="list-style-type: none"> • Maintenance/repair of electrical components and telemetry systems • Maintenance of fixed standby generators
Stormwater	Stormwater systems in Wairoa within the town limits. The contractor may be required to undertake specialist activity such as pipe clearing in rural areas.	<ul style="list-style-type: none"> • Routine and preventive maintenance (as directed by Engineer) • Reactive maintenance (as directed by Engineer) • Emergency Works • May include renewals as directed by Council. 	Rural systems, primarily comprising open drains are specifically excluded as being part of the roading network.

The style of the Contract is a collaborative style with the contractor demonstrating performance against Key Performance Indicators (KPI’s).

The contract also includes an element of capital works in the form of capital renewals. These works will be scoped and priced on a case by case basis using tendered rates as the basis for demonstrating value for money.

The intent of the contract is to form a close working relationship between Fulton Hogan and the Wairoa District Council to achieve, or exceed, the expectations of customers.

Drivers for the contract, to ensure these outcomes are achieved, are, in priority order:

- Maintaining best practice quality standards

- Technical savvy, and drive to continuous improvement
- Cost effectiveness
- Contractor performance commitment to service response
- Flexibility
- Meeting Ratepayer expectation.

Contributing to Levels of Service

The Contractor plays a significant part in ensuring delivery of Wairoa District Council’s Levels of Service, as outlined blow.

Customer Outcome	Contractor Responsibility
Safety	<ul style="list-style-type: none"> Comply with DWSNZ through the operation of the supply. Comply with applicable resource consents conditions. Take all sufficient precautions for the safety of the public, traffic and workmen employed on or near the works and shall comply in all respects with the Health and Safety in Employment Act. implement an appropriate management regime to ensure no cross contamination occurs between water and sewerage works.
Reliability / Quality	<ul style="list-style-type: none"> Ensure planned maintenance, inspections and monitoring of telemetry and responding to alarms result in a reliable supply and maintains the life of the assets. Inform customers of planned (minimum 48 hours' notice) and unplanned disruptions. Consult with water-dependent customers prior to planned shutdowns. Respond to service requests within the required timeframes, which includes fixing leaks, repairs to damaged pipes and associated assets, and clearing blockages
Resilience	<ul style="list-style-type: none"> Provide adequate resources to undertake emergency works from time to time and to secure and/or repair any fault or blockage within the system that is deemed a danger to the safety of the public. Resolve service requests within the required timeframes which includes fixing leaks, repairs to damaged pipes and associated assets, and clearing blockages.

7.2.2 IN-HOUSE DELIVERY

Wairoa Water Treatment Plant

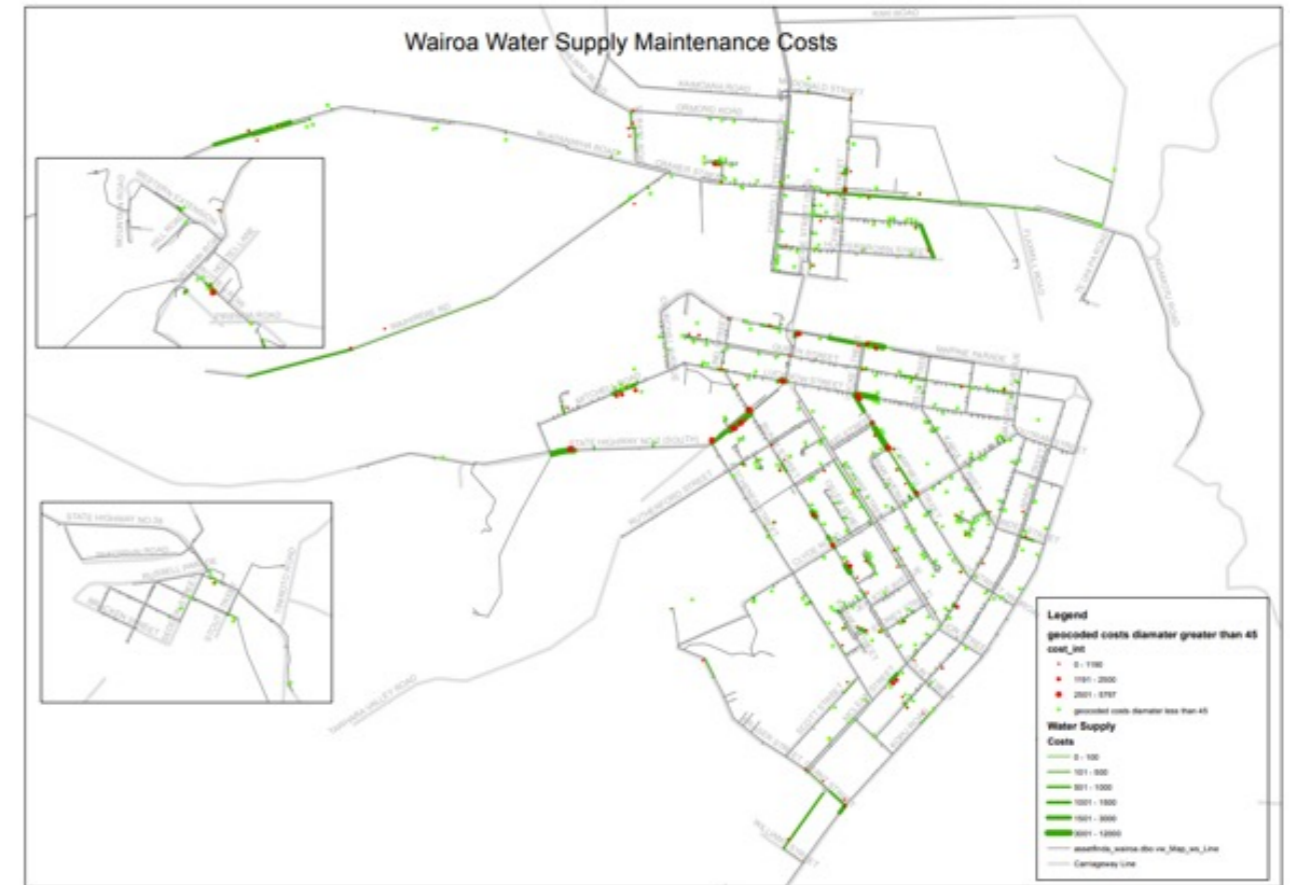
The water production activity is operated and maintained by in-house staff. Contractors are engaged as needed to undertake maintenance and repair work either under the day works provision of the reticulation maintenance contract or through Council's procurement procedures for more significant or specialist works.

The Wairoa District Council Water Treatment Plant Operations and Maintenance Manual outlines:

- Health & safety requirements
- Operating procedures for the plant
- Maintenance procedures – routine maintenance (daily, weekly, monthly etc)
- Quality assurance procedures.

7.2.3 MAINTENANCE COSTS

Maintenance cost recording is the responsibility of the Contractor. The current maintenance contractor does not use Council's AssetFinda data system for recording these costs, so up to date information is not available. However, a spatial review of maintenance costs in 2015 was completed¹⁶. The resulting mapping from this review is shown below. While this information is out of date, it gives an indication of areas with high faults.



IMPROVEMENT ITEM – Complete maintenance cost data collation in AssetFinda and geo-reference costs for future analysis.

7.3 RENEWALS PLAN

Renewals are generally defined as major work which restores, rehabilitates, replaces or renews an existing asset to its original condition/function. Renewals ensure that the reliability of an asset is maintained by replacing it to its original capacity with an extended life. To ensure a balanced budget under the LGA 2002, asset depreciation is used to fund renewals.

Assets identified for renewal are typically:

- Near or beyond the end of their expected life and no longer economic to maintain
- Have known condition and/or performance deficiencies
- Have both known deficiencies and are of a critical nature.

The degree and accuracy of our data capture is improving. Council will continue to build on the level of understanding we have on our Three Waters infrastructure, particularly its condition. Water networks were predominantly installed during the post war periods. This means the networks are ageing and nearing the end of their defined useful lives. The ensuing increase in costs to replace these will place fiscal pressures on Council.

7.3.1 RETICULATION RENEWALS

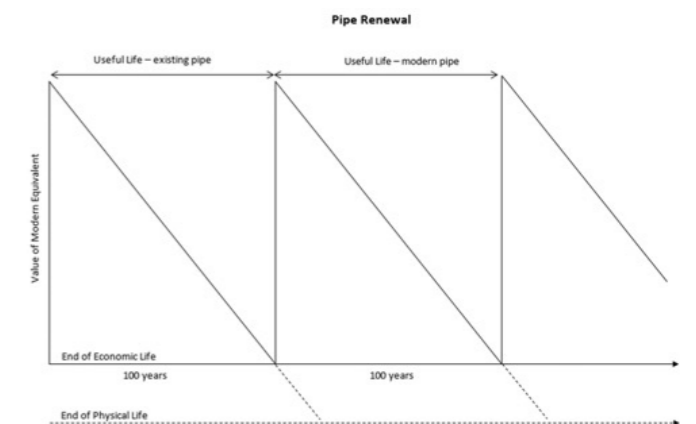
Renewal Options

Wairoa District Council uses two approaches to treatment of an asset when it is rehabilitated:

- Pipeline is rehabilitated**, e.g. the pipeline is lined with a cured in place liner (trenchless pipeline renewal). Wairoa District Council only uses this option for the wastewater reticulation asset renewal. This is a good option where pipelines run under private property and cannot easily be replaced using trenching techniques.

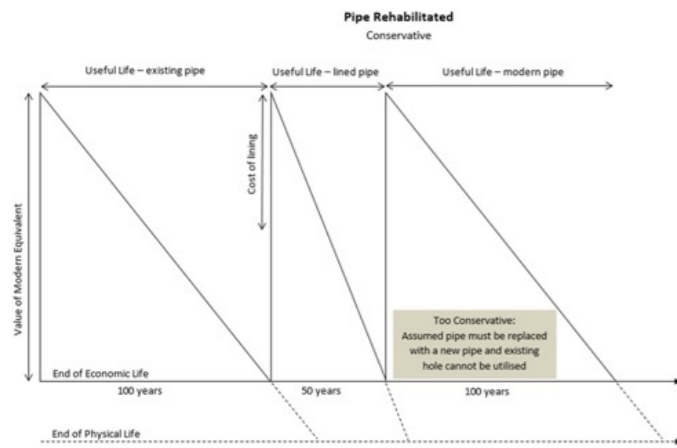
- Full pipeline replacement**

The approaches differ in how the asset is treated after it is rehabilitated. The following diagrams show the pipe renewal lifecycle for full replacement versus relining.

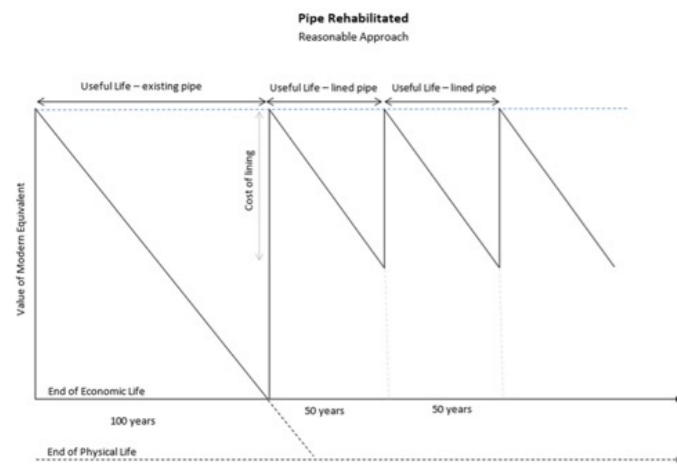


When the asset is renewed its value is reset to that of a modern equivalent pipe which should be the cost nominally spent to renew the pipeline. What is uncertain is how to treat the asset after rehabilitation, as rehabilitation is a relatively new technology and very few rehabilitated pipelines have been renewed. A conservative approach is to assume that once a pipeline has been rehabilitated it cannot be rehabilitated again and the pipeline must be replaced with a new pipe at the end of the life of the lining.

¹⁶ Opus International Consultants (31 August 2015). Geocoding QRS Maintenance Costs Methodology



Whilst it is true that repeated rehabilitation would eventually reduce the diameter of the pipe to an unacceptable small level, there are techniques available, such as pipe reaming, where the liner is cut out the pipe and replaced with a liner of the same diameter. Therefore, a more realistic approach assumes that the pipeline can be rehabilitated multiple times. Wairoa District Council will review on a case by case basis which renewals option is most appropriate for each pipeline renewals project.



Renewals Methodology

The current renewal plan is based on the age and condition information in AssetFinda and visual assessment.

Pipeline Renewal Methodology = Year Installed + Pipe Material Useful Life

The above equation provides the initial renewal profile, which has been indicated for each of the Three Waters in Section 6.

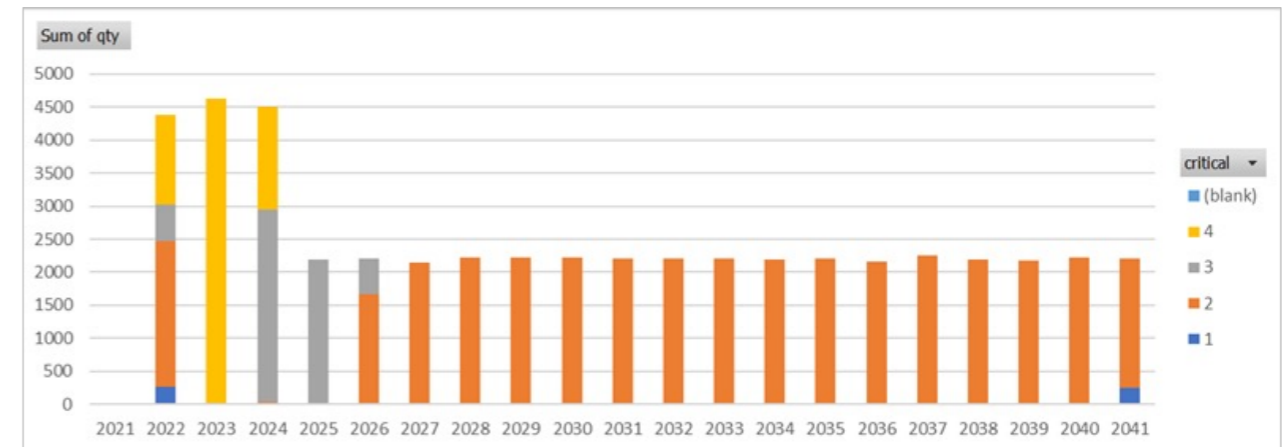
This data is then refined and renewals prioritised based on a number of factors, including:

- **Failure History** – based on maintenance contractors fault repairs and our operations team’s knowledge of performance issues.
- **Asset Criticality** – those assets that are most critical and service more users i.e. production pipelines and mains are more critical than general reticulation pipes and laterals.
- **Asset Material** – some materials can tend to deteriorate more quickly at the end of their life than others (e.g. Asphaltic Concrete pipes) and therefore need more proactive renewal approach.
- **Asset Condition** – where specific condition data has been collated from inspections and materials testing (rather than just based on age).
- **Correlation with other Council works** – where there are programmed roading rehabilitation works, we look to align our renewals programme with these.

Water Supply Renewals

As outlined in Section 6.2.3, water supply reticulation assets have a “backlog” of pipes requiring renewal, based on remaining useful life data. While this does not necessarily mean all of these pipes are about to fail, it does give an indication that a proactive renewals programme is required to limit the risk of significant network failures in future.

In order to prioritise the future renewals into an affordable programme, the factors above have been used to spread the renewal need over a 20 year period. The graphs below demonstrate how prioritisation has been used to ensure the proactive renewal of key areas of the network as well as critical assets.



Specific locations that are prioritised for renewal within the first 5 years of the programme include:

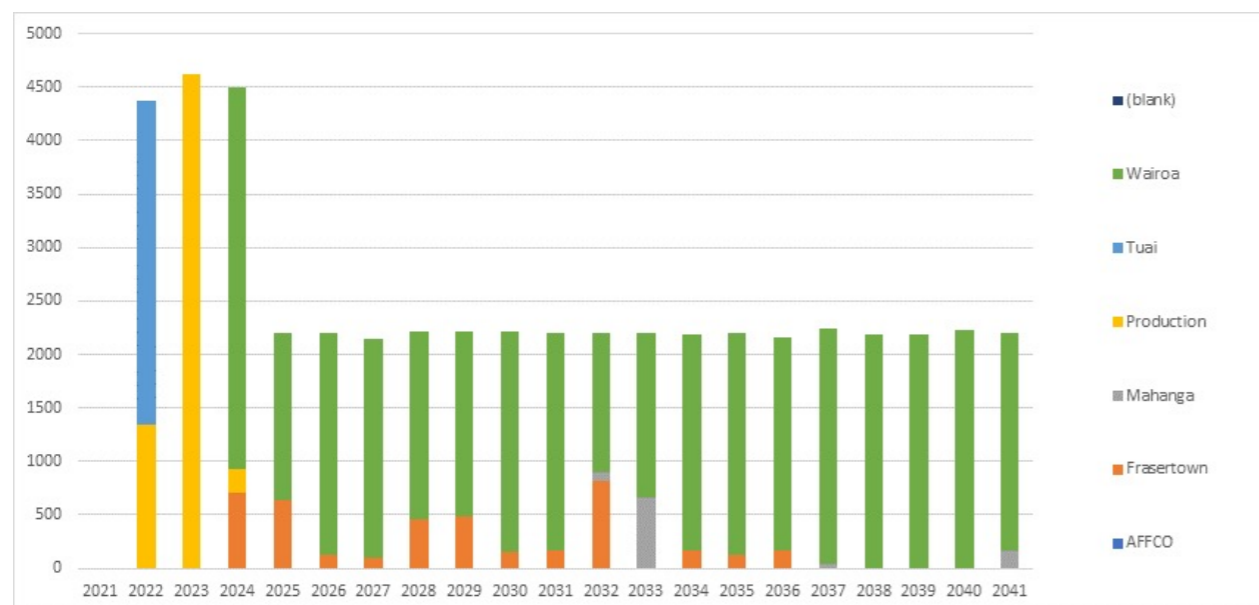
- Tuai reticulation – 3km (some of this length is mains which are due for full upgrade and won’t be include in future renewals)
- Production mains – 6.2km
- Rutherford mains

- Mclean Street mains
- Black Street mains

7.3.2 RENEWALS PROGRAMME

Key focuses for the renewals plans for Three Waters are included below.

Activity	Renewal Requirements
Water Supply	<ul style="list-style-type: none"> • Limited amount of reticulation renewals has been completed in the last 10 years. This means there is a “backlog” of pipes needing replacement. • Tuai is a key area of focus for renewal due to leakage issues and so works can be completed ahead of consent renewal. • Production pipelines are high priority for renewal in 2024/25 and 2024/25. These are pipes that run from the Water Treatment Plant to the Wairoa tanks/reservoirs, as well as from the water intake to the Wairoa Treatment Plant.
Wastewater	<ul style="list-style-type: none"> • Ongoing renewals have been completed over recent years. • Relining to be completed as a renewal option where pipes are within private property. • Central government funding of \$11M for 2020/21 will be used to complete some renewals works that were originally programmed for the 2021-2026 period.
Stormwater	<ul style="list-style-type: none"> • Limited renewals requirements based on age and condition of existing assets. More focus on improvements.



There are \$14.2M renewals planned for Three Waters over the next ten years. This consists of the following programmes. Key renewal projects and programmes (with 10 year cost ≥\$100k) have

been prioritised using our investment decision making criteria described in Section 9.2.1. Each investment criteria is assigned one of the following ratings:

 High
  Medium
  Low

Activity	Renewal Requirements	10 yr Cost	Strategic Alignment	Service Delivery	Risk & Criticality	Financial Impact	Priority
Water Supply							
Reticulation Pipes	Renewals, including: • AC pumping main • Intake to Plant main	\$3.2M					High
Reservoirs	Sealing reservoir roofs / tops as per MOH	\$448k					High
Valves	Replacements	\$776k					High
Vehicles	Purchase new vehicles	\$220k					Medium
Wairoa Treatment Plant	General renewals	\$319k					High
	Boundary pump valves (2 per year)	\$170k					High
	Sheet pile protection for intake	\$121k					High
	Safety Improvements	\$114k					High
Wastewater							
Reticulation	Programmed renewals (pipe replacement and pipe lining)	\$1.8M					High
Kinikini Access Road	Road metaling to access Māhia WWTP	\$415k					Medium
Pumps	Pump overhauls	\$157k					High
Pump Stations	Pump Station Upgrades	\$714k					High
Stormwater							
Reticulation pipes	Programmed pipeline renewals	\$279k					High
	CCTV Inspections to determine condition	\$107k					High

7.4 CAPITAL / UPGRADE PLAN

New works are those works that create a new asset that did not previously exist, or works that upgrade or improve an existing asset beyond its existing capacity. Council will continue to invest in waste infrastructure with the main drivers being:

Capital works projects are generally required to meet resource consent conditions / legislation requirements or to upgrade existing systems to meet new Levels of Service.

In addition, Hawke's Bay's four local Councils have all signed up to the Central Government reform process. As a result, \$50m will be

allocated for immediate Three Waters investment. **Wairoa has been allocated \$11.04 million from this fund**, which will be used to fund a significant portion of the capital upgrade projects listed below.

7.4.1 KEY PROJECTS

There are \$11.9M capital upgrade projects planned for Three Waters over the next ten years. Key projects (with 10 year cost ≥\$100k) programmed over the next 3 years have been prioritised using our investment decision making criteria described in Section 9.2.1. Each investment criteria is assigned one of the following ratings:

 High
  Medium
  Low

Project	Year	10 Yr Cost	Strategic Alignment	Service Delivery	Risk & Criticality	Financial Impact	Priority
Water Supply							
Smart meters installed on all Wairoa Township	2021/22	\$1.3M					High
Tuai Retic Upgrade	2022/23	\$448k					High
Wastewater							
Ōpoutama / Bluebay Stage 1 - WWTP upgrade	2021/22	\$190k					High
Ōpoutama / Bluebay Stage 2 - WWTP / Irrigation field expansion	2021/22	\$750k					High
New Wairoa WWTP / Upgrade / BNRAS & UV	2021/22	\$1.05M					High
Dedicated Generators in each pump station	2021/22	\$270k					High
CCTV Infiltration Investigation	2026/27 - 27/28	\$348k					High
Wastewater Expansion - North Clyde (Rising Mains)	2021/22 - 22/23	\$359k					High
Outfall (Low Environmental)	2021/22	\$2.03M					High
Storage (Low Environmental)	2023/24	\$1.33M					High
Catchment (Low Environmental)	2021/22 - 27/28	\$546k					High
Fencing & Planting Māhia (to meet consent requirements)	2021/22 - 24/25	\$327k					High
Māhia Beach Sewerage System	2029/30 - 30/31	\$1.8M					Medium

Project	Year	10 Yr Cost	Strategic Alignment	Service Delivery	Risk & Criticality	Financial Impact	Priority
Stormwater							
Piping Open Drains - Wairoa	Various	\$309k	✓	✓	✓	✓	Medium
Māhia Beach Pipelines	2021/22	\$500k	✓	✓	✓	✓	Medium

Council has implemented an annual programme of piping open drains in the urban area (safety and amenity) with an annual allocation of funding. This work is generally completed through the Land Transport activity. However, piping of open drains where there are capacity or flooding issues is completed within the Stormwater activity.

7.5 DISPOSAL PLAN

Disposal is any activity associated with disposal of a decommissioned asset, including sale, demolition or relocation. Asset disposal requires making the site safe, removing surplus structures, and covering the costs of any environmental remediation. These costs are generally included as part of the capital project.

With the Wairoa Treatment Plant consent due for renewal in 2021/22, there may be a requirement to dispose of some assets once a new/ upgraded scheme is complete and commissioned.

IMPROVEMENT ITEM – Full Disposal Strategy to be completed for key projects requiring disposal of assets. This should include ensuring costs are accounted for in project estimates as well as any environmental impact assessment.

8. FINANCIAL SUMMARY

8.1 INTRODUCTION

This section contains the financial requirements resulting from all the information presented in previous sections. It defines the different cost areas (maintenance/operations, renewals and new works) and details the expected expenditure against each.

8.2 FINANCIAL PROJECTIONS

8.2.1 EXPENDITURE CATEGORIES

Expenditure types are defined and reported as follows:

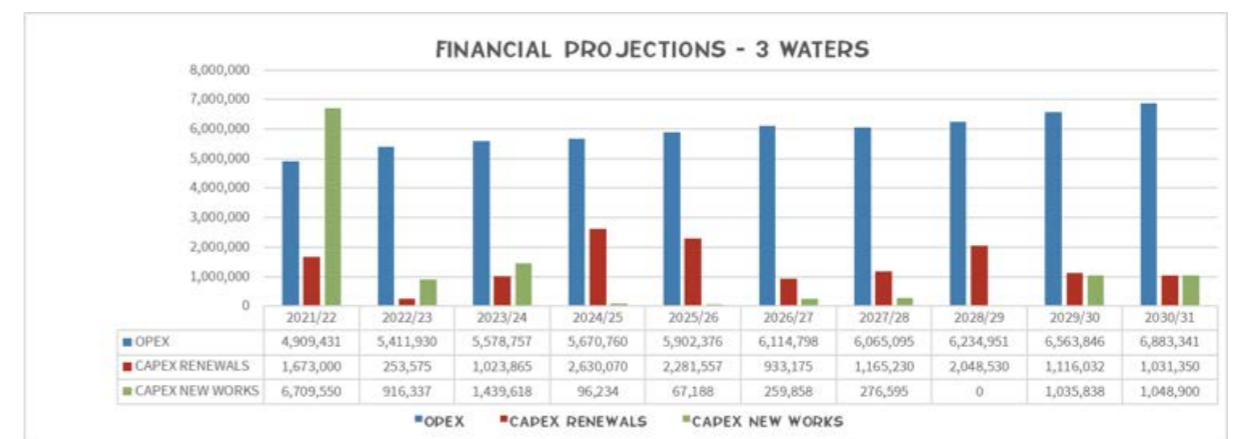
Expenditure Type	Description
Opex	Operating expenditure is used to fund the ongoing day to day activities and services of the Council. It is expensed (not capitalised) work that continues the provision of services provided by assets. Operational activities include repairs and maintenance, security, utility costs (e.g. rates and power)
Capital Renewals	Capital Renewals expenditure increases the life of an existing asset with no increase in service level. It replaces existing deteriorated assets or components of assets to restore their remaining life and service potential.
Capital New Works	Council has two categories of Capital New Works expenditure spread across its activities Level of Service – Defined as capital expenditure that increases the service level delivered by the asset. Growth – Defined as capital expenditure that is required to provide additional capacity in whole or part under Council's Development Contributions Policy necessary to accommodate growth. It is the capitalised works that add new or enlarged existing assets to increase the capacity to cater for further growth in demand.

8.2.2 TEN YEAR FORECAST SUMMARY

The projected expenditure on our Three Waters assets over the next 10 years, an investment of approximately \$85.3 million. The 10 year financial plan is summarised below. This shows the annual expenditure for maintenance and operations to be relatively constant over the 10 year period. However, with the Water Reform outcomes coming into effect from 2024 onwards there is potential for significant operational cost increases. Morrison Low's Regional

Report projected an increase in Operational Costs is approximately 41%¹⁷ regionally for the enhanced status quo option between 2023/24 and 2024/25.

The peak of capital upgrade expenditure in 2021/22 covers projects that make up the \$11M allocated to Wairoa as part of the Central Government reform process.

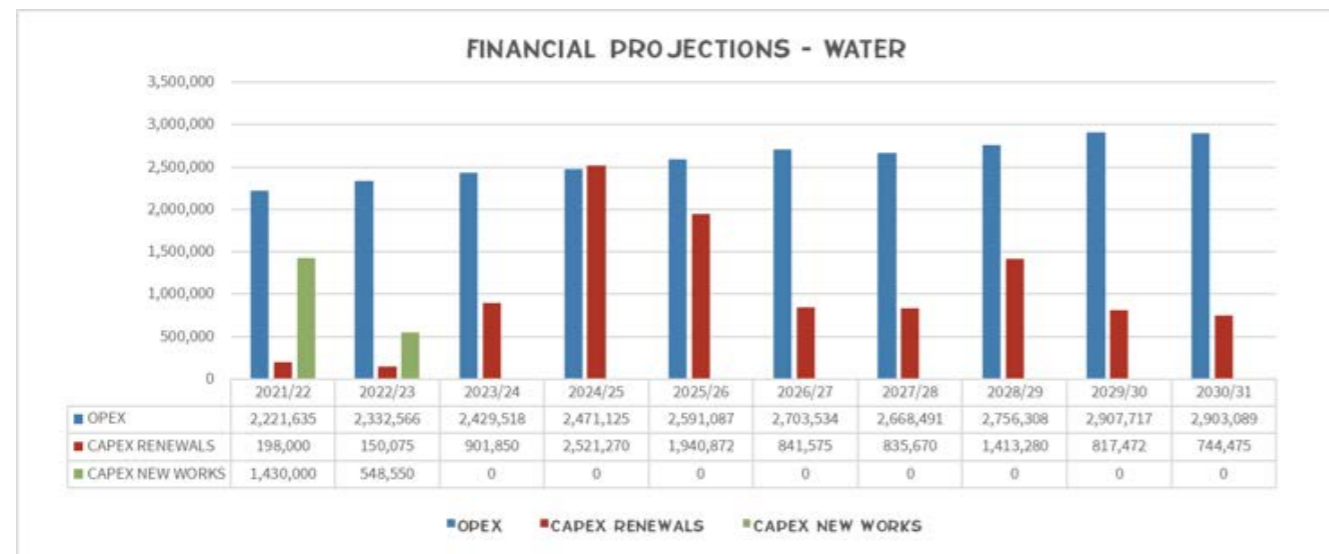


The sections below split the activity into its three individual components of water supply, wastewater and stormwater.

¹⁷Morrison Low (July 2020). Hawke's Bay Three Waters Business Case of Three Waters Service Delivery Options. Table 28, p134

8.2.3 WATER SUPPLY

Water	YR 1 2021/22	YR 2 2022/23	YR 3 2023/24	YR 4 2024/25	YR 5 2025/26	YR 6 2026/27	YR 7 2027/28	YR 8 2028/29	YR 9 2029/30	YR 10 2030/31	Total 10 Years
OPEX	2,221,635	2,332,566	2,429,518	2,471,125	2,591,087	2,703,534	2,668,491	2,756,308	2,907,717	2,903,089	25,985,070
CAPEX RENEWALS	198,000	150,075	901,850	2,521,270	1,940,872	841,575	835,670	1,413,280	817,472	744,475	10,364,539
CAPEX NEW WORKS	1,430,000	548,550	0	0	0	0	0	0	0	0	1,978,550
TOTAL	3,849,635	3,031,191	3,331,368	4,992,395	4,531,959	3,545,109	3,504,161	4,169,588	3,725,189	3,647,564	38,328,159



Over the next 10 years, Council is planning a consistent approach to maintenance and operations of the water supply networks and a planned optimised renewals programme based on ongoing condition assessments of pipelines. The renewals programme will also ensure the current “backlog” of pipes already at the end of their useful life are renewed on a prioritised basis.

- The AC pumping main from the treatment plant to reservoirs.

Key capital upgrade projects include:

- Installing smart meters for all Wairoa township connections
- Upgrade of Tuai reticulation main

Priority renewals include:

- The supply pipeline from the intake on the Waiau River to the treatment plant at Frasertown,

8.2.4 WASTEWATER

Wastewater	YR 1 2021/22	YR 2 2022/23	YR 3 2023/24	YR 4 2024/25	YR 5 2025/26	YR 6 2026/27	YR 7 2027/28	YR 8 2028/29	YR 9 2029/30	YR 10 2030/31	Total 10 Years	
OPEX	2,115,732	2,450,562	2,513,598	2,561,304	2,643,511		2,729,346	2,701,054	2,782,261	2,920,817	3,243,052	26,661,237
CAPEX RENEWALS	1,475,000	103,500	68,965	54,400	61,435		91,600	329,560	635,250	298,560	286,875	3,405,145
CAPEX NEW WORKS	4,737,550	367,787	1,439,618	96,234	67,188		259,858	276,595	0	883,240	892,500	9,020,570
TOTAL	8,328,282	2,921,849	4,022,181	2,711,938	2,772,134		3,080,804	3,307,209	3,417,511	4,102,617	4,422,427	39,086,952



Over the next 10 years, Council is planning a consistent approach to maintenance and operations of the wastewater networks and a planned optimised renewals programme based on ongoing condition assessments of pipelines, including CCTV infiltration investigation.

Waste water renewals have been bought forward into year 1 from the first 6 years of the 10 year renewals programme, which will be funded as part of the \$11M central government funding. This reduces the need for renewals in subsequent years.

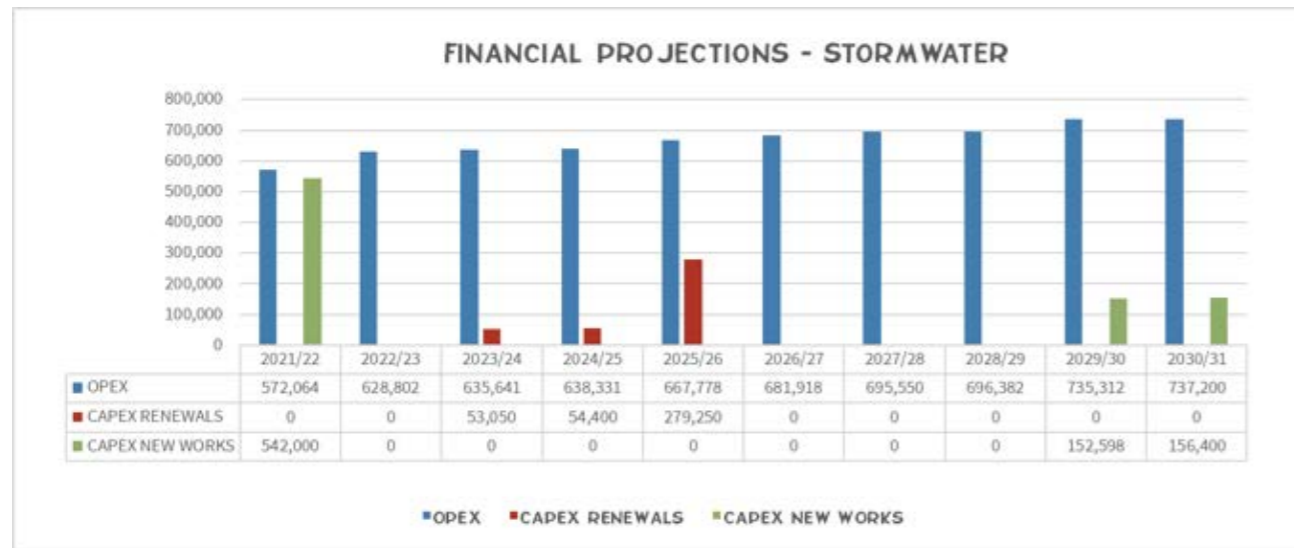
Key capital upgrade projects include:

- Ōpoutama / Bluebay Waste Water Treatment Plant upgrade and irrigation field expansion

- Telemetry basesets – overflow meters to Wairoa town pump station
- Construction of the new Wairoa Waste Water Treatment Plant
- Dedicated generators for all pump stations
- Outfall, storage and catchment projects
- Wastewater Expansion – North Clyde rising main

8.2.5 STORMWATER

Wastewater	YR 1 2021/22	YR 2 2022/23	YR 3 2023/24	YR 4 2024/25	YR 5 2025/26	YR 6 2026/27	YR 7 2027/28	YR 8 2028/29	YR 9 2029/30	YR 10 2030/31	Total 10 Years
OPEX	572,064	628,802	635,641	638,331	667,778	681,918	695,550	696,382	735,312	737,200	6,688,978
CAPEX RENEWALS	0	0	53,050	54,400	279,250	0	0	0	0	0	386,700
CAPEX NEW WORKS	542,000	0	0	0	0	0	0	0	152,598	156,400	850,998
TOTAL	1,114,064	628,802	688,691	692,731	947,028	681,918	695,550	696,382	887,910	893,600	7,926,676



Stormwater expenditure is predicted to remain relatively constant over the next 10 years with a consistent approach to service delivery and a planned optimised renewals programme.

Asset data shows minimal requirement for renewal of stormwater assets before 2040, based on age and condition data. However, condition data is relatively inaccurate compared to water supply and wastewater and further CCTV condition inspections are programmed in 2023/24 and 2024/25. A small amount of pipeline renewals has been included in 2025/26.

Key capital upgrade projects include:

- Piping of open drains in 2029/30 and 2030/31. Other previously programmed work has been bought forward to 2020/21 and funded through the \$11M central government fund.
- Māhia Beach pipelines

8.2.6 KEY ASSUMPTIONS MADE IN FINANCIAL FORECASTS

The following key assumptions have been made when developing the financial forecasts.

- In our financial forecasts we have applied the nationally recognised inflation rates provided by Business and Economic Research Ltd (BERL) based on their assessment of a 'mid-scenario'

- The district population will increase slightly from 2020 estimate. It is expected that growth will primarily occur in Māhia.
- Renewals and capital development assumptions have been made based on the best information available at this time and this is expected to change as knowledge of the assets improves through the extensive data collection and modelling currently being undertaken, for both above ground assets and reticulation.
- The maintenance will be funded from uniform annual charges against those using the service.
- Asset renewals will be funded from depreciation funds and loans. To meet its capital works programme Council will need to borrow. Borrowing is an appropriate funding tool for long term assets. Council will use borrowing prudently to fund the infrastructure that delivers core services now and into the future, without creating an unmanageable affordability challenge.
- \$11M of capital upgrade projects will be funded by central government in 2020/21 and 2021/22.

8.3 IMPLICATIONS OF MEETING BUDGET LIMITATIONS

The implications of meeting budget limitations, including justification for the expenditure forecast and consequences if the budget is reduced, are summarised below.

Expenditure Programme	Justification	Consequences if Budget Reduced
Opex	To meet Levels of Service for public health and consent conditions	Non-compliance with Consent Conditions Any breach of consent condition carries serious penalties and may result in shut down of water services.
	Adequate reactive and proactive maintenance to keep assets functioning and limit failures	Service Disruption to Customers Large amounts of failures will result in disruption of services to the community and may result in more costly repairs to assets as well as other surrounding assets (e.g. roads and private property).
Capital Renewals	Adequate renewals to optimise life of assets and proactively replace assets prior to failure.	Service Disruption to Customers If renewals are not completed proactively, more failures are likely to occur resulting in increased reactive maintenance budgets and disruption of services to the community. Lack of Resilience Aging assets are more susceptible to wide spread failure in the event of flooding, slips and coastal inundation.
Capital New Works	Capital and upgrade works required in preparation for legislation changes resulting from central government Water Reform.	Risk and compliance Assets not meeting increasing standards in the provision of Three Waters service. Lack of Resilience Assets which are not designed to meet additional capacity resulting from climate change and increased intensity rain events.

8.4 FUNDING STRATEGIES & POLICIES

The focus of asset management planning is on identifying the optimum (lowest life cycle) cost for assets necessary to produce the desired Levels of Service. How this cashflow is funded is a matter for separate consideration as part of Council's financial strategy review.

8.4.1 FORECAST FUNDING

The table below outlines the forecast funding for the 10 year period.

District Wide For Activity	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
Revenue Forecast	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Water Supply												
Operations & Maintenance Funding												
Rates	-1,552,354	-1,563,092	-1,667,018	-1,911,214		-2,042,620	-2,159,086	-2,114,867	-2,192,469	-2,346,744	-2,330,964	-19,880,429
Investment and Other	-121,363	-130,876	-108,646	-97,437		-97,058	-97,478	-92,985	-89,102	-86,839	-84,749	-1,006,533
Subsidies	-120,000	0	0	0		0	0	0	0	0	0	-120,000
Fees and Charges	-345,417	-357,480	-366,442	-375,748		-385,743	-395,394	-406,423	-417,797	-429,516	-440,200	-3,920,160
Capital Works Funding												
Reserves	-168,000	-119,025	-859,410	-641,350		-628,871	-841,575	-835,670	-808,280	-817,472	-744,475	-6,464,128
Loan	-30,000	-31,050	-42,440	-1,879,920		-1,312,001	0	0	-605,000	0	0	-3,900,411
Subsidies	-1,425,000	0	0	0		0	0	0	0	0	0	-1,425,000
Other	0	0	0	-30,837		0	0	0	0	-16,470	-18,705	-66,012
Total - Water Supply	-3,762,135	-2,201,523	-3,043,956	-4,936,505		-4,466,293	-3,493,533	-3,449,945	-4,112,649	-3,697,041	-3,619,093	-36,782,672
Waste Water												
Operations & Maintenance Funding												
Rates	-1,941,781	-2,327,314	-2,382,857	-2,453,977		-2,525,832	-2,597,193	-2,559,688	-2,637,776	-2,750,546	-3,053,511	-25,230,475
Investment and Other	-25,951	-31,030	-40,867	-18,539		-30,324	-42,282	-49,531	-51,144	-59,317	-66,942	-415,927
Reserves	-148,000	-190,821	-196,515	-202,226		-207,617	-212,821	-218,769	-224,903	-252,888	-281,948	-2,136,508
Capital Works Funding												
Reserves	-105,000	-51,750	-1,405,825	-54,400		-61,435	-263,350	-506,110	-272,250	-311,000	-286,875	-3,317,995
Loan	-2,477,550	-419,537	-102,758	-96,234		-67,188	-88,108	-100,045	-363,000	-870,800	-892,500	-5,477,720
Subsidies	-3,630,000	0	0	0		0	0	0	0	0	0	-3,630,000
Total - Wastewater	-8,328,282	-3,020,452	-4,128,822	-2,825,376		-2,892,396	-3,203,754	-3,434,143	-3,549,073	-4,244,551	-4,581,776	-40,208,625
Stormwater												
Operations & Maintenance Funding												
Rates	-404,481	-296,687	-296,773	-566,411		-588,596	-602,260	-608,248	-601,221	-632,070	-629,377	-5,226,124
Investment and Other	-66,743	-70,540	-70,723	-71,005		-78,244	-78,695	-86,313	-94,145	-102,195	-106,752	-825,355
Reserves	-100,840	-261,575	-268,145	-914		-938	-962	-989	-1,016	-1,045	-1,071	-637,495
Capital Works Funding												
Reserves	0	0	0	0		-279,250	0	0	0	-152,598	-156,400	-588,248
Loan	-500,000	0	-53,050	-53,050		0	0	0	0	0	0	-607,450
Subsidies	-42,000	0	0	0		0	0	0	0	0	0	-42,000
Total - Stormwater	-1,114,064	-628,802	-688,691	-692,730		-947,028	-681,917	-695,550	-696,382	-887,908	-893,600	-7,926,672
TOTAL	-13,204,480	-5,850,777	-7,861,469	-8,454,611		-8,305,717	-7,379,204	-7,579,638	-8,358,103	-8,829,500	-9,094,469	-84,917,969

8.4.2 CURRENT FUNDING POLICIES

The Council Three Waters activity will be funded in accordance with the financial policies of Council as indicated below.

Programme	Funding Mechanism
Opex	Funded through general rates.
Capital Renewals	<p>Provided by rates, depreciation.</p> <p>Assets are depreciated on a straight-line basis at rates estimated to write-off the cost over the expected useful economic life.</p> <p>To meet its capital renewals works programme Council will need to borrow. Council views 100% of revenue as an important borrowing affordability threshold for its community. This is reflected in our Liability Management Policy.</p>
Capital New Works	<p>Funded by central government water reform funding of \$11M and topped up using loans where applicable.</p> <p>To meet its capital improvement works programme Council will need to borrow. Council views 100% of revenue as an important borrowing affordability threshold for its community. This is reflected in our Liability Management Policy.</p>

8.4.3 PUBLIC BENEFIT VERSUS PRIVATE BENEFIT

WATER SUPPLY

Council's Revenue and Financing Policy has determined that 0% of water costs relate to public benefit and 100% to private benefit. The private benefit portion (100%) is funded via a uniform annual charge (UAC) which is set each year as part of the annual plan process. The exception to this is high users which are metered and charged on a volumetric rate.

UACs are calculated for each separate supply area, thus there is a Māhanga, Tuai and Wairoa UAC, each calculated on costs attributable to that supply.

WASTEWATER

Council's Revenue and Financing Policy has determined that 0% of sewerage costs relate to public benefit and 100% to private benefit. The private benefit portion (100%) is funded via a uniform annual charge which is set each year as part of the annual plan process.

STORMWATER

Council's Revenue and Financing Policy has determined that 20% of stormwater costs relate to public benefit and 80% to private benefit. The public benefit portion (20%) is funded via general rate.

The private benefit portion (80%) is funded via uniform annual charges in the serviced area.

8.4.4 COMMUNITIES' ABILITY TO PAY

The high deprivation index in some areas of the district, highlights the potential for these communities to have difficulty in paying for publicly provided systems, both in terms of capital works and maintaining existing facilities to their intended standards.

The effects of an ageing population may also influence the ability to fund the activity.

WATER SUPPLY

An element of network pricing exists for water services whereby communities receiving the same LOS are included in the same annual charge calculation. This effectively means Wairoa township users subsidise some of Frasertown water users' costs. This does not extend to Tuai and Māhanga where users receive a significantly different LOS.

WASTEWATER

An element of network pricing exists for sewerage services whereby communities receiving the same LOS are included in the same annual charge calculation. This effectively means Wairoa sewerage users subsidise some of Tuai sewerage users' costs.

8.4.5 IMPLICATIONS FROM FUTURE REFORM

Over the short term, Council will continue to be responsible for the core infrastructure activities included in this strategy. However, the Government's launch of the Three Waters Reform Programme (a three-year programme to reform local government Three Waters service delivery arrangements), indicates reform of local government's Three Waters services into a small number of multi-regional entities with a bottom line of public ownership. Preparation for operations of new water services entities is likely to commence from 2023. While this is the case, financial planning for the 10 year period has been based on the scenario of Council continuing to deliver Three Waters services, due to the uncertainty surrounding future service delivery.

8.5 ASSET VALUATION

The last valuation of the network¹⁸ and the water treatment and wastewater facilities¹⁹ was completed in June 2020 by WSP.

Key outputs from this valuation are:

- Asset component schedules for each type of asset and comparison with the previous valuation;
- A confidence assessment of the current information in the Asset Register;

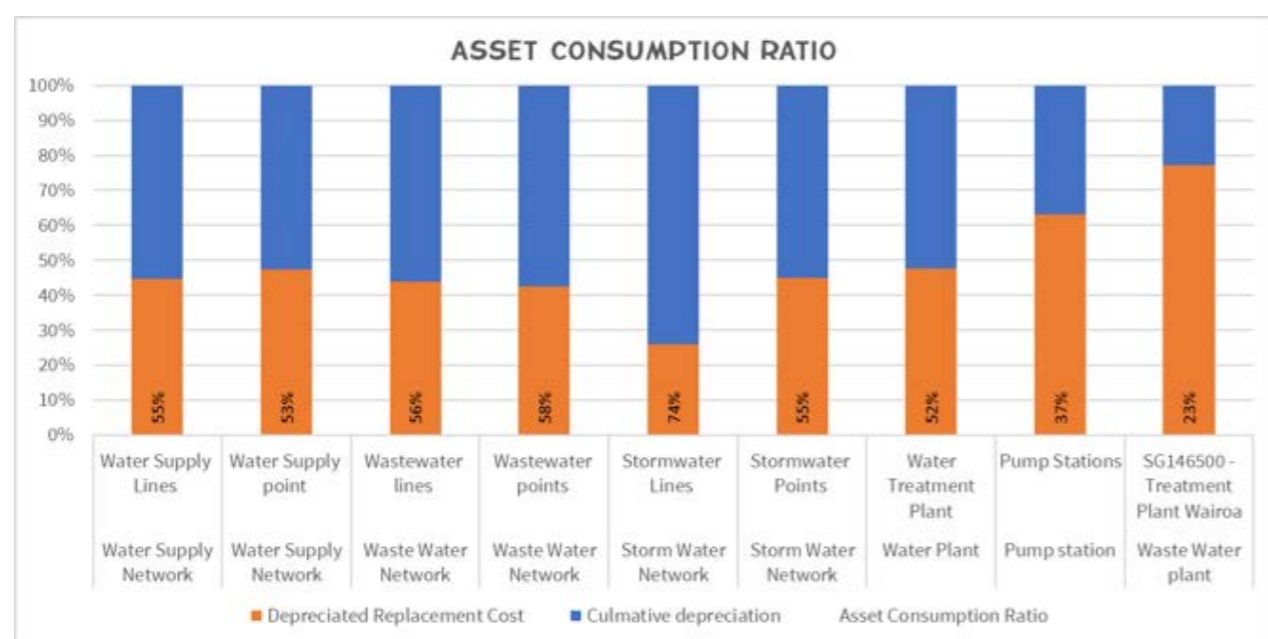
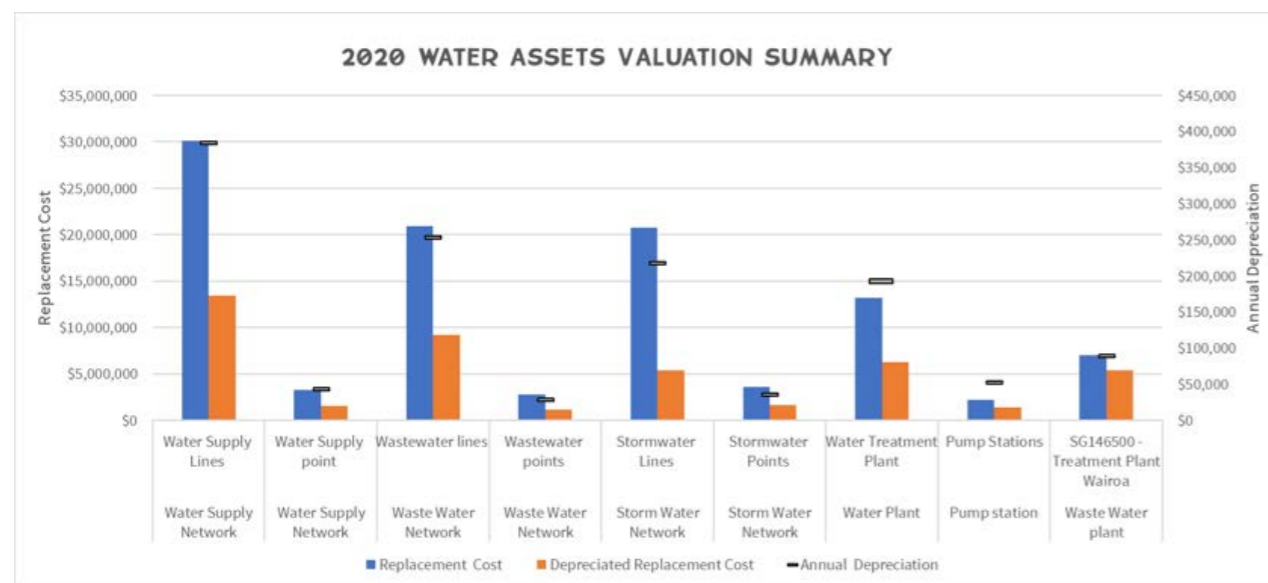
- Improvement recommendations for the Council asset register and associated valuation inputs;
- Optimised Replacement Cost (ORC);
- Optimised Depreciated Replacement Cost (ODRC);
- Annual Depreciation (AD);
- Cumulative Depreciation (CD).

The total asset valuation assessment is detailed in the table below.

Asset Group	Asset	Optimised Replacement Cost	Optimised Depreciated Replacement Cost	Annual Depreciation	Cumulative Depreciation
Water Supply	Water Treatment Plant	\$9,254,164	\$4,924,373	\$145,174	\$4,329,790
	Frasertown Plant	\$43,767	\$12,255	\$875	\$31,512
	Māhanga Plant	\$361,079	\$93,505	\$9,910	\$267,573
	Tuai Plant / Intake	\$87,534	\$36,327	\$1,422	\$51,207
	Wairoa Tanks	\$3,466,354	\$1,216,690	\$34,664	\$2,249,664
	Water lines	\$30,080,571	\$13,438,927	\$384,324	\$16,641,644
	Water points	\$3,223,524	\$1,526,887	\$43,266	\$1,696,637
Total for Water Supply Assets		\$46,516,992	\$21,248,964	\$619,636	\$25,268,028
Waste Water	Treatment Plant Wairoa	\$3,020,125	\$1,721,756	\$38,230	\$1,298,369
	Treatment Plant Tuai	\$103,199	\$30,366	\$2,528	\$72,833
	Treatment Plant- Māhia Beach	\$3,790,450	\$3,577,908	\$47,064	\$212,542
	Treatment Plant Ōpoutama	\$58,194	\$45,271	\$1,048	\$12,922
	Pump Stations	\$2,223,758	\$1,400,031	\$52,214	\$823,727
	Wastewater lines	\$20,952,693	\$9,188,470	\$253,786	\$11,764,223
	Wastewater points	\$2,769,639	\$1,175,542	\$27,818	\$1,594,097
Total for Wastewater Assets		\$32,918,058	\$17,139,344	\$422,688	\$15,778,713
Stormwater	Stormwater lines	\$20,773,627	\$5,362,628	\$217,357	\$15,410,999
	Stormwater points	\$3,547,587	\$1,596,960	\$35,372	\$1,950,627
Total for Stormwater Assets		\$24,321,214	\$6,959,588	\$252,729	\$17,361,626

¹⁸WSP (20 August 2020). Wairoa District Council Water Network Asset Valuation 2020.

¹⁹WSP (1 September 2020). Wairoa District Council Water Supply Plant Asset Valuation 2020.



Asset Group	Asset	ORC			ODRC		
		ORC1	ORC2	ORC3	ODRC1	ODRC2	ODRC3
Water Supply	Wairoa Plant	B+	C	B-	B-	B-	C
	Frasertown Plant	C	C	B-	B-	B-	C
	Māhanga Plant	C	C	B-	B-	B-	C
	Tuai Plant	C	C	B-	B-	B-	C
	Wairoa Tanks	B	C	B-	B-	B-	C
	Water Supply Lines	B	B	B	B	C	B
	Water Supply point	C	B	B	B	B	B
Wastewater	Treatment Plant Wairoa	B+	C+	B	B+	B+	B+
	Treatment Plant Tuai	B+	C+	B	B+	B+	B+
	Treatment Plant- Māhia Beach	C	C+	C	B+	B+	C
	Treatment Plant Ōpoutama	B	B+	C	B+	B+	C
	Wairoa Pump Stations	B+	B+	B+	B+	B+	B+
	OCWS Pump Stations	A	A	A	B+	B+	B+
	Wastewater lines	B	A	B	B	B	B
Stormwater	Wastewater points	B	B	B	B	B	B
	Stormwater Lines	B	B	B	B	C	B
	Stormwater Points	B	B	B	B	B	B

8.5.1 CONFIDENCE LEVELS IN ASSET DATA

Confidence ratings have been assigned to the source data and unit cost rates and to other items as appropriate. Data from the AssetFinda database was generally considered to have a confidence rating of B.

The current confidence ratings descriptions as well as confidence ratings for different asset groups is summarised below.

Grade	Label	Description	Accuracy
A	Highly reliable	Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete.	±2%
B	Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old.	±10%
C	Uncertain	Data based on records, procedures, investigations and analysis which is incomplete or unsupported or comes from a limited sample.	±25%
D	Very uncertain	Data based unconfirmed verbal reports and/or cursory inspection and analysis. Dataset may not be fully complete and most data is estimated or extrapolated.	±40%
E	Unknown	None or very little data held	

9. PLAN IMPROVEMENT & MONITORING

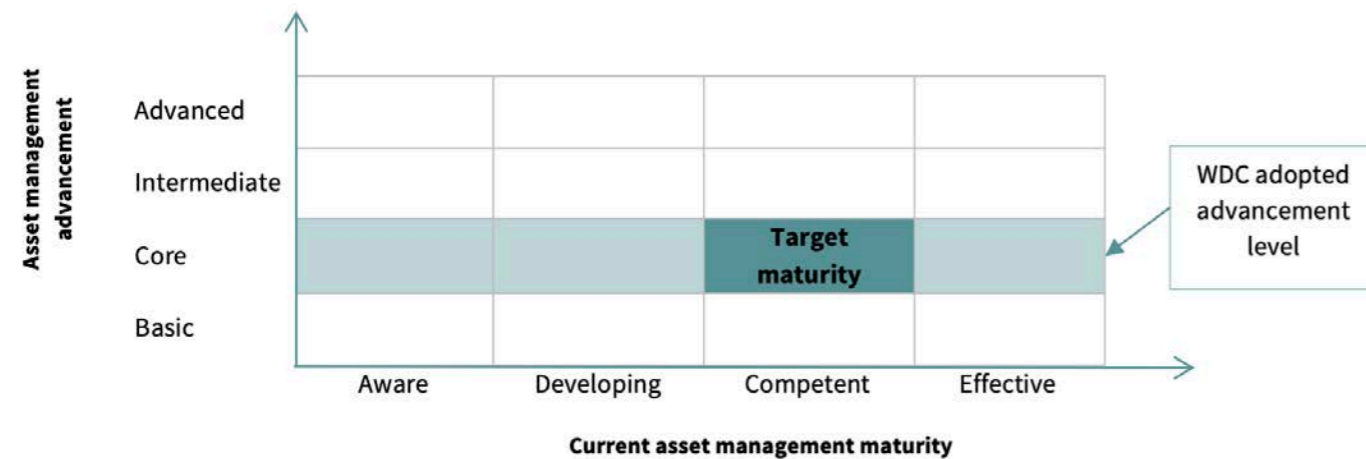
9.1 OVERVIEW

9.1.1 ASSET MANAGEMENT PRINCIPLES

Council's key principles of infrastructure asset management practice that we are guided by are:

- Providing a defined Level of Service and monitoring performance
- Managing the impact of demand changes (growth as well as decline) through demand management, infrastructure investment and other strategies
- Taking a lifecycle approach to development cost-effective management strategies for the long term that meet that defined Level of Service
- Identifying, assessing and appropriately controlling risks
- Having a long term financial plan which identifies required expenditure and how it will be funded.

Our Asset Management Policy outlines that a **'Core' level of asset management advancement is required for the land transport activity**. This approach is consistent with the guidance provided in the International Infrastructure Management Manual (IIMM, 2015).



Three Waters activity also shows a 'Developing' to 'Competent' level of maturity in most area, however 'knowing the rules' rates highest, as Three Waters is a heavily legislated activity. 'Monitoring sustainability' has the lowest level of maturity, indicating a need for more focus on long term service delivery.

Key areas identified for improvement have been included in our Improvement Plan.

Desired Level of Asset Management Practices

Asset management processes need to be fit for purpose. For some aspects of the Three Waters Activity, Core level asset management is appropriate. However, with the tensions applied to achieve compliance requirements, a more sophisticated level of asset management is warranted, particularly for higher value assets. This would enable Council to better manage the sustainability and long term whole of life cost of providing a fit for purpose Three Waters network.

Core maturity represents custodial responsibilities identified in the National Asset Management Framework and the IIMM and comprises minimum requirements on:

- Record and report on the state of all assets to the community;
- Meet current statutory reporting requirements;
- To enable Council through information to understand the cumulating impact of decisions;
- Ensure community safety.

9.1.2 ASSET MANAGEMENT MATURITY

In early 2020, we commissioned WSP to complete a review of our asset management maturity to assess how well we are delivering on our asset management policy, to achieve a 'Core' level of asset management practice. Our aim is to become 'Competent' within our adopted level of advancement as shown below.

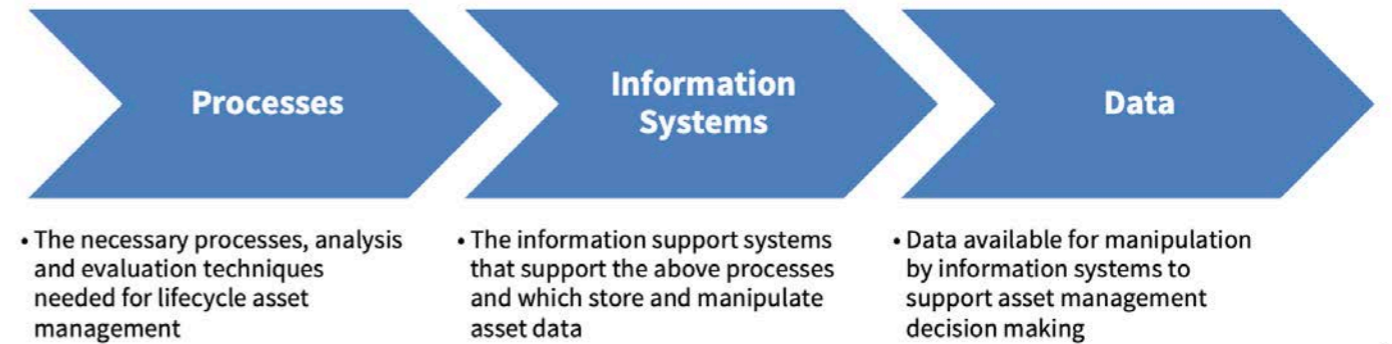
Implementation of this improvement programme will contribute to meeting this desired increased asset management capability.



9.2 ASSET MANAGEMENT PRACTICES

This section discusses the status of Council's current Asset Management practices and identifies practices the organisation

wishes to use. The key Asset Management practices can be grouped into three broad areas.



9.2.1 PROCESSES

INVESTMENT DECISION MAKING

In early 2020, we commissioned WSP to complete a review of our investment decision making processes. As part of this review a new Investment Decision Making Process has been developed for use across all Service Areas. This process includes the use of specific project 'criteria' to evaluate the relative priority of capital renewals and improvement projects. This is a form of Multi-Criteria Analysis. These criteria are meant to consistently score projects across all the things that are important to Wairoa District Council. This aids decision makers to prioritise projects for both the medium and short term.

The following four criteria have been identified for prioritising renewals and capital improvement projects:

1. **Strategic Alignment** – How strongly does this project align with Wairoa District Council's vision, community outcomes and/or strategic goals (where applicable)?

2. **Service Delivery** – How important is this project in contributing to the delivery of Wairoa District Council's core activities and services? Will it contribute to service reliability and meeting customer service level expectations?
3. **Risk & Criticality** – What is the risk to safety and service reliability if the project is not done?
4. **Financial Impact** – What is the return on investment or financial benefit? Does the project provide value for money?

Below are the factors considered for each of the four investment decision making criteria.

	High	Medium	Low
Asset Group	✔	✔	✖
Strategic Alignment	Strongly contributes to applicable national reform AND community outcomes	Some contribution with applicable national reform AND community outcomes	Limited contribution to national reform OR community outcome
Service Delivery	Will result in significant improvement in service delivery factors	Will result in moderate improvement in service delivery factors	Will result in minimal improvement in service delivery factors
Risk & Criticality	Extremely/Highly critical asset in very poor/poor condition OR risk level significantly decreased	Critical asset in poor condition OR risk level somewhat decreased	Moderate/low critical asset in very good / good condition OR risk level remains the same or increases
Financial Benefit	High financial benefit (e.g. High NPV for renewals). Lowest lifecycle cost option	Moderate financial benefit when whole of life costs are considered (e.g. positive NPV for renewals)	Limited financial benefit when whole of life costs are considered (e.g. neutral NPV for renewals)

Lifecycle Management Planning & Reporting

Process	Description
Consent Monitoring	Inspections Data collection Reporting
Operational Programming	Responding to complaints / faults – timeframes, recording details of what was done etc Day to day inspections Water treatment plant / wastewater plant operations
Maintenance Planning	Monthly programmes
Forward Work Programmes	Renewals

Financial Process

Process	Description
Procurement	O&M maintenance contracts Renewals works
Monthly Claims	Processing requirements Monthly financial reporting
Maintenance Cost Recording	Maintenance cost data collection and recording
Asset Valuations	Asset valuation provides the critical link between asset management and financial management. The valuation process has been performed in accordance with generally accepted accounting standards (PBE IPSAS 17), valuation standards and NZ local authority asset management practice (NZ Infrastructure Asset - Management Manual and Valuation/Depreciation Guidelines 2006). Valuations are completed every three years.

Standards & Guidelines

Work Component	Standards & Guidelines
Design	Compliance with all relevant technical standards including NZS 4404 “Land Development and Subdivision Infrastructure.
Maintenance & Operations	Compliance with 3- Waters Maintenance Contract specifications. Compliance with Council’s maintenance specifications, including: <ul style="list-style-type: none"> • M50: Stormwater Reticulation Maintenance • M51: Maintenance and Operation of Water Supply Reticulation • M54: Maintenance and Operation of Sewerage Reticulation
Materials	Selection of materials to comply with industry best practice as well as all relevant standards including NZS4404, contract specifications and policies.

9.2.2 INFORMATION SYSTEMS

A summary of Council’s existing asset management systems are shown below.

System	Description
AssetFinda	AssetFinda is Council’s primary asset register for Three Waters activities. It stores the asset attributes, and other details, including condition, criticality, and installation date. Asset data and information is updated and added to as information comes to hand such as new works, identification of faults and condition assessment findings.
Financial Information System	NCS is the software used as the Financial Information Systems. Long term financial decisions are based on the development of 10 year plans as part of the LTP process. These 10 year plans are updated every three years on a cycle linked to the development of this AMP.
Capital Works Programming	Estimates of project costs, timing, asset capacity and funding sources are developed using Microsoft Excel by the Utilities Manager with assistance from consultants and the maintenance contractor. These programmes are managed and updated by the Utilities Manager.
Work Management Systems	Council’s operations and maintenance contractor has appropriate systems for scheduling of all works, including routine maintenance, operations and replacements. All required preventative, corrective and breakdown maintenance information is recorded and linked to the assets that work is to be carried out on. A high-quality preventative maintenance program is critical to prevent inadequate equipment performance that can result in environmental or process incidents, therefore, adherence to the preventative maintenance program is assessed on a frequent basis. Information from the contractor’s system is entered into Council’s AssetFinda as it becomes available.
SCADA	SCADA (Supervisory Control and Data Acquisition) software allows Council to monitor the status of our major sites, such as treatment plants and pump stations, electronically using on-site instrumentation. All information is displayed graphically via a central server. The SCADA system sends information on ‘what is currently happening.’ Council staff and contractors are notified via text message if there are any issues or problems requiring immediate attention. Options for automated consent monitoring using SCADA have been commenced simplifying consent monitoring and reporting.
Customer Service Request (CSR) System	CSRs are raised by the public or internal departments within Council. They are forwarded onto the appropriate personnel, either Council staff or direct to the operations and maintenance contractor with the relevant response times.
Asset Risk Register	As part of the risk management framework, the asset risk register compiles specific risks and consequences to waters and wastewater assets. Mitigation and intervention measures align to the asset lifecycle process and are included within future planning.

9.2.3 DATA

Types of data and information held by Council and details of existing data sets are included below. Legend indicates completeness of data set as follows:

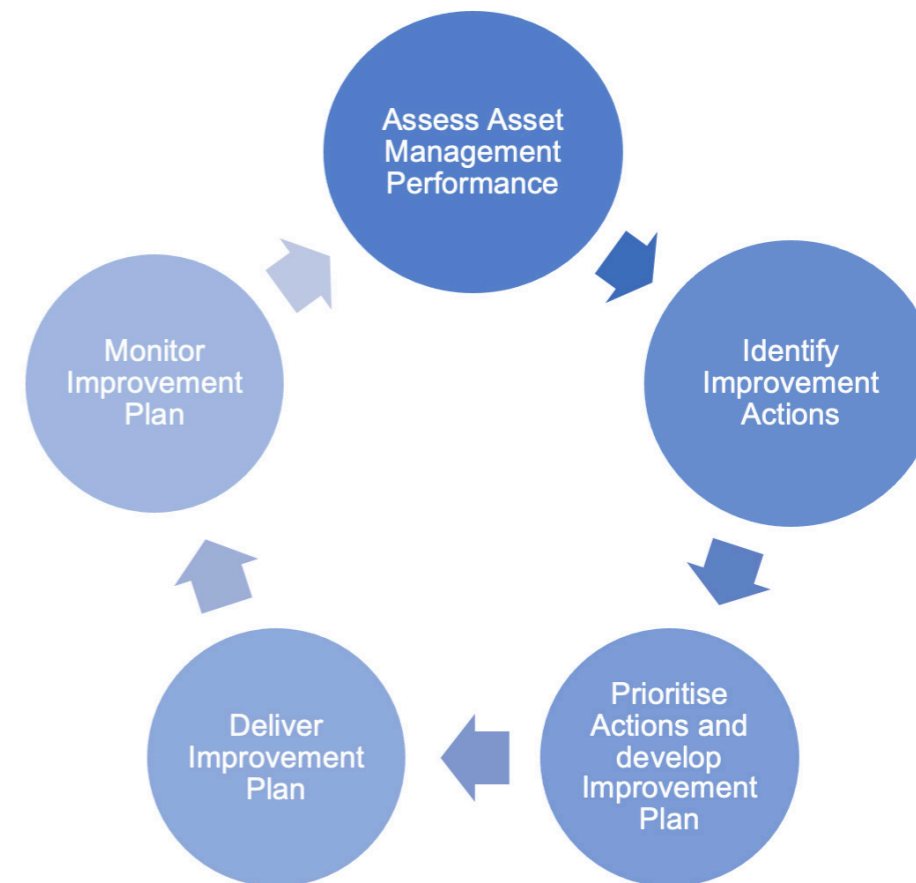
No existing data set
 Partial data set
 Full data set

Type of Asset Information	Description	Existing Data Sets	Data Collection Approach
Inventory	The various attributes of the assets e.g. location, classification, asset ID number, size (width, thickness, length, etc.), type, material, date of construction, and date of major renewal or upgrades.	AssetFinda	Information is collected from CAD drawings or manually from Capital projects completion records
Condition	The condition rating of each asset. This also includes the date when the condition rating was measured. The results from the various inspections that are undertaken, including what was inspected and the methodology used during inspection.	AssetFinda	
Operations & Maintenance	Information on the activities completed to ensure assets are functioning correctly, including inspections, date and type of maintenance work completed, works order prioritization and management.	Captured in Contractor's system only	Data collected through service requests and inspections by Operations & Maintenance staff. Mobile asset data collection application used.
Utilisation	Ratio of the time a service (system or component) is functional to the total time; service capacity versus utilisation requirements.		
Lifecycle Planning	Information on asset lifecycle processes including acquisition, commissioning and handover, renewal interventions for assets (e.g. replacement), and disposal.	No formal data repository	
Financial	Information on costs related to build/acquire, maintain and renew assets, e.g. design, labour, material, cost of managing contracts.	No formal data repository	Information collected through Capital projects completion records.
	Asset valuation to establish current replacement and depreciated replacement costs.	AssetFinda	Valuation reporting process
Risk	Information on risk management related to existing assets, including data supporting risk identification, mitigation, mitigation costs.	Risk Register	Needs updating
Compliance	Information on how assets are meeting regulatory requirements. Tracking inspections, and certification for assets that require it.	Consent monitoring records	
Performance	Information on how assets are performing in terms of meeting defined Levels of Service and asset management objectives.	Council Performance Report Spreadsheet	

9.3 IMPROVEMENT PLAN

A key feature in Council's Asset Management system is continuous improvement. This is essential to ensure the asset management system and services are effectively managed. Through the initiatives presented in this section, Council is committed to appropriate asset

management practices. Council is committed to delivering the most appropriate Levels of Service balanced with affordability and good industry practice.







Details of future improvements required and a timeframe for these improvements is included in the table below. Implementation of this Improvement Plan will also provide a framework from which the





AMP can be developed to meet all the requirements of a core asset management system.

9.3.1 ALL ACTIVITIES

Improvement Area	Item No.	Description	Activity	Action	Resource	Indicative Timeline	Estimated Cost	Priority	Status
Drivers for Change	1	Catchment Modelling	Stormwater	Complete new stormwater catchment modelling to provide a more up to date view on climate change impacts.	External Consultant	2023/24	\$30,000	Medium	
	2	Catchment Management Plans	Stormwater	When modelling has been completed use prioritisations based on flood prone areas (e.g. along the Wairoa River) and development Catchment Management Plans.	External Consultant	2023/24 onwards	\$10,000 per plan	Medium	
	3	AFFCO Engagement & Demand Strategy	Water	To improve our understanding of future demand, we need to understand future trends in water usage from our key user AFFCO. An engagement strategy is required to ensure regular communication with AFFCO to predict peak and future usage trends.	Manager, Community Services and Assets	2022/23		Medium	
Risk & Resilience	4	Risk Register	All Activities	There is a need for full review of the Three Waters Risk Register to ensure risk issues have been adequately identified and ensure that current high risks are still relevant.	External Consultant	2021/22	\$5,000	High	Previously Identified. More progress required.
	5	Emergency Response Plans	All Activities	To improve the resilience Level of Service delivery, Emergency Response Plans need to be developed. Draft plans are currently underway. The plan will cover the effects of moderate and significant events on vulnerable and critical assets.	External Consultant	2020/21		High	Underway.
Our Assets	6	Spatial Data	All Activities	Collect spatial data for all assets where this is missing. Use asset criticality to prioritise data collection programme. Above ground asset data quality was reviewed during the 2020 Valuation process but further improvement items are required to improve data quality.	External Consultant	2021/22 - 23	\$40,000 (over 2 years)	High	
	7	Water Treatment Plant Re-Valuation	Water	Full Asset Re-valuation for Water Treatment Plant.	External Consultant	2023/24	\$20,000	Medium	
	8	Pipeline Condition Assessment	Water / Stormwater	While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through inspections and materials testing.	External Consultant	Annual	\$10,000	High	
	9	CCTV Infiltration Investigations	Wastewater	While considerable progress has been made to determine condition through desktop analysis, further validation of the condition ratings assessed needs to continue through CCTV inspections and materials testing.	External Consultant	2021/22	\$196,000	High	
	10	Pump Stations Maintenance Programme	Wastewater	Develop a scheduled maintenance programme to cover weather tightness (spouting, roofing, housings) as well as general maintenance programmes. Inspect all pump stations each year with a scheduled maintenance programme once per year on average.	Manager, Community Services and Assets	2022/23		Medium	
Lifecycle Management	11	Maintenance Costs Data Collection	All Activities	Complete maintenance cost data collation in AssetFinda and georeferenced costs for future analysis.	External Consultant	2021/22	\$10,000	High	
	12	Disposal Plan	All Activities	Full Disposal Strategy to be completed for key projects requiring disposal of assets. This should include ensuring costs are accounted for in project estimates as well as any environmental impact assessment.	Manager, Community Services and Assets	2021/22		High	

APPENDIX A: WATER ASSETS

System	Description	Asset Components
<p>Intake & Pumping Main</p>  	<p>Delivers raw water to the WTP</p> <p>Located on the bank of the Waiau River adjacent to State Highway 38, approximately 2.5km upstream of the plant</p> <p>Inclined reinforced concrete structure</p> <p>Current structure constructed 1985 – subject to high turbidity, rate an height of river levels can rise – intake can be sealed in the event that the river rises to such a height that it becomes threatened with inundation.</p> <p>PROCESS OUTLINE: Intake delivers raw water to the WTP via the 375mm dia pumping main.</p>	<p>pump intake screen</p> <p>series of pumps, screens and pipework</p> <p>mechanical and electrical equipment and valves</p> <p>2 - Thompson-Byron & Jackson Supertitan pumps with 132kW induction motors,</p> <p>1 - Myson Ventilation filter</p> <p>1 - Fan cooling system</p> <p>1 - Tsurumi Sump Pump</p> <p>1 - Overhead Gantry and winch system</p> <p>1 - Marquip air compressor</p> <p>1 - Polysonics Flowmeter</p> <p>various fittings, fixtures and controls</p> <p>5,000 litre storage tank which is used to provide the initial start-up flow to the WTP and reduce surging</p> <p>2.5km x 375mm diameter Class B asbestos cement pumping main (1963) from intake to WTP (at capacity) - A steel walkway underneath the SH38 bridge crosses the Hangaroa River at Frasertown and provides access for pipe maintenance. This was installed in 1981</p>
<p>Water Treatment Plant (WTP)</p>  	<p>Located in Frasertown, approximately 6.5 kilometres from Wairoa</p> <p>The WTP was first commissioned in 1965</p> <p>Capacity was increased in 1972 and again in 1984/85 by redesigning various water distribution channels for the clarifiers and installing an additional filter. More sophisticated control and chemical dosing equipment was also installed to make the plant more responsive to changes in raw water quality.</p> <p>PROCESS OUTLINE: WTP treats raw water extracted from the Waiau River to potable water standard for delivery to Wairoa, Frasertown, and the AFFCO meat works.</p>	<p>reinforced concrete raw water tower (1964/65)</p> <p>reinforced concrete delay chamber (1983/84)</p> <p>4 x hopper bottomed reinforced concrete clarifiers (3 x 1964/65, 1 x 1983)</p> <p>5 x reinforced concrete rapid sand filters (3 x 1964/65, 1 x 1972, 1 x 1983/84)</p> <p>control gallery</p> <p>reinforced concrete block chlorine room (1963)</p> <p>reinforced concrete block pump room and clear water tank (1963)</p> <p>reinforced concrete pump room (1964/65)</p> <p>reinforced concrete chemical storage room (1983)</p> <p>a variety of mechanical and electrical fittings, fixtures & pumps.</p>

System	Description	Asset Components
		<p>Clarifiers - Raw water, dosed with aluminum sulphate and polyelectrolytes to make solids settle, enters the clarifiers where clear water is decanted off the surface.</p> 
		<p>Filters - The water decanted from the clarifiers then passes through a sand/mixed media filter. Here the water enters the filter at the top and is collected from an underdrain system at the base.</p> 
		<p>After filtration, water enters a clear water tank where it is dosed with chlorine gas before being dispatched to Wairoa and Frasertown.</p> 
<p>Sludge Disposal</p> 	<p>Sludge disposal comprises the settling of solids into a 'sludge holding tank,' pumping of sludge into a sludge press and disposal of the solids at the landfill or other nominated disposal point.</p>	
<p>Trunk Main</p>	<p>The trunk main is a low-pressure pipeline, approximately 6.7km long that connects the WTP with the Boundary Reservoirs in Wairoa from where the water is distributed to Wairoa and the AFFCO meat works.</p>	<p>Class B 375mm ID AC pipeline (1963)</p> <p>Fittings comprising air valves, nodes, meters, isolating and sluice valves, tees and some services to properties Pipe Bridge.</p>

System	Description	Asset Components
<p data-bbox="231 163 344 184">Reservoirs</p>  	<p data-bbox="498 163 789 321">The reticulation serving Wairoa is dependent upon reservoir storage for operational and risk management reasons (resilience).</p> <p data-bbox="498 352 789 489">Storage comprises three low-level reservoirs at the Northern Boundary and three high level reservoirs on Tawhara Hill.</p> <p data-bbox="498 520 789 678">The new Tawhara tank also allows for some pressure reduction in the system to improve leakage and pipe deterioration levels in the network.</p>	
<p data-bbox="166 835 418 856">Boundary Pump Station</p> 	<p data-bbox="498 835 789 1098">The Boundary Pump Station was constructed in 1984/85 to boost water pressure from the low level Boundary Storage (which marks the terminus of the low pressure trunk main from the WTP) to useable levels from the Boundary Reservoirs and delivery to the community and AFFCO.</p>	<ul data-bbox="834 835 1374 982" style="list-style-type: none"> • Reinforced concrete building • 2 pumps for town supply, • 2 pumps for AFFCO supply • Various valves, fittings, fixtures and control equipment.
<p data-bbox="166 1241 418 1262">SCADA/Telemetry System</p>	<p data-bbox="498 1241 789 1346">The SCADA/Telemetry system comprises a 'Powerlink System' produced by Abbey Systems Ltd.</p> <p data-bbox="498 1377 789 1503">The SCADA system is used for controlling and measuring water treatment and associated facilities such as pump stations.</p>	

APPENDIX B: THREE WATERS RISK REGISTER

Asset Management Area	Risk	Cause	Gross Risk Analysis				Controls (any existing policy, procedures, etc)	Mitigation Strategies	Status Update	Overall Residual Risk Analysis				How will risk and Control be Monitored			Date updated
			Likelihood	Impact/Consequences	Gross Risk	Risk Assessment				Likelihood	Impact	Residual Risk	Risk Assessment	Department	Owner	Frequency of Review	
AM Practices (for Three Waters)	Poor asset management practices including lack of information / knowledge on which to make informed decisions on investment	Lack of knowledge; Limited information and analysis to date	3	4	12	High	The draft 2018 Water Services AMP contains LCMPs and Improvement Programme consistent with good industry practice	Regular review of AM Improvement Plan including asset data cleansing; Improve the end to end process for new or amended data changes into the asset inventories from capital works and maintenance jobs	Complete the draft 2018 Water Services AMP including LCMPs and AM Improvement Plan; Complete asset data cleansing; Improve the end to end process for new or amended data changes with new O & M Contractor	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	
	Public safety is jeopardised through administrative failure	Lack of communication between District Health Board and Hawke's Bay Regional Council; Standard Operating Procedures (SOPs) incomplete or missing for critical activities; Lack of Emergency Response Plans (ERP); Poor Water Safety Plan (WSP) understanding and implementation	4	4	16	Critical	Quarterly meetings between stakeholders with agendas and minutes; Developing SOPs for critical activities with new O & M Contractor	Develop and workshop ERP with new O & M Contractor; Update the Wairoa and Frasertown, and Tuai WSPs as scheduled and ensure the Havelock North inquiry findings are considered; Review the effectiveness of the Contingency Plans with the scheduled WSP updates; Communicate the planned actions for the scheduled WSP updates with the Drinking Water Assessor (DWA)	Development of SOPs for critical activities, ERPs and monitoring of WSP implementation; Update the Wairoa and Frasertown, and Tuai WSPs as scheduled and ensure the Havelock North inquiry findings are considered; Review the effectiveness of the Contingency Plans with the scheduled WSP updates; Communicate the planned actions for the scheduled WSP updates with the Drinking Water Assessor (DWA)	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	
AM Practices (water supply only)	Significant failure to water supply consumers (quality and/or quantity)	Unclear roles and responsibilities between in house treatment / production and reticulation managed by external O & M Contractor	3	3	9	Moderate	2018 Water Services AMP now includes water source and treatment activity; Developing SOPs for critical activities with new O & M Contractor	Development ERP with new O & M Contractor to be expanded to cover in-house water supervisor; Clear roles and responsibilities to be documented in WSP updates and annual review	Development of ERP jointly with new O & M Contractor and in-house water supervisor; Complete the planned consolidation of the 2018 Water Services AMP; Document clear roles and responsibilities in WSP updates and annual review	2	3	6	Moderate	Engineering	Utilities Manager	Quarterly	

Asset Management Area	Risk	Cause	Gross Risk Analysis				Controls (any existing policy, procedures, etc)	Mitigation Strategies	Status Update	Overall Residual Risk Analysis				How will risk and Control be Monitored			Date updated
			Likelihood	Impact/Consequences	Gross Risk	Risk Assessment				Likelihood	Impact	Residual Risk	Risk Assessment	Department	Owner	Frequency of Review	
Assets (for Three Waters)	Unexpected failure of critical assets	Asset life and condition is compromised due to lack of planned maintenance and renewals programmes	3	4	12	High	Routine inspections by field staff, potential implications of maintenance and renewals programming shortfalls to be identified in this AMP; Existing critical assets identified; Developing water renewal profiles using the assessments and break histories (for short to medium programme); Developing realistic 30 year water investment profiles using probabilistic failures and statistical model	Implications of maintenance and renewals programming shortfalls to be identified in the draft 2018 AMP; Start monitoring the condition of the critical assets to ensure aligned with Council's objectives and more proactive AM approach; Ongoing review of investment needs related to asset condition; Develop sound wastewater renewal programme including moving towards condition based programmes where appropriate	Implications of maintenance and renewals programming shortfalls to be identified in the draft 2018 AMP; Review the critical assets to ensure aligned with Council's objectives and more proactive AM approach; Ongoing review of investment needs related to asset condition; Develop sound wastewater renewal programme including moving towards condition based programmes where appropriate	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	
	Inappropriate funding and forecasting (risk to financial sustainability)	Reactive renewal programmes	4	3	12	High	Asset management improvement plan developed including proactive renewal programme and monitored quarterly; Developing water renewal profiles using the assessments and break histories (for short to medium programmes); Developing realistic 30 year water investment profiles using probabilistic failures and statistical model	Continue to monitor the asset management improvement programme; Implement the risk based water renewal programmes (short and long term); Develop the risk based wastewater renewal programme taking into account material type, criticality, condition assessment, serviceability, performance and other factors	Continue to monitor the asset management improvement programme; Implement the risk based water renewal programmes (short and long term); Develop the risk based wastewater renewal programme	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	
Assets (water supply only)	Lost water (from network)	Inefficient management of water supply assets resulting in high leakage rates	4	3	12	High	Reactive leak detection programme; Acoustic survey completed in 2012	Initially review the high priority leakage areas identified in the 2012 acoustic survey; Develop a suitable leakage management programme after this initial review	Review the high priority leakage areas; Develop a proactive leakage management programme appropriate for Council's water networks; Implement risk based water renewals based on short and long term modelling	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	

Asset Management Area	Risk	Cause	Gross Risk Analysis				Controls (any existing policy, procedures, etc)	Mitigation Strategies	Status Update	Overall Residual Risk Analysis				How will risk and Control be Monitored			Date updated
			Likelihood	Impact/Consequences	Gross Risk	Risk Assessment				Likelihood	Impact	Residual Risk	Risk Assessment	Department	Owner	Frequency of Review	
Assets (water supply only)	Water supply becomes contaminated	Damage to reticulation system resulting in unknown groundwater or sewerage infiltration; Lack of maintenance and sediment build up	4	5	20	Critical	Chlorine residual maintained in treatment; Dead end flushing programme in place; Implement the WSPs	Develop ERP; Develop a water supply shutdown procedure jointly with the new Three Waters O & M Contractor; Develop a water disconnection procedure jointly with the new Three Waters O & M Contractor; Develop prepared boil water notice jointly with the new Three Waters O & M Contractor and Council's Communications Manager	Develop ERP including incident de briefs; Develop a water supply shutdown procedure; Develop a water disconnection procedure; Develop prepared boil water notice jointly; Document the flushing programme; Continuous review of the programme effectiveness	3	5	15	High	Engineering	Utilities Manager	Quarterly	
	Raw water becomes contaminated making treatment ineffective	Natural disaster including flooding, tsunami, earthquake, third party damage, terrorist attack	3	5	15	High	SCADA alarms; Operator training; Implement the WSPs	Review the effectiveness of the Contingency Plans with the scheduled WSP updates; Develop ERP	Continue with operator training; Implement the WSPs; Review the effectiveness of the Contingency Plans with the scheduled WSP updates; Develop ERP including incident de briefs	3	4	12	High	Engineering	Utilities Manager	Quarterly	
	Water supply demand cannot be met	No alternative water source for Wairoa township (dependent on Wairoa River); Budget constraints for new works / upgrades; Demand faster than predicted (ie new industrial customer); Unexpected failure of a critical asset (ie reservoir failure, electrical fault, pipe burst)	4	4	16	Critical	Overflow monitoring and response planning; Reactive response to requests for service; Developed proactive risk based renewals programme	Prepare scoping plan for Resilience Plan development for the alternative water source for Wairoa township (such as a package plant)	Prepare scoping plan for Resilience Plan development for the alternative water source for Wairoa township; Alignment of budgets to support economic development; Seek Central Government funding for regional development opportunities	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	
	Failure to comply with New Zealand Drinking Water Standards (DWSNZ) 2008	SCADA system fails to raise alarm; Unclear roles and responsibilities between in house treatment / production and reticulation managed by external O & M Contractor	3	4	12	High	SCADA alarms; Operator training	Review existing SCADA system functionality; Development of ERP jointly with new O & M Contractor and in-house water supervisor; Document clear roles and responsibilities with WSP updates and annual review	Review existing SCADA system functionality; Development of ERP jointly with new O & M Contractor and in-house water supervisor; Document clear roles and responsibilities with WSP updates and annual review	3	3	9	Moderate	Engineering	Utilities Manager	Quarterly	

Asset Management Area	Risk	Cause	Gross Risk Analysis				Controls (any existing policy, procedures, etc)	Mitigation Strategies	Status Update	Overall Residual Risk Analysis				How will risk and Control be Monitored			Date updated
			Likelihood	Impact/Consequences	Gross Risk	Risk Assessment				Likelihood	Impact	Residual Risk	Risk Assessment	Department	Owner	Frequency of Review	
Assets (wastewater only)	Unplanned, unknown overflow for an unacceptable period of time resulting in one or more of: consent breach, health risk and environmental damage	SCADA system fails to raise alarm	3	3	9	Moderate	Response planning; 24 hour IT support, 24 hour SCADA support; Routine inspections of assets by O & M Contractor	Review existing SCADA system functionality; Review inspection frequencies to align with criticalities; Identify funding needs to maintain Levels of Service	Review existing SCADA system functionality; Review inspection frequencies to align with criticalities; Identify funding needs to maintain Levels of Service	2	3	6	Moderate	Engineering	Utilities Manager	Quarterly	
	Known uncontrolled overflow for an unacceptable period of time resulting in one or more of: consent breach, public health risk and environmental damage	Electrical or mechanical equipment failure; Inflow and Infiltration (I/I) exceeds design allowances	3	2	6	Moderate	Back up equipment from other facilities can be brought in, same materials and equipment used; Overflow monitoring and response planning; Redundancy available in most pump stations; pump stations fitted with chopper pumps.	Complete planned CCTV survey of 20% of the network in 2017; Develop a cost effective programme after I/I investigations completed for prioritised investment as identified in AM Improvement Programme; Continue current re-lining of wastewater pipes. Review generator provision on part of ERP development	CCTV survey is underway to complete 20% of the network in 2017; Develop a cost effective programme after I/I investigations completed for prioritised investment as identified in AM Improvement Programme; 1.5km of wastewater pipe to be re-lined by March 2018; Review generator provision on part of ERP development	2	2	4	Low	Engineering	Utilities Manager	Biannually	
	Public safety compromised for example by falling into a manhole or entering a pump station	Insufficient hazard controls	3	4	12	High	Personnel undertaking works responsible for site security and exclusion zone establishment	Implementation of exclusion zone and site security procedures to be audited at least annually as acceptable industry practice	Implementation of exclusion zone and site security procedures to be audited at least annually as acceptable industry practice	2	4	8	High	Engineering	Utilities Manager	Quarterly	
	Loss of wastewater service (at pump station, reticulation or treatment plant)	Extensive damage by natural hazards (eg slips) or disaster or blockages or power outage	4	3	12	High	Overflow monitoring and response planning; Reactive tree roots monitoring; Pump stations have been refitted with chopper pumps with capability to deal with large debris	Flow monitoring; Develop ERP; Review resilience of critical wastewater assets; Use chopper pumps in wastewater pump stations; Re-line susceptible pipes	Flow monitoring; Develop ERP; Review resilience of critical wastewater assets; Programme for re-lining 1.5km susceptible to blockages to be complete by March 2018	3	2	6	Moderate	Engineering	Utilities Manager	Quarterly	
	Public safety compromised such as person falling into open manhole causing injury or death	Popping stormwater manhole; Stormwater manhole or pump station lid left off by contractor staff	3	5	15	High	Emergency response to service requests by O & M contractor; Contract Quality Plan and Work Procedures	Identified repeatedly popping manholes fitted with safety device; Undertake root cause analysis of sites with repeatedly popping manholes; Find long term solution rather than short term fix	Continue with good responsiveness Levels of Service; Start undertaking root cause analysis; Continue to reinforce health and safety requirements and consequences	2	5	10	High	Engineering	Utilities Manager	Quarterly	

Asset Management Area	Risk	Cause	Gross Risk Analysis				Controls (any existing policy, procedures, etc)	Mitigation Strategies	Status Update	Overall Residual Risk Analysis				How will risk and Control be Monitored			Date updated
			Likelihood	Impact/Consequences	Gross Risk	Risk Assessment				Likelihood	Impact	Residual Risk	Risk Assessment	Department	Owner	Frequency of Review	
Assets (stormwater only)	Damage to buildings and property; Council liable for damages; Unplanned remedial costs to Council	Land instability as a result of stormwater flows (from public system)	3	3	9	Moderate	Building Act requirements; Consenting process; Council's Engineering Design Manual Council public records through GIS; Capital works and renewal programmes; Inspections (reactive only)	District Plan requirements; Proactive inspection of public pipes for asset condition identified as potentially causing slips	District Plan requirements; Proactive inspection of public pipes for asset condition identified as potentially causing slips	3	2	6	Moderate	Engineering	Utilities Manager	Quarterly	

APPENDIX C: THREE WATERS FORECAST EXPENDITURE

OPERATIONS & MAINTENANCE 10 YEAR FORECAST

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Stormwater												
SD2022. Stormwater Discharge Resource Consents	35,000	0	0	0		0	0	0	0	0	0	35,000
SD2023. Stormwater RMA Compliance Monitoring	30,000	62,100	31,830	32,640		33,510	34,350	35,310	36,300	37,320	38,250	371,610
SD2025. CONSULTANCY - WAIROA	0	5,175	0	0		0	5,725	0	0	0	0	10,900
SD2200. ASSET MANAGEMENT	0	0	10,610	0		11,170	0	11,770	0	12,440	0	45,990
SD5001. Contract Management	36,330	37,384	42,160	43,160		44,200	45,200	46,240	47,320	48,400	49,440	439,834
SD5100. WAIROA OPEN DRAINS OPS & MTCE	10,000	10,350	10,610	10,880		11,170	11,450	11,770	12,100	12,440	12,750	113,520
SD5300. WAIROA PUMPS - ELECTRICITY	2,550	2,639	2,706	2,829		2,904	2,977	3,178	3,267	3,359	3,570	29,979
SD6000. TUAI RETIC - OPS & MTCE	1,100	1,139	1,167	1,197		1,229	1,260	1,295	1,331	1,368	1,403	12,489
SD7100. MĀHIA OPEN DRAINS - OPS & MTCE	10,000	10,350	10,610	10,880		11,170	11,450	11,770	12,100	12,440	12,750	113,520
Stormwater Subtotals	124,980	129,137	109,693	101,586		115,353	112,412	121,333	112,418	127,767	118,163	1,172,842
Stormwater Indirect Asset Costs												
Depreciation and Amortisation												
SD2030. Depreciation	151,889	869	4,644	282,763		290,300	297,577	305,893	314,470	327,103	339,242	2,314,750
SD20303. Depreciation Māhia	0	6,469	6,631	6,800		6,981	7,156	7,356	7,563	7,775	7,969	64,700
SD203099. Non Funded Depreciation	100,840	261,575	268,145	914		938	962	989	1,016	1,045	1,071	637,495
Finance Costs												
SD1540. PUBLIC DEBT COSTS	50,137	57,356	58,654	59,884		59,481	59,079	58,676	58,274	57,872	57,469	576,882
Other Operating Expenses												
SD153501. INSURANCE WAIROA	11,512	11,915	12,214	12,525		12,859	13,181	13,550	13,930	14,321	14,678	130,685
SD39051. CORPORATE OVERHEADS	121,656	124,942	135,071	133,194		138,808	146,722	147,753	147,547	154,083	154,352	1,404,128
SD39052. ENGINEERING OVERHEADS	11,050	36,539	40,589	40,665		43,058	44,829	40,000	41,164	45,346	44,256	387,496
Stormwater Indirect Costs Totals	447,084	499,665	525,948	536,745		552,425	569,506	574,217	583,964	607,545	619,037	5,516,136
Stormwater O&M Totals	572,064	628,802	635,641	638,331		667,778	681,918	695,550	696,382	735,312	737,200	6,688,978
Waste water												
SG204010. Operating Costs Māhia	95,000	98,325	100,795	103,360		106,115	108,775	111,815	114,950	118,180	121,125	1,078,440
SG2040101. TELEMETRY WAIROA	6,000	6,210	6,366	6,528		6,702	6,870	7,062	7,260	7,464	7,650	68,112
SG204012. Operating Costs Ōpoutama	56,375	58,348	59,814	61,336		62,971	64,549	66,353	68,214	70,131	71,878	639,969
SG2040301. RMA Consents Monitoring Wairoa	108,000	201,825	206,895	212,160		228,985	234,725	241,285	248,050	255,020	261,375	2,198,320
SG2040312. RMA Consents Monitoring Māhia	51,000	52,785	54,111	55,488		56,967	58,395	60,027	61,710	63,444	65,025	578,952
SG2040314. RMA Consents Monitoring Ōpoutama	55,000	56,925	58,355	59,840		61,435	62,975	64,735	66,550	68,420	70,125	624,360
SG2040315. RMA Consents Monitoring Tuai	15,000	15,525	15,915	16,320		16,755	17,175	17,655	18,150	18,660	19,125	170,280
SG204032. TEST RESULTS ANALYSIS	220,000	134,550	53,050	54,400		58,810	76,543	0	0	0	0	597,353

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
SG2065. Vehicle SG Pump Trailer Exp S797M	55	57	58	60		61	63	65	67	68	70	624
SG5000. WAIROA WWTP - OPS & MTCE	90,000	93,150	95,490	97,920		100,530	103,050	105,930	108,900	111,960	114,750	1,021,680
SG5100. WAIROA WWTP - ELECTRICITY	15,000	15,525	15,915	16,320		16,755	17,175	17,655	18,150	18,660	19,125	170,280
SG5300. WAIROA RETIC - OPS & MTCE	100,000	103,500	106,100	108,800		111,700	114,500	117,700	121,000	124,400	127,500	1,135,200
SG5400. WAIROA RETIC - SMOKE TESTING	0	0	0	0		0	0	0	0	0	31,875	31,875
SG5600. WAIROA PUMP STNS - OPS & MTCE	95,000	98,325	100,795	103,360		106,115	108,775	111,815	114,950	118,180	121,125	1,078,440
SG5700. WAIROA PUMP STNS - ELECTRICITY	45,000	46,575	47,745	48,960		50,265	51,525	52,965	54,450	55,980	57,375	510,840
SG6000. TUAI - OPERATIONS & MTCE	60,000	62,100	68,435	70,720		72,605	74,425	76,505	78,650	80,860	82,875	727,175
SG6100. TUAI - ELECTRICITY	4,000	4,140	4,244	4,352		4,468	4,580	4,708	4,840	4,976	5,100	45,408
SG20402. OXIDATION POND SLUDGE REMOVAL	30,000	31,050	31,830	32,640		33,510	34,350	35,310	36,300	37,320	38,250	340,560
SG5001. Contract Management	181,560	186,825	200,260	205,010		209,950	214,700	219,640	224,770	242,000	247,200	2,131,915
SG5007. De-sludge Oxidation Ponds	0	0	0	0		0	0	0	0	0	191,250	191,250
SG5200. WAIROA WWTP - MOWING	7,500	7,763	8,488	8,704		8,936	9,160	9,416	9,680	9,952	10,200	89,799
Waste Water Subtotals	1,234,490	1,273,503	1,234,661	1,266,278		1,313,635	1,362,310	1,320,641	1,356,641	1,405,675	1,662,998	13,430,832
Wastewater Indirect Asset Costs												
Depreciation and Amortisation												
SG2030. Depreciation	308,127	355,136	364,058	373,322		383,273	392,880	403,860	415,184	426,850	437,487	3,860,177
SG20301. Depreciation Wairoa Area	0	88,582	147,093	150,836		154,857	158,739	165,022	169,649	174,416	178,762	1,387,956
SG20303. Depreciation Māhia	0	1,530	1,569	1,609		1,652	1,693	1,740	14,339	14,741	15,109	53,982
SG203031. Depreciation Māhia Scheme	0	5,211	6,243	7,112		7,301	7,484	7,694	7,909	29,797	53,298	132,049
SG203032. Depreciation Ōpoutama Scheme	0	32,430	33,245	34,091		34,999	35,877	36,879	37,913	38,979	39,950	324,363
SG203099. Non Funded Depreciation	118,000	122,130	125,198	128,384		131,806	135,110	138,886	142,780	146,792	150,450	1,339,536
Finance Costs												
SG1540. INTEREST PUBLIC DEBT	154,291	199,643	199,616	199,298		198,028	197,265	196,722	203,756	199,901	196,045	1,944,565
SG15402. Interest Māhia Scheme	0	0	0	0		0	0	0	0	25,602	51,319	76,921
Other Operating Expenses												
SG1535. INSURANCE	38,124	39,459	40,450	41,479		42,585	43,652	44,872	46,130	47,427	48,608	432,786
SG153501. INSURANCE WAIROA	18,134	18,769	19,241	19,730		20,256	20,764	21,344	21,943	22,559	23,121	205,861
SG153515. INSURANCE TUAI	1,483	1,535	1,574	1,614		1,657	1,699	1,746	1,795	1,845	1,891	16,839
SG39051. CORPORATE OVERHEADS	214,593	220,390	238,257	234,946		244,848	258,807	260,627	260,264	271,791	272,268	2,476,791
SG39052. ENGINEERING OVERHEADS	27,624	91,347	101,474	101,662		107,646	112,074	100,001	102,910	113,364	110,641	968,743
SG3910. RATES TREATMENT PLANT	866	897	919	943		968	992	1,020	1,048	1,078	1,105	9,836
Wastewater Indirect Costs Totals	881,242	1,177,059	1,278,937	1,295,026		1,329,876	1,367,036	1,380,413	1,425,620	1,515,142	1,580,054	13,230,405
Wastewater O&M Totals	2,115,732	2,450,562	2,513,598	2,561,304		2,643,511	2,729,346	2,701,054	2,782,261	2,920,817	3,243,052	26,661,237
Water Reticulation												
WR202501. CONSULTANCY WAIROA	10,000	46,575	10,610	10,880		11,170	11,450	11,770	12,100	55,980	12,750	193,285
WR20260. DATA/SYSTEM ANALYSIS	20,000	20,700	21,220	21,760		22,340	22,900	23,540	24,200	24,880	25,500	227,040

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
WR20351. ELECTRICITY TUAI	5,318	5,504	5,642	5,786		5,940	6,089	6,259	6,434	6,615	6,780	60,366
WR20701. INVESTIGATE STRUCTURAL LIFE TA	120,000	0	0	0		0	0	0	0	0	0	120,000
WR22001. ASSET MANAGEMENT WAIROA	0	20,700	0	0		0	0	0	0	0	0	20,700
WR5000. WAIROA PIPELINES - OPS & MTCE	99,425	102,905	105,490	108,174		111,058	113,842	117,023	120,304	123,685	126,767	1,128,673
WR5001. Contract Management	109,000	112,161	147,560	151,060		154,700	158,200	161,840	165,620	169,400	173,040	1,502,581
WR5020. WAIROA SVCE CONN - OPS & MTCE	75,850	78,505	85,782	87,965		90,309	92,573	95,160	97,829	100,577	103,084	907,634
WR5030. WAIROA RESERVOIRS OPS & MTCE	5,000	5,175	7,958	0		0	0	0	0	0	9,563	27,695
WR5050. WAIROA BACKFLOW PREVENTERS MTC	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WR5240. FRASERTOWN RESERVOIRS -ELECT	1,126	1,166	1,195	1,225		1,258	1,289	1,325	1,363	1,401	1,436	12,784
WR5300. TUAI PIPELINES OPS & MTCE	3,500	3,623	3,714	3,808		3,910	4,008	4,120	4,235	4,354	4,463	39,732
WR5320. TUAI SVCE CONNECT OPS & MTCE	1,500	1,553	1,592	1,632		1,676	1,718	1,766	1,815	1,866	1,913	17,028
WR5330. TUAI RESERVOIRS OPS & MTCE	0	0	0	8,160		8,378	8,588	0	0	0	0	25,125
WR5340. TUAI RESERVOIRS - ELECTRICITY	1,144	1,184	1,214	1,245		1,278	1,310	1,347	1,385	1,424	1,459	12,990
WR5440. MĀHANGA RESERVOIRS ELECTRICITY	4,040	4,181	4,286	4,396		4,513	4,626	4,755	4,888	5,026	5,151	45,862
WR5040. CHECK HYDRANTS/FLUSHING MAINS	10,000	10,350	11,406	11,696		12,008	12,309	12,653	13,008	13,373	13,706	120,508
Water Reticulation Subtotals	470,903	419,456	412,972	423,227		434,121	444,625	447,443	459,230	514,801	491,985	4,518,763
Water Reticulation Indirect Asset Costs												
Depreciation and Amortisation												
WR20301. Depreciation Wairoa Supply	354,690	390,143	400,779	410,977		421,932	432,508	444,596	457,061	469,904	481,614	4,264,205
WR20303. Depreciation Frasertown Supply	0	0	0	877		901	923	949	976	1,003	1,028	6,657
WR203099. Non Funded Depreciation	80,300	83,111	85,198	87,366		89,695	91,944	94,513	97,163	99,893	102,383	911,566
Finance Costs												
WR1540. INTEREST PUBLIC DEBT (EX WT IM	439	1,762	2,647	58,272		96,366	95,101	93,836	92,570	91,305	90,039	622,337
Other Operating Expenses												
WR153501. INSURANCE WAIROA	67,783	70,155	71,917	73,748		75,713	77,611	79,780	82,017	84,322	86,423	769,469
WR153505. INSURANCE WAIROA PERI URBAN	929	962	986	1,011		1,038	1,064	1,094	1,125	1,156	1,185	10,552
WR153510. INSURANCE FRASERTOWN	1	1	1	1		1	1	1	1	1	1	7
WR153515. INSURANCE TUAI	1,755	1,817	1,862	1,910		1,961	2,010	2,066	2,124	2,184	2,238	19,927
WR153520. INSURANCE MAH 466 ANGA	374	388	397	407		418	429	441	453	466	477	4,251
WR39051. CORPORATE OVERHEADS	232,143	238,414	257,743	254,161		264,872	279,974	281,942	281,549	294,020	294,535	2,679,354
WR39052. ENGINEERING OVERHEADS	27,624	91,347	101,474	101,662		107,646	112,074	100,001	102,910	113,364	110,641	968,742
WR3910. RATES	56	58	60	61		63	64	66	68	70	72	637
WR39101. RATES WAIROA	912	944	968	993		1,019	1,045	1,074	1,104	1,135	1,163	10,358
WR39103. RATES FRASERTOWN	23	24	25	25		26	26	27	28	29	29	262
WR39104. RATES TUAI	73	76	78	80		82	84	86	89	91	93	832
WR39105. RATES MĀHANGA	11	12	12	12		12	13	13	13	14	14	127
Water Reticulation Indirect Costs Totals	767,114	879,213	924,146	991,563		1,061,745	1,094,870	1,100,485	1,119,252	1,158,956	1,171,936	10,269,281
Water Reticulation O&M Totals	1,238,017	1,298,669	1,337,119	1,414,790		1,495,866	1,539,496	1,547,928	1,578,482	1,673,757	1,663,921	14,788,045

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Water Treatment												
WT1035. GENERAL EXPENSES	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT1075. COMMUNICATIONS-WATER TREATMENT	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT2025. CONSULTANCY	10,000	10,350	10,610	0		0	0	0	0	0	0	30,960
WT20273. Investigation Sandfilter Quality	5,000	0	0	0		0	5,725	0	0	0	0	10,725
WT20351. ELECTRICITY INTAKE	52,600	54,441	55,809	57,229		58,754	60,227	61,910	63,646	65,434	67,065	597,115
WT20352. ELECTRICITY WATER TREATMENT PL	52,650	54,493	55,862	57,283		58,810	60,284	61,969	63,707	65,497	67,129	597,683
WT20353. ELECTRICITY AFFCO	31,762	32,874	33,699	34,557		35,478	36,367	37,384	38,432	39,512	40,497	360,562
WT20354. ELECTRICITY TAWHARA	35,000	36,225	37,135	38,080		39,095	40,075	41,195	42,350	43,540	44,625	397,320
WT20356. Electricity Tawhara Reservoirs	2,500	2,588	2,653	2,720		2,793	2,863	2,943	3,025	3,110	3,188	28,380
WT20401. OPS-INTAKE	6,500	6,728	6,897	7,072		7,261	7,443	7,651	7,865	8,086	8,288	73,788
WT204011. OPS-INT-GRDS	500	518	531	544		559	573	589	605	622	638	5,676
WT204012. OPS-INT-MAIN	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204013. OPS INTAKE - SCREEN MTCE	3,000	3,105	3,183	3,264		3,351	3,435	3,531	3,630	3,732	3,825	34,056
WT20402. OPS-PLANT-ADMIN	4,000	4,140	4,244	4,352		4,468	4,580	4,708	4,840	4,976	5,100	45,408
WT204021. OPS-PLANT-GROUNDS	500	518	531	544		559	573	589	605	622	638	5,676
WT2040211. OPS-PLANT STORAGE TANK	0	518	0	544		0	573	0	605	0	638	2,877
WT204023. OPS-PLANT-PUMP	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204026. OPS-PLANT-TELEMETRY	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT204028. OPS-PLANT SECURITY	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204029. OPS-PLANT SERVICES	20,000	20,700	21,220	21,760		22,340	22,900	23,540	24,200	24,880	25,500	227,040
WT20403. OPS-PLANT-CHEM	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT204034. OPS-PROCESS SLUDGE DISPOSAL	6,000	6,210	6,366	6,528		6,702	6,870	7,062	7,260	7,464	7,650	68,112
WT204035. OPS-QUALITY MANUALS	1,000	0	0	0		0	1,145	0	0	0	0	2,145
WT204037. LABORATORY REGISTRATION	5,500	5,693	5,836	5,984		6,144	6,298	6,474	6,655	6,842	7,013	62,436
WT20404. PUMPING MAIN	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204041. OPS-AFFCO PUMPING	1,100	1,139	1,167	1,197		1,229	1,260	1,295	1,331	1,368	1,403	12,487
WT204043. OPS-BOUNDARY-RESERVOIRS	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204044. Ops-Tawhara Boundary Pump	4,000	4,140	4,244	4,352		4,468	4,580	4,708	4,840	4,976	5,100	45,408
WT204045. OPS-WAIROA WATER COMP	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT204046. OPS MANUALS REVIEW & UPDATE	500	518	531	544		559	573	589	605	622	638	5,676
WT204049. Ops-Tawhara Road New Pump Stn	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204051. Ops-Awatere Road Pump Stn	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204055. Ops-Hilcrest Pump Stn	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204074. OPS-TUAI WT PLANT COSTS	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT204075. Tuai OPS Telemetry	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204077. Tuai OPS Water Compliance	1,500	1,553	1,592	1,632		1,676	1,718	1,766	1,815	1,866	1,913	17,028
WT204078. Tuai Plant Servicing	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204087. Māhanga OPS Water Compliance	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204088. Māhanga Plant Servicing	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204089. Māhanga Water Chlorine Ops	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
WT20451. CHEM - ALUM	25,000	25,875	26,525	27,200		27,925	28,625	29,425	30,250	31,100	31,875	283,800
WT20452. CHEM-POLY	7,000	7,245	7,427	7,616		7,819	8,015	8,239	8,470	8,708	8,925	79,464
WT20454. CHEM-CHLOR	12,000	12,420	12,732	13,056		13,404	13,740	14,124	14,520	14,928	15,300	136,224
WT20455. CHEM-CAUSTIC SODA	26,000	26,910	27,586	28,288		29,042	29,770	30,602	31,460	32,344	33,150	295,152
WT20456. CHEM-PACL	52,000	53,820	55,172	56,576		58,084	59,540	61,204	62,920	64,688	66,300	590,304
WT205027. FILTER MEDIUM CHEM CLEANING	0	0	0	0		5,585	0	0	0	6,220	0	11,805
WT205028. FILTER MEDIUM ADDING	0	0	0	0		0	57,250	0	0	0	0	57,250
WT205053. WTP UV REACTORS	0	0	9,549	0		0	10,305	0	0	11,196	0	31,050
WT2055. OPS-HEALTH & SAFETY	3,000	3,105	3,183	3,264		3,351	3,435	3,531	3,630	3,732	3,825	34,056
WT20551. OPS MANUALS/RISK MANAGEMENT	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT2065. Motor Vehicle Expenses MRF60	7,000	7,245	7,427	7,616		7,819	8,015	8,239	8,470	8,708	8,925	79,464
WT20651. Motor Vehicle Expenses Trailer	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT20701. WATER TESTING EXPENSES	1,500	1,553	1,592	1,632		1,676	1,718	1,766	1,815	1,866	1,913	17,028
WT20704. CHEMICAL TEST	2,500	2,588	2,653	2,720		2,793	2,863	2,943	3,025	3,110	3,188	28,380
WT20706. CYNO BACTERIA TESTS	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT204063. REPAIRS FTOWN PUMP SYS	1,000	1,035	1,061	1,088		1,117	1,145	1,177	1,210	1,244	1,275	11,352
WT205021. REPAIRS LAB EQUIP	5,000	0	0	5,440		0	0	5,885	0	0	6,375	22,700
WT205022. REPAIRS PLANT BUILDINGS	5,000	5,175	5,305	5,440		5,585	5,725	5,885	12,100	6,220	6,375	62,810
WT205023. REPAIRS PLANT PROCESS	5,000	5,175	5,305	5,440		5,585	5,725	5,885	6,050	6,220	6,375	56,760
WT205024. REPAIRS PLANT PUMP SYS	0	0	0	21,760		22,340	0	0	0	0	0	44,100
WT205029. REPAIRS WASTE WATER DRAIN	2,500	0	2,653	0		2,793	0	2,943	0	3,110	0	13,998
WT20503. REPAIRS SLUDGE DISP SYS	1,000	0	1,061	0		1,117	0	1,177	0	1,244	0	5,599
WT205041. REPAIRS BOUNDARY BLDG	1,000	1,035	1,061	0		1,117	0	1,177	0	1,244	0	6,634
WT205044. REPAIRS AFFCO PUMPS	0	10,350	10,610	0		0	0	0	0	0	0	20,960
WT205049. REPAIRS TAWHARA PUMPS	0	20,700	21,220	0		0	0	0	0	0	0	41,920
WT205052. REPAIRS INTAKE PUMP SYS	0	0	26,525	27,200		0	0	0	0	31,100	31,875	116,700
WT205074. MAINTENANCE TUAI WTP COSTS	1,000	1,035	0	1,088		0	1,145	0	1,210	0	1,275	6,753
Water Treatment Subtotals	447,112	479,321	529,558	513,658		502,775	557,743	506,242	516,806	577,355	576,443	5,207,012
Water Treatment Indirect Asset Costs												
Depreciation and Amortisation												
WT2030. Depreciation Motor Vehicle	800	828	849	870		894	916	942	968	995	1,020	9,082
WT20301. Depreciation Treatment Plant	198,794	9,261	10,244	183,507		222,843	228,429	234,813	259,698	246,506	249,800	1,843,895
WT203099. Non Funded Depreciation	2,200	198,768	203,761	2,394		2,457	2,519	2,589	2,662	2,737	2,805	422,892
Finance Costs												
WT15402. PUBLIC DEBT INTEREST (IMPS 198	53,726	53,726	54,023	54,002		53,981	53,959	53,938	71,613	71,138	70,663	590,770
Other Operating Expenses												
WT1535. INSURANCE	38,000	39,330	40,318	41,344		42,446	43,510	44,726	45,980	47,272	48,450	431,376
WT1545. LEGAL FEES	20,000	10,350	0	0		0	0	0	0	0	0	30,350
WT39051. CORPORATE OVERHEADS	63,022	64,724	69,971	68,999		71,907	76,007	76,541	76,434	79,820	79,960	727,385
WT39052. ENGINEERING OVERHEADS	5,525	18,269	20,295	20,332		21,529	22,415	20,000	20,582	22,673	22,128	193,748
WT3910. RATES	296	307	314	322		331	339	349	358	369	378	3,363

O & M Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Employee Benefit Expenses												
WT2505. SALARIES & WAGES	141,143	145,637	149,364	156,880		161,706	163,524	165,408	167,358	169,378	171,467	1,591,864
WT2525. STAFF TRAINING	10,000	10,290	10,540	10,790		11,040	11,290	11,550	11,820	12,090	12,350	111,760
WT2535. TRAVEL EXPENSES	3,000	3,087	3,162	3,237		3,312	3,387	3,465	3,546	3,627	3,705	33,528
Water Treatment Indirect Costs Totals	536,505	554,577	562,842	542,677		592,446	606,295	614,321	661,020	656,605	662,725	5,990,013
Water Treatment O&M Totals	983,617	1,033,897	1,092,399	1,056,335		1,095,221	1,164,038	1,120,563	1,177,826	1,233,961	1,239,168	11,197,026
THREE WATERS O&M TOTAL	4,909,431	5,411,930	5,578,757	5,670,760		5,902,376	6,114,798	6,065,095	6,234,951	6,563,846	6,883,341	59,335,285

RENEWALS 10 YEAR FORECAST

Capital Renewals Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Stormwater												
CRARER - CARROLL ST PIPELINE RENEWAL	0	0	0	0		279,250	0	0	0	0	0	279,250
CCTV	0	0	53,050	54,400		0	0	0	0	0	0	107,450
Stormwater Subtotals	0	0	53,050	54,400		279,250	0	0	0	0	0	386,700
Wastewater												
Construction Of Plant for new Wairoa Consent	5,000	0	5,305	0		5,585	0	5,885	0	6,220	0	27,995
Step Filter	0	0	0	0		0	11,450	0	0	0	0	11,450
Renewal Pump Stations	100,000	51,750	53,050	54,400		55,850	68,700	0	0	0	0	383,750
Tuai Sand Filters	0	0	0	0		0	0	0	0	0	0	0
Road Reseal Wairoa Waste Water Plant	0	51,750	0	0		0	0	0	363,000	0	0	414,750
New Genertion Chopper Pumps	0	0	10,610	0		0	11,450	29,425	30,250	43,540	31,875	157,150
Māhia sewer Rising Main Resilience	100,000	0	0	0		0	0	0	0	0	0	100,000
Scott Street Sewer	200,000	0	0	0		0	0	0	0	0	0	200,000
DIA T1 Waster Water Pipe Renewals	740,000	0	0	0		0	0	0	0	0	0	740,000
DIA T1 Telemetry base sets and pump station renewals	330,000	0	0	0		0	0	0	0	0	0	330,000
WAIROA RETICULATION - RENEWALS	0	0	0	0		0	0	294,250	242,000	248,800	255,000	1,040,050
Wastewater Subtotals	1,475,000	103,500	68,965	54,400		61,435	91,600	329,560	635,250	298,560	286,875	3,405,145
Water Reticulation												
WAIROA PIPELINE RENEWALS - TOTAL	0	0	636,600	380,800		390,950	687,000	588,500	484,000	497,600	510,000	4,175,450
Water Main Replacement Cemetery / Kitchener Rd	25,000	0	0	0		0	0	0	0	0	0	25,000
WATER METER REPLACEMNTS F'TOWN	0	0	0	0		1,312,001	0	0	0	0	0	1,312,001

Capital Renewals Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
MARINE PARADE REPLACEMENT MAIN	0	0	0	1,879,920		0	0	0	0	0	0	1,879,920
TAWHARA MAINS RENEWAL	0	0	31,830	0		0	0	0	0	0	0	31,830
VALVE REPLACEMENTS	0	77,625	79,575	81,600		83,775	85,875	88,275	90,750	93,300	95,625	776,400
WAIROA RESERVOIRS - RENEWALS	80,000	0	84,880	0		89,360	0	94,160	0	99,520	0	447,920
Water Reticulation Subtotals	105,000	77,625	832,885	2,342,320		1,876,086	772,875	770,935	574,750	690,420	605,625	8,648,521
Water Treatment												
Install Intake WAN	0	0	0	0		0	0	0	9,680	0	0	9,680
Renewal Chemical Dosing	0	5,175	0	0		0	0	0	0	0	0	5,175
RENEWAL EXPENDITURE	60,000	25,875	26,525	27,200		27,925	28,625	29,425	30,250	31,100	31,875	318,800
WTP CARPARKS & ACCESS RESEAL	0	0	0	10,880		0	0	0	0	0	0	10,880
HP ProBook Laptop	3,000	0	0	0		3,351	0	0	0	3,732	0	10,083
Purchase Vehicle	0	0	0	102,790		0	0	0	0	54,900	62,350	220,040
Boundary Valves - Pump Station	20,000	10,350	21,220	10,880		22,340	11,450	23,540	12,100	24,880	12,750	169,510
Safety Improvement	10,000	10,350	10,610	10,880		11,170	11,450	11,770	12,100	12,440	12,750	113,520
Fire Alarm Treatment Plant	0	0	10,610	0		0	0	0	0	0	0	10,610
Sheetpile protection of intake	0	0	0	0		0	0	0	121,000	0	0	121,000
Replace Vinyl Flooring WTP	0	0	0	0		0	0	0	30,250	0	0	30,250
Future Capital Requirements	0	20,700	0	16,320		0	17,175	0	623,150	0	19,125	696,470
Water Treatment Subtotals	93,000	72,450	68,965	178,950		64,786	68,700	64,735	838,530	127,052	138,850	1,716,018
TOTAL CAPEX RENEWALS	1,673,000	253,575	1,023,865	2,630,070		2,281,557	933,175	1,165,230	2,048,530	1,116,032	1,031,350	14,156,384

CAPITAL IMPROVEMENTS 10 YEAR FORECAST

Capital Improvements Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Stormwater												
MĀHIA BCH PIPELINES RENEWALS	500,000	0	0	0		0	0	0	0	0	0	500,000
Piping Open Drains Kitchener str to Clyde contribution	42,000	0	0	0		0	0	0	0	0	0	42,000
PIPING OPEN DRAINS - WAIROA	0	0	0	0		0	0	0	0	152,598	156,400	308,998
Stormwater Subtotals	542,000	0	0	0		0	0	0	0	152,598	156,400	850,998
Wastewater												
Consent	200,000	51,750	42,440	32,640		0	0	0	0	0	0	326,830
Outfall - Lowe Environmental	2,027,550	0	0	0		0	0	0	0	0	0	2,027,550
Storage - Lowe Environmental	0	0	1,326,250	0		0	0	0	0	0	0	1,326,250
Catchment - Lowe Environmental	150,000	57,287	60,318	63,594		67,188	70,933	76,505	0	0	0	545,825

Capital Improvements Expenditure Forecast	YR 1	YR 2	YR 3	YR 4		YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	Total
	2021/22	2022/23	2023/24	2024/25		2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	
Magnaflux Transducers	0	0	0	0		0	5,725	0	0	0	0	5,725
CCTV Infiltration Investigation	0	0	0	0		0	171,750	176,550	0	0	0	348,300
Purchase Flow Meters	0	0	0	0		0	0	23,540	0	0	0	23,540
MĀHIA BEACH SEWERAGE SYSTEM	0	0	0	0		0	0	0	0	870,800	892,500	1,763,300
Replacement SCADA PC	0	0	10,610	0		0	11,450	0	0	12,440	0	34,500
Rising Mains North Clyde & Alexander Park	100,000	258,750	0	0		0	0	0	0	0	0	358,750
DIA T1 BNRAS Stage 1 AMD	400,000	0	0	0		0	0	0	0	0	0	400,000
DIA T1 Wairoa Waste water Filtration	410,000	0	0	0		0	0	0	0	0	0	410,000
DIA T1 Wairoa Waste Water Irrigation Mucalo's	240,000	0	0	0		0	0	0	0	0	0	240,000
DIA T1 Dedicated pump station generators	270,000	0	0	0		0	0	0	0	0	0	270,000
DIA T1 Ōpoutama / Bluebay stage 1	190,000	0	0	0		0	0	0	0	0	0	190,000
DIA T1 Ōpoutama / Bluebay Stage 2	750,000	0	0	0		0	0	0	0	0	0	750,000
Waste Water Subtotals	4,737,550	367,787	1,439,618	96,234		67,188	259,858	276,595	0	883,240	892,500	9,020,570
Water Reticulation												
Tuai Reticulation	0	517,500	0	0		0	0	0	0	0	0	517,500
DIA T1 Smart Meters Install Wairoa Township	1,325,000	0	0	0		0	0	0	0	0	0	1,325,000
DIA T1 Māhanga Water supply Rain Water tanks	75,000	0	0	0		0	0	0	0	0	0	75,000
WAIROA P/URBAN CONNECTIONS NEW	30,000	31,050	0	0		0	0	0	0	0	0	61,050
Water Subtotals	1,430,000	548,550	0	0		0	0	0	0	0	0	1,978,550
Water Treatment												
Total	0	0	0	0		0	0	0	0	0	0	0
Total	6,709,550	916,337	1,439,618	96,234		67,188	259,858	276,595	0	1,035,838	1,048,900	11,850,118

