



Wastewater Activity Management Plan 2018



Wastewater Activity Management Plan

Quality Information

Document	Wastewater Activity Management Plan
Ref	Version 1
Date	March 2018
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Copies	

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1. Executive Summary

Community Infrastructure

Community Infrastructure is about providing the 'core' services that are traditionally managed by Council - these include the maintenance and development of roads, stormwater, wastewater, water supply and waste management.

Why we do this activity

The Wastewater service ensures that wastewater (sewerage and the "grey" water that goes down your drains) is collected, treated and disposed of appropriately. The treatment is particularly important, as after wastewater is treated it is discharged into waterways or to land.

We aim to ensure Wastewater is well managed for the wellbeing of our community and our environment.

What we do now

We supply wastewater services to the urban areas of Matamata, Morrinsville, Te Aroha, Waihou, Tahuna, Rukumoana, Raungaiti and Waharoa by collecting the wastewater from these communities and treating it through five treatment plants.

The treatment plants are situated in Matamata (which also treats wastewater from Waharoa and Raungaiti), Morrinsville (which also treats wastewater from Rukumoana), Te Aroha, Tahuna and Waihou. The Morrinsville treatment plant also treats and disposes of rural septic tank waste.

Approximately 50% of the wastewater treated in Morrinsville is from local industry. Industrial and commercial wastewater is regulated through tradewaste agreements and our Tradewaste Bylaw 2011. Under our tradewaste agreements, companies pay for the cost of processing their waste.

The efficient operation and maintenance of our wastewater network is achieved by providing adequate backup facilities, equipment, machinery and staff to handle any break down of the service. Corrective and preventative maintenance programmes are in place to ensure our systems remain in good condition.

A large volume of stormwater is known to enter both the Morrinsville and Te Aroha wastewater systems, which can cause overflows and affect the on-going operation of the treatment plants. Part of our work in the future is to reduce the amount of stormwater entering our wastewater system.

These strategies include the use CCTV surveys, smoke testing and on-going property inspection programmes and the instigation of an integrated renewals strategy.

Assessment of Wastewater Services

The Local Government Act 2002 requires us to complete an assessment of our water, wastewater and stormwater services and include a summary of the significant variations to

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this assessment in the Long Term Plan. An update (2017) has been completed of the 2005 Assessment.

The assessment of the Water and Sanitary Services has been the basis for wastewater strategies. Treatment plant upgrades have also been necessary to achieve compliance with resource consents and meet the community's expectations regarding the water quality of the rivers that the wastewater treatment plants discharge into.

The Long Term Plan is consistent with the assessment and there are no significant variations.

Looking ahead

Our vision

- Managing new plants to meet environmental standards
- To ensure that wastewater is collected, treated and disposed of appropriately to ensure the health and wellbeing of our community.
- Investigate disposal of bio-solids to land to reduce waste into our environment
- Reduce inflow and infiltration of stormwater into the sewer system to prevent overflows into the environment
- Meet growth requirements by providing supporting infrastructure where required

Growth and demand

The key drivers that influence growth and the demand on Wastewater are:

- Population
- Industry
- Legislation and environmental standards
- Community expectations (levels of service)

As a result of the projected population increase we will need to ensure that the wastewater system can meet the increased demand, particularly within existing and proposed growth areas. Currently our treatment plants can provide for this growth for the next 15-20 years.

Some growth areas are likely to require upgrading of parts of the reticulation. The majority of the costs for this will be met by developers.

Legislation and environmental standards are also key drivers of wastewater and these focus on the effects of the discharges on both the receiving waters and the environment in general

Our challenges, assumptions and uncertainties

When planning for the future of this activity, we have had to identify the key challenges to success, the assumptions that we have made and the uncertainties we will face. These are outlined below.

Key challenges

- Discharge consent requirements
- Environmental standards
- Resilience of our network
- Impacts of industry on wastewater demand

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- The gap between the costs of desired infrastructure improvements and the communities ability to pay
- Changing weather patterns/Climate change and impact on assets

Assumptions

- The current services and how we provide them will continue

Uncertainties

- New resource consent conditions still being negotiated for Te Aroha WWTP
- Availability of skilled staff to operate more complex wastewater treatment plants
- Ensuring the income from development contributions meets our rate of expenditure on Wastewater growth projects
- The effects of storm events on the network

Resource Consents from Waikato Regional Council

We hold eighteen consents for wastewater discharges from our five wastewater treatment plants from the Waikato Regional Council. These consents are important as they give us permission to discharge [water and odour] from our wastewater treatment plants. .

They also set the environmental standards that we need to meet when we carry out this activity.

Resource consents can be costly, this is both to obtain (applications sometimes involve complex science and consultation requirements) and to upgrade our assets to meet environmental standards.

It has been necessary to upgrade all our wastewater treatment plants to comply with their resource consent conditions or because their resource consents need to be renewed.

Levels of service

- Our levels of service (from 2015-25 LTP) are:
- We will have an effective wastewater system that provides an appropriate level of protection.
- We will protect the environment by ensuring our wastewater is properly treated before being discharged to our environment.
- We will have reliable wastewater systems and will respond to requests for service from our residents in a timely manner.

To monitor how we are meeting our levels of service, performance measures are used. Some mandatory measures are set by Central Government and effective from 2015 – 16:

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Community Outcome – Connected Infrastructure	Level of Service	Performance Measures	Historical Achievement Levels (new measures 2015- 16)	Target			
	2015-25 LTP			2018/19	2019-20	2020-2021	2021-22
Infrastructure and services are fit for purpose and affordable, now and in the future.	We will have an effective wastewater system that provides an appropriate level of protection.	The number of dry weather sewage overflows from our wastewater system. (Expressed per 1,000 connections per year to our wastewater system).*	7 complaints total	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)
Quality infrastructure is provided to support community wellbeing.							
	We will protect the environment by ensuring our wastewater is properly treated before being discharged to our environment.	Compliance with our resource consents for discharge from our wastewater systems (measured by the number of abatement notices; infringement notices; enforcement orders, and convictions received in relation to those resource consents).*	Zero	Zero	Zero	Zero	Zero
		Where we attend to sewage overflows resulting from a blockage or other fault in our wastewater system we will measure the following median response times:					
We have positive partnerships with external providers of infrastructure to our communities	We will have reliable wastewater systems and will respond to requests for service from our residents in a timely manner.	Attendance time: from the time that we receive notification to the time that service personnel reach the site.*	Median 40min	Median 4 hours or less	Median 4 hours or less	Median 4 hours or less	Median 4 hours or less
		Resolution time: from the time that we receive notification to the time that service personnel confirm resolution of the blockage or other fault.*	Median: 2 hours 29min	Median 24 hours or less	Median 24 hours or less	Median 24 hours or less	Median 24 hours or less

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		The total number of complaints received by Council about any of the following:					
		-Sewage odour	3 complaints total	4 per 1,000 connections (32 complaints total)	4 per 1,000 connections (32 complaints total)	4 per 1,000 connections (32 complaints total)	4 per 1,000 connections (32 complaints total)
		-Wastewater system faults	3 complaints total	2 per 1,000 connections (64 total)	2 per 1,000 connections (64 total)	2 per 1,000 connections (64 total)	2 per 1,000 connections (64 total)
		--Wastewater system blockages	17 complaints	8 per 1,000 connections (64 complaints total)	8 per 1,000 connections (64 complaints total)	8 per 1,000 connections (64 complaints total)	8 per 1,000 connections (64 complaints total)
		-Council's response to issues with our wastewater system (expressed as 1,000 connections per year)*	1 complaint total	2 per 1,000 connections (16 complaints total)	2 per 1,000 connections (16 complaints total)	2 per 1,000 connections (16 complaints total)	2 per 1,000 connections (16 complaints total)

Significant effects

Our activities have the potential to have both positive and negative effects on community wellbeing. The significant positive effects and significant negative effects of Wastewater are identified below, along with how we plan to manage them.

Significant negative effects of this activity					
	Affected well-beings				How we will mitigate the effects
	S	C	EC	EN	
Poor management of our Wastewater systems could pollute the environment or cause health risks	✓	✓	✓	✓	Maintain current consents for all wastewater treatment plant discharges Complete upgrades of treatment plants to ensure compliance with resource consents
Discharge of poorly treated bio solids to land could pollute the environment or cause health risks	✓	✓		✓	Implement Bio solids management with wastewater treatment plant upgrades
Overflows that discharge to land or water could pollute the environment or cause health risks	✓	✓		✓	Pump station overflows are generally reported and resolved within a short space of time Renewals strategy will incorporate investigation of flows, standby generators and storage requirements

Significant positive effects of this activity					
	Affected Well-beings				How we will maintain the effects
	S	C	EC	EN	
Community wastewater is collected and treated to a high standard reducing environmental and health risks	✓	✓		✓	Maintain an efficient and cost effective wastewater system and ensure compliance with resource consents

Sustainability – thinking for the future

Sustainability is about ensuring that all resources are wisely used and managed for a balance of environmental, social, cultural and economic wellbeing. Our existing and future approach to sustainable management and development for wastewater includes:

- Providing systems to safely dispose of wastewater
- Helping protect the environment by maintaining a high level of compliance resource consent conditions
- Efficient management of the wastewater systems to ensure they provide value for money
- Developing strategies to manage climate change

Risk Management

We have adopted a Risk Management Policy to support and promote risk management as an integral part of the Council's internal controls and Corporate Governance.

We have also appointed a specific Committee to monitor risk.

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Projected Financial Costs (no allowance for inflation)

Renewals and Capital

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Retic Renewals	1,427,940	1,427,940	1,427,940	1,427,940	271,541	271,541	271,541	271,541	271,541	408,900
Plant Renewals	1,172,032	857,402	1,323,346	1,545,425	1,178,746	1,988,586	1,398,781	1,820,403	1,649,799	990,686
Total Renewals	2,599,972	2,285,342	2,751,286	2,973,365	1,450,287	2,260,127	1,670,322	2,091,944	1,921,340	1,399,586
Capital	1,260,000	4,770,000	2,100,000	200,000	4,100,000	100,000	450,000	100,000	7,600,000	7,950,000

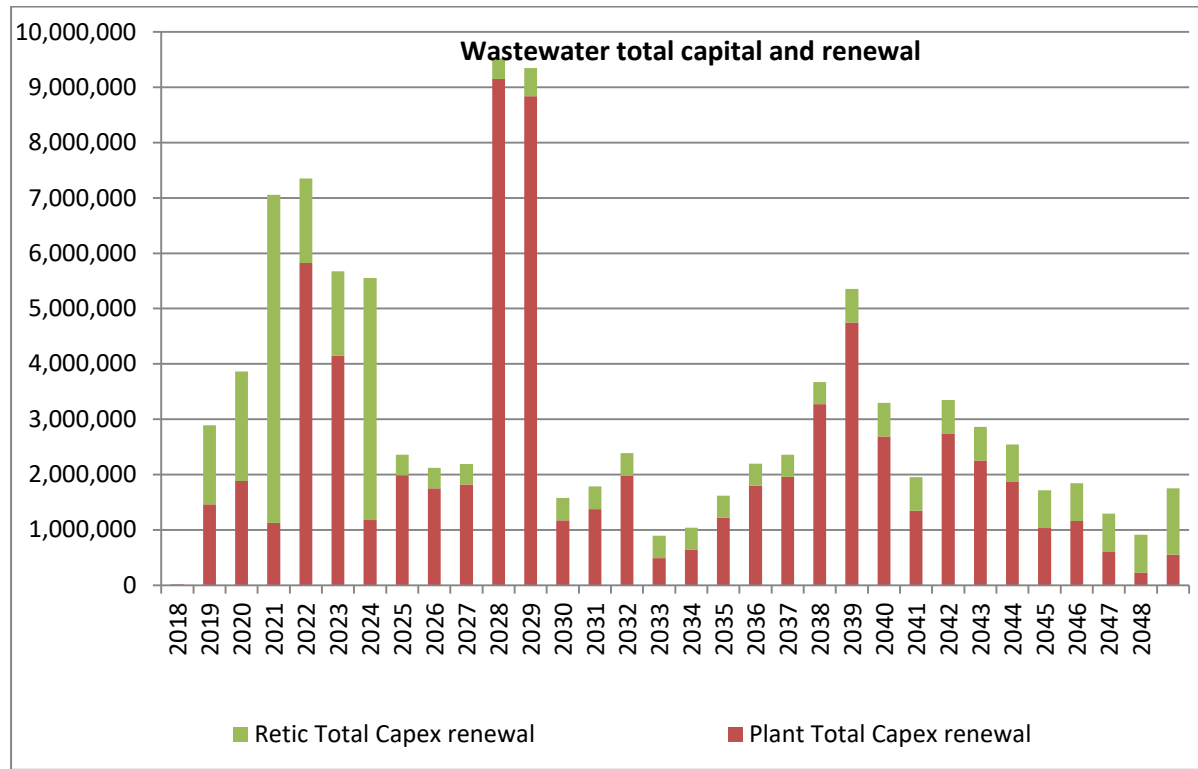
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Retic renewals	408,900	408,900	408,900	408,900	397,969	397,969	397,969	397,969	397,969	608,690
Plant Renewals	1,169,294	1,375,708	1,975,754	486,282	642,791	1,219,223	1,796,783	1,961,467	3,270,801	4,746,876
Total Renewals	1,578,194	1,784,608	2,384,654	895,182	1,040,760	1,617,192	2,194,752	2,359,436	3,668,770	5,355,566
Capital	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Retic renewals	608,690	608,690	608,690	608,690	680,076	680,076	680,076	680,076	680,076	1,199,511
Plant Renewals	2,688,984	1,345,734	2,736,032	2,251,814	1,863,568	1,032,876	1,162,814	612,834	229,111	552,111
Total Renewals	3,297,674	1,954,424	3,344,722	2,860,504	2,543,644	1,712,952	1,842,890	1,292,910	909,187	1,751,622
Capital	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

Operations and Asset Management

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Operations	3,355,581	3,215,581	3,228,581	3,298,581	3,278,581	3,228,581	3,228,581	3,228,581	3,228,581	3,228,581
Asset Management	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000

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The figure above shows (dark red lines) the smoothed cost of reticulation renewals combined with the actual cost of waste water treatment plant renewals over the 30 years of this strategy. It also includes the capital costs. Wastewater treatment plant renewals are difficult to try to smooth because the individual asset vary so much in cost and criticality.

2. Introduction

2.1 Purpose of the Plan

Purpose of this Wastewater Activity Management Plan (WWAMP) is to: ensure that assets are operated and maintained in a sustainable and cost effective manner, so that they provide the required level of service for present and future customers.

The Wastewater Activity Management Plan supports the purpose by:

- Demonstrating responsible management and operation of Wastewater assets which represent a significant, strategic and valuable asset belonging to the Matamata-Piako District
- Justify funding requirements
- Demonstrating regulatory compliance, Section 94(1) of the LGA 2002 which in summary requires the Long Term Plan (LTP) to be supported by:
 - quality information and assumptions underlying forecast information
 - framework for forecast information and performance measures are appropriate to assess meaningful Levels of Service
- Demonstrating clear linkage to community agreed outcomes with stated Levels of Service

The specific purpose of this plan is to:

- Improve understanding of service level standards and options
- Identify minimum lifecycle (long term) costs to an agreed level of service
- Better understand and forecast asset related management options and costs and ability to even out peak funding demands
- Clearly justify 'forward works' programmes
- Manage risk of asset failure
- Improve decision-making by providing appropriate information including costs and benefits for alternative options
- Improve accountability over the use of public resources
- Improve customer satisfaction and organisational image

This WWAMP also aims to meet Council's legal obligation under the Local Government Act 2002 to define levels of service and how these will be provided.

2.2 Relationship with other Plans

The WWAMP is a key component of the Council planning process, linking with the following plans and documents:

Long Term Plan (LTP): A plan required by the Local Government Act 2002 to cover a period of at least 30 years. This plan contains key information about the Council's activities, assets, level of service and cost of providing service. It sets out the Council's funding and financial policies and also a financial forecast for the years covered by the plan. Levels of service and financial programmes as given in this document will be key information for this plan. The WWAMP provides the detail required to support the financial forecast.

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Annual Plan: Detailed action plan on Council's projects and finances for each particular year. The works identified in the WWAMP form the basis on which annual plans are prepared. With the adoption of the LTP the Annual Plan mainly details the budget and sources of funding for the year.

Water & Sanitary Assessment: It is a long-term assessment of the water and sanitary services provided by a local authority. These services include Water Supply, Wastewater Treatment, Stormwater, Public Toilet Facilities, disposal from Stormwater Disposal Systems, Cemeteries and Crematoria and Landfills. The main focus of this assessment is to ensure that public health is maintained.

Contracts: The service levels, strategies and information requirements contained in WWAMP is translated into contract specifications and reporting requirements.

District Plan: The District Plan complies with the requirements of the Resource Management Act. It has implications on the WWAMP in terms of land use policies and the control of environmental effects for new developments.

Standards and Policies: These tools for asset creation and subsequent management are needed to support WWAMP tactics and delivery of service.

Town Strategies 2013-2033: provide a spatial framework for the development of each town in terms of the preferred location of future land-uses, and the integration of the land-uses with transport and other infrastructure. The town strategies provide a description of the potential urban growth, changes in the demographics of our population, the development opportunities and constraints facing our town, our options, and ultimately a strategy for each town.

Infrastructure Strategy: Section 101B of the Local Government Act 2001 Amendment Act 2014 outlines the requirements of the Infrastructure Strategy. The infrastructure strategy must outline how the local authority intends to manage its infrastructure assets (water, wastewater, stormwater and transportation as a minimum), taking into account the need to renew or replace existing assets; and respond to growth or decline in the demand for services; and allow for planned increases or decreases in levels of service; and maintain or improve public health and environmental outcomes or mitigate adverse effects on them; and provide for the resilience of infrastructure assets. The Infrastructure Strategy must cover a period of 30 years.

Growth Strategy: The purpose of the Growth Strategy is to guide the future development of our district in an integrated way, taking advantage of our location and resources.
Other Plans and Strategies – Growth Strategy, Town Strategies

Key Regional documents;

Waikato Plan: The Waikato Plan does not over-ride statutory bodies/committees. It is a multi-agency agreement that provides strategic guidance and advocacy and has been prepared within the framework provided by the Local Government Act 2002.

Waikato Means Business: An Economic Development Strategy for the Waikato Region: Sets out the issues, challenges and opportunities that face the Waikato region. It identifies potential strategic priorities and areas of focus to transform the region.

2.3 Key Stakeholders

This plan recognises the following Key Stakeholders:

Section 2: Introduction

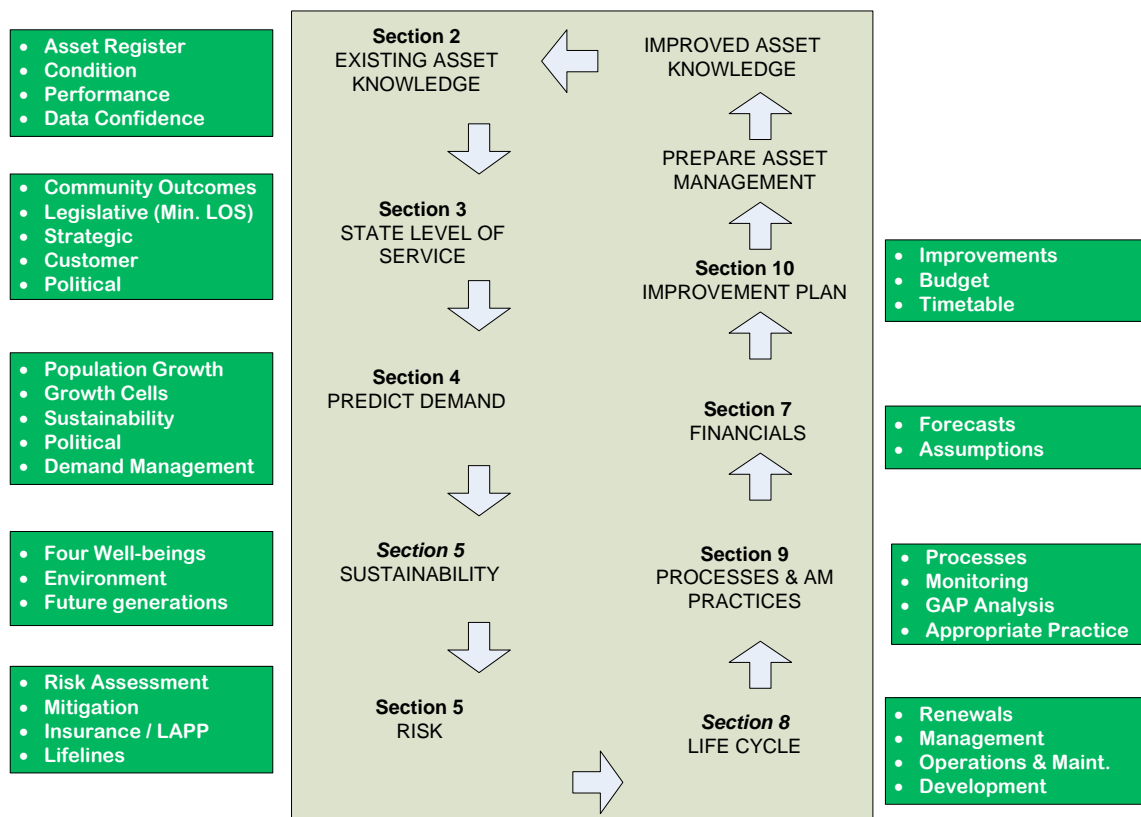
External Stakeholders	Main Interests
Residents/Ratepayers	Public Health and Safety, Service Reliability, Environment, Cost.
Industrial and Commercial Users	Public Health and Safety, Service Reliability, Environment, Cost.
Govt Agencies (Audit NZ, MoH, MoE, etc)	Public Health & Safety, Service, Reliability, Environment, Cost,
Waikato Regional Council & other TLA's	Environment
Tangata Whenua	Environment and Cultural Heritage.
Suppliers	Procurement, Technical

Internal Stakeholders	Main Interests
Councillors and Sub-committees	Public Health and Safety, Service Reliability, Environment, Cost.
Executive	Public Health and Safety, Service Reliability, Environment, Cost
Planning Services	Public Health and Safety, Service Reliability, Environment, Cost
Customer Services	Public Health and Safety, Service Reliability, Environment
Financial Planning	Financial Accounting of Assets
Information Services	Public Health and Safety, Service Reliability, Environment
Safety & Health	Public, Staff & Contractor Health & Safety
Human Resources	Good Employer

2.4 The Plan Format

A top down approach has been taken to develop the Activity Plan, using existing data followed by data improvement. The structure of this plan mirrors the logical process followed for asset management planning as shown below (as shown in Figure 3.1 of the NAMS IIM Manual).

Asset Management Process



The Wastewater Activity Plan Format

	Description	Content
1	Executive Summary	Provides an overview and lists the key issues
2	Introduction	Provides the background & the framework of the Plan
3	Sustainability	Outlines the approach used for sustainable management
4	Levels of Service	Defines current & proposed levels of service
5	Growth & Demand Management	Details growth forecasts & effect on demand
6	Lifecycle Management	Sets out the strategies & programs to achieve the goals
7	Risk Management	Outlines Council's risk management processes
8	Financials	Identifies the funding requirements needed
9	Improvement Plan	Sets out the strategies & programs to achieve the goals

2.5 Description of Activity

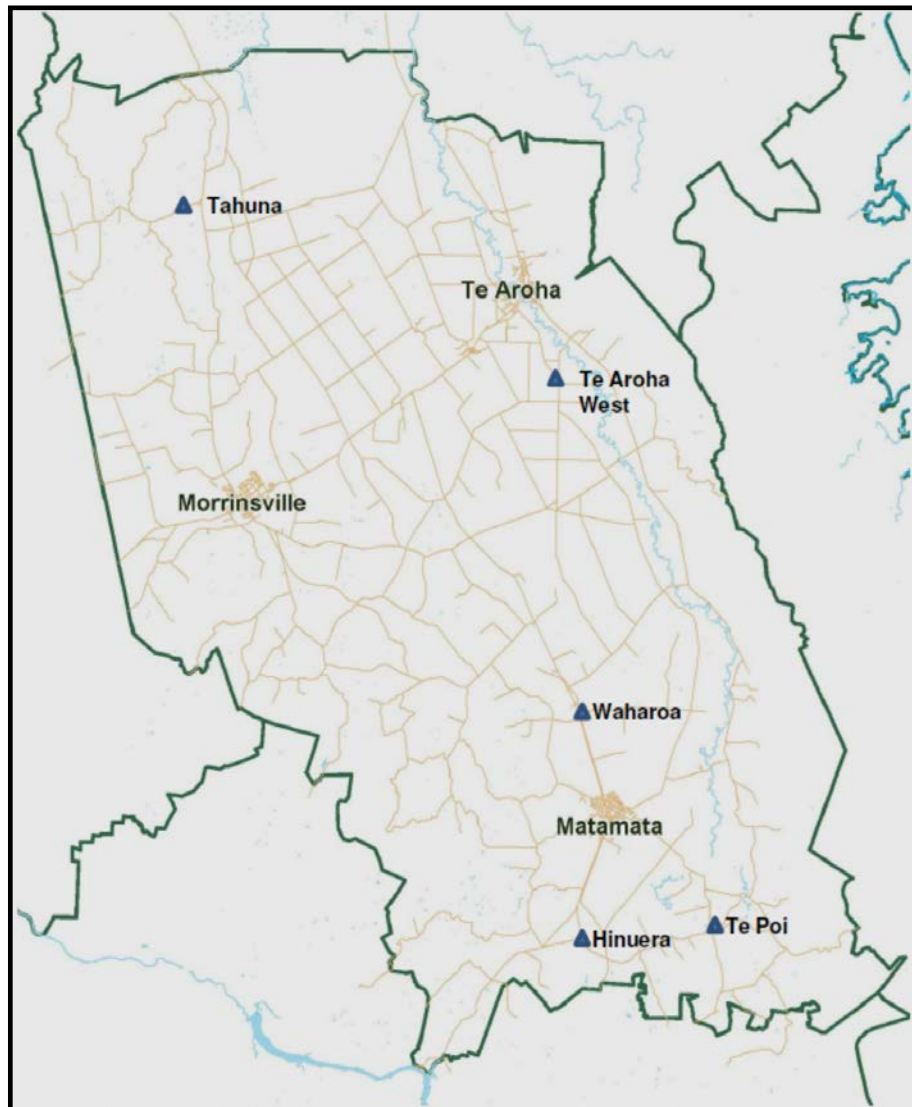
The wastewater activity ensures that wastewater disposal services are provided to urban centres in the District and some rural communities. A brief description of the assets is provided below.

Matamata-Piako District is located in the Waikato region of New Zealand's North Island. The three main urban centres are:

- Matamata
- Morrinsville
- Te Aroha

The total land area of the Matamata-Piako District covers an area of 175,477 hectares.

We have wastewater systems in the townships in the townships of Matamata (including Waharoa and Raungaiti), Morrinsville (including Rukumoana), Te Aroha and, Tahuna.



2.6 Brief Description of the Assets

The wastewater system is made up of the following components:

- Wastewater lines (Mains)
- Service Lines (Property connections)
- Wastewater Points (Inspection chamber, lamphole, manholes etc.)
- Treatment Plants,
- pump stations
- Buildings

Detailed descriptions and a summary of the assets are provided in Section 6 which covers Lifecycle Management.

2.7 Assessment of Water Services 2017

The Local Government Act (LGA) 2002 requires Local Authorities to complete Water and Sanitary Services Assessments with a principle aim of improving public health outcomes for the country.

A review of the 2005 Assessment of Water Services was carried out in 2017. The assessment included serviced and un-serviced communities and private community schemes. Communities without a Wastewater Scheme (i.e. where wastewater is treated and disposed on site) at that time included Rukumoana, Mangateparu, Walton, Manawaru, Tahuna, Waharoa, Waitoa, Hinuera, Te Poi and Tatuani. The need for a scheme in Waitoa has been re-assessed in conjunction with the Regional Council and the conclusion reached that there is not a major issue with the existing septic tanks except for a limited number of sites, and that a communal scheme is not justified.

The recommended actions and progress made relating to the risks and issues for all communities identified in the 2005 assessment and are detailed below:

Recommended action	Progress 2017
Council Wastewater schemes	
Upgrade effluent treatment – Morrinsville	Complete early 2012
Upgrade effluent treatment – Matamata	Completed, operational issues to be resolved
Upgrade effluent treatment – Te Aroha	Completed but now seeking new consent which may require further upgrading
Upgrade Effluent Treatment Waihou	Complete mid 2012
Undertake stormwater infiltration reduction	In place (on-going)
Monitor trade waste discharges	In place (on-going)

Communities without a Wastewater scheme	
Possible reticulation – Tahuna	Completed
Possible reticulation – Waharoa	Completed
Possible reticulation – Rukumoana	Completed
Review disposal of septage in the district	Provision made in the Morrinsville WWTP upgrade
Establish a septic tank inspection system	In place (on-going)
Promote good septic tank management	In place (on-going)
Complete a database of 'private community schemes'	Refer Health Officers

Section 2: Introduction

The risks and issues identified in the 2017 Assessment of Water Services are:

Community	Risks and Issues	Proposals
Morrinsville	<ul style="list-style-type: none"> • Potential risk that Greenlea exceeds their nitrate limit • The dewatering building is currently not utilised and this may be longer term if Pond C is used and bioremediation continues. 	<ul style="list-style-type: none"> • Continue to rely on monitoring of the discharge. • That an assessment is carried out with regard to potential utilisation of the building and dewatering equipment.
Te Aroha	<ul style="list-style-type: none"> • Treatment plant is not complying with the phosphorus limit set in the consent. • Management of sludge at the plant long -term. • Wet weather overflows of sewage into river. 	<ul style="list-style-type: none"> • MPDC has made application to the WRC to change the condition in conjunction with the Matamata plant. • An options report is required to provide options for management of sludge • Carry out investigations with regard to infiltration reduction and allow for rehabilitation.
Waihou	<ul style="list-style-type: none"> • The plant does not currently meet resource consent (RC120703) conditions limits for TSS, coliforms and NH₃. The reason for this is attributed to the over-design of the biological trickling filter and the fact that the clarifier is not clarifying because the pond algae is not settling. 	<ul style="list-style-type: none"> • MPDC has made application to the WRC to irrigate to land all year round (using Mott Macdonald). (An AEE report is being commissioned through Mott Macdonald and land availability is being assessed.)
Matamata (including Waharoa)	<ul style="list-style-type: none"> • Treatment plant is not complying with the ammonia limit set in the consent. 	<ul style="list-style-type: none"> • MPDC has made application to the WRC to change in the limit.
Tahuna	No issues identified	

2.8 Asset Management Policy

2.8.1 Objective of the Asset Management Policy

The objective of the Asset Management Policy for the Infrastructure Activities is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets as required.

The Asset Management Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

Delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social and cultural objectives.

2.8.2 Appropriate Activity Management Levels

2.8.3 Appropriate Activity Management Levels

The International Infrastructure Management Manual (IIMM) is the approved benchmark against which asset management is measured in New Zealand. This manual allows for each Council to state the standard against which it will undertake its asset and activity management.

The standards of the AMP's can be considered on a scale as follows:

- Core - often referred to as basic AMP's.
- Intermediate - transition between Core and Comprehensive/Advanced.
- Comprehensive/Advanced - most thorough AMP, accounting for all lifecycle elements.

In 2010 Waugh Consultants Ltd were employed to establish the appropriate activity management level for the various activities of Council. The methodology used needed to be logical and robust and able to withstand scrutiny.

Their recommendation for utilities was:

Water - Intermediate
Wastewater - Intermediate
Stormwater - Intermediate

Solid Waste - Core

Council subsequently adopted Intermediate as the appropriate level of asset management practice for Council's infrastructure activities.

2.8.4 'Intermediate' Asset Management Practice

Intermediate asset management practice is undertaken at a level between 'Core' and 'Comprehensive' practice. The focus is to build on the basic technical asset management planning of 'Core' practice by introducing improved maintenance management and more

advanced asset management techniques (as appropriate). Further use is made of risk management, asset lifecycle management, and service standard optimisation techniques.

2.9 Renewal/Replacement Policy

The following sets out renewal/replacement policy for utility assets adopted by the MPDC Executive Team on 19 November 2014:

Introduction

- This policy has come about due to the need to clarify Council's replacement policy with regard to pipes and associated fittings.

Objectives

- To ensure that pipes are not replaced when the base life is reached if they still have significant remaining life.
- To ensure planning for future asset replacement takes into account the need to replace services lines and point assets when a new main is being laid.

Background

- It has become the norm to inspect and/or test pipelines which have reached the end of their base life and to only replace them if justified. However this needs to be clarified as part of Council's depreciation/replacement policy.
- Part of this assessment is based on the number of repairs reported through RLP's.
- In most cases the replacement of pipelines is on a new alignment and it is desirable to lay new laterals at the same time.
- Likewise in most cases new point assets such as hydrants, valves and manholes are required before the pipeline can be commissioned.
- The current capitalisation policy is that the replacement of assets costing under \$2000 is not capitalised and thus comes out of maintenance

2.9.1 Renewal Methodology

Asset renewal methodology is predominantly based on asset useful life data recorded in AssetFinda. The condition of above ground assets is regularly monitored and below ground assets are checked whenever they are uncovered for repairs or new connections; and also when they are forecast for replacement. If it is considered they still have remaining life, the new life is entered into the AssetFinda. An AC pipe sampling programme is proposed starting in 2018 to allow more accurate assessment of remaining life. The current practice is to smooth the renewal reticulation programme where it is practical to do so. This is done by allowing for the average renewal requirement over 10 years in the budgets. There are some risks associated with this, but Council does not have a large backlog of work and by placing a criticality on assets it allows us to manage and 'smooth' the work out. This allows us to manage resources on an ongoing basis to ensure programmes are delivered on time and on budget.

2.9.2 Deferred Maintenance/Renewals

Deferred maintenance/renewals for the water activity are an outcome of the smoothing out of the projected renewal costs over a number of years. A large amount of EW pipe has the same lifespan maturity date.

3. Sustainability

3.1 Definitions

Sustainability – means meeting the needs of today while considering the needs of future generations in a social, environmental, cultural and economic context. Sustainability is also about the need to maintain and enhance the quality of the environment.

Sustainable Development – is a balanced, inclusive approach that seeks to meet the needs of today's generation, without reducing the ability of future generations to meet their own needs.

In other words Council needs to understand the effects of our decisions and actions for the future. This is in order to make sure we create a district that is suitable for the current generation, and can provide for our future generations.

3.2 Objectives

One of the purposes of local government is to promote the social, economic, environmental and cultural well-being of communities, in the present and for the future. Council has a clear responsibility to act, operate and develop in a sustainable way.

The objectives of Council's Sustainability Policy are to:

- identify major sustainability issues for Council and developing actions for responding to these
- promote sustainable management and development within Council
- position Council as a leader and supporter of sustainability within the community
- contribute to the social, environmental, economic and cultural well-being of the community

3.3 Sustainability and Lifecycle

Community infrastructure is maintained on the understanding that the assets are provided in perpetuity, the recent LGA 2002 prevents Councils selling these assets without considerable consultation. The activity approaches the management of the activity in a very sustainable approach; the activities are regularly monitored on performance and expectations through Resource Consents, external audits, Level of Service reviews, Customer satisfaction surveys, legislative compliance and adoption of Asset Management Plans.

3.4 Sustainable Development

The LGA 2002 requires local authorities to take a sustainable development approach while conducting its business. Councils existing and future approach to sustainable management and development for wastewater includes the following:

- Efficient use of energy
- Minimal wastage of water
- Efficient operation of facilities
- Optimisation in the initiation of major capital development and renewal projects

3.5 Efficient Use of Energy with Council's Three Water Facilities

The Three Waters use a significant proportion of the Council total energy consumption via their extensive range of facilities. Council has instigated energy management measures through the use of the Energy Efficiency and Conservation Authority (EECA) methodologies and subsidies to assist in reducing total energy consumption.

An Energy Management Committee has been established that meets monthly and monitors the use of energy in all Council installations. An Energy Policy has been adopted with the following objectives:

1. To utilise energy as efficiently as practicable.
2. To buy energy at the most competitive rates.
3. To actively monitor energy use.
4. To actively seek to identify opportunities to reduce energy usage across all councils existing and proposed operations.
5. To adopt new energy efficient technologies where it is cost-effective to do so.
6. To promote a culture of energy awareness and energy conservation throughout the organisation.

The policy will be implemented through the following methods:

1. Appoint key staff to an Energy Management Team (EMT) whose role will be to monitor energy usage, and provide advice on the most efficient and cost-effective use of energy across all council activities.
2. Develop energy management strategies and plans for the entire organisation or for specific assets and functions.
3. Introduce systems to provide management information about energy consumption and costs.
4. Where appropriate set energy performance levels for council buildings and other appropriate assets.
5. Undertake audits of the energy performance of existing council buildings and other appropriate assets, report on inefficient energy use and make recommendations for improvement where identified.
6. Undertake energy performance audits on the plans and specifications of proposed council buildings and other proposals involving energy consumption, including alterations and additions to existing buildings, report on potential inefficient energy use where identified and make recommendations for improvement.
7. Formulate and submit for approval budgetary provision for an investment programme directed at maintenance and/or capital projects for reducing energy consumption.
8. The regular reporting of energy consumption information to senior managers and the Executive Management Team
9. Develop policies and procedures for the most cost-effective purchase of all energy.
10. Training of all staff to raise and maintain energy awareness and energy savings in all activities across the organisation.

3.6 Significant Effects

Significant negative effects of this activity					
	Affected well-beings				How we will mitigate the effects
	S	C	EC	EN	
Poor management of our Wastewater systems could pollute the environment or cause health risks	✓	✓	✓	✓	Maintain current consents for all wastewater treatment plant discharges Complete upgrades of treatment plants to ensure compliance with resource consents
Discharge of poorly treated bio solids to land could pollute the environment or cause health risks	✓	✓		✓	Implement Bio solids management with wastewater treatment plant upgrades
Overflows that discharge to land or water could pollute the environment or cause health risks	✓	✓		✓	Pump station overflows are generally reported and resolved within a short space of time Renewals strategy will incorporate investigation of flows, standby generators and storage requirements

Significant positive effects of this activity					
	Affected Well-beings				How we will maintain the effects
	S	C	EC	EN	
Community wastewater is collected and treated to a high standard reducing environmental and health risks	✓	✓		✓	Maintain an efficient and cost effective wastewater system and ensure compliance with resource consents

S= Social C= Cultural EC= Economic EN= Environmental

4. Levels of Service

4.1 Background

The levels of service for the wastewater activity are defined in this section along with the performance measures adopted by Council by which the service levels will be assessed.

Levels of services are driven by legislative requirements, community consultation and the Council’s leadership through plans and strategies.

4.2 LTP Community Outcomes

The LTP sets out five proposed Community Outcomes, all have been formulated to promote social, economic, environmental and cultural wellbeing of the District. All six Community Outcomes indirectly contribute to the Council achieving current and future levels of service for the wastewater activity.

The Community Outcomes that the wastewater activity will directly contribute to are set out in detail below.

Matamata-Piako – The Place of Choice

Lifestyle. Opportunities. Home.

Enabling...

Connected Infrastructure	Economic Opportunities	Healthy Communities	Environmental Sustainability	Vibrant Cultural Values
Infrastructure and services are fit for purpose and affordable, now and in the future.	We are a business friendly Council.	Our community is safe, healthy and connected.	We support environmentally friendly practices and technologies.	We promote and protect our arts, culture, historic, and natural resources.
Quality infrastructure is provided to support community wellbeing.	Our future planning enables sustainable growth in our district	We encourage the use and development of our facilities.	Development occurs in a sustainable and respectful manner considering kawa/protocol and tikanga/customs.	We value and encourage strong relationships with iwi and other cultures, recognising waahi tapu and taonga/significant and treasured sites and whakapapa/ancestral heritage.

Section 4: Levels of Service

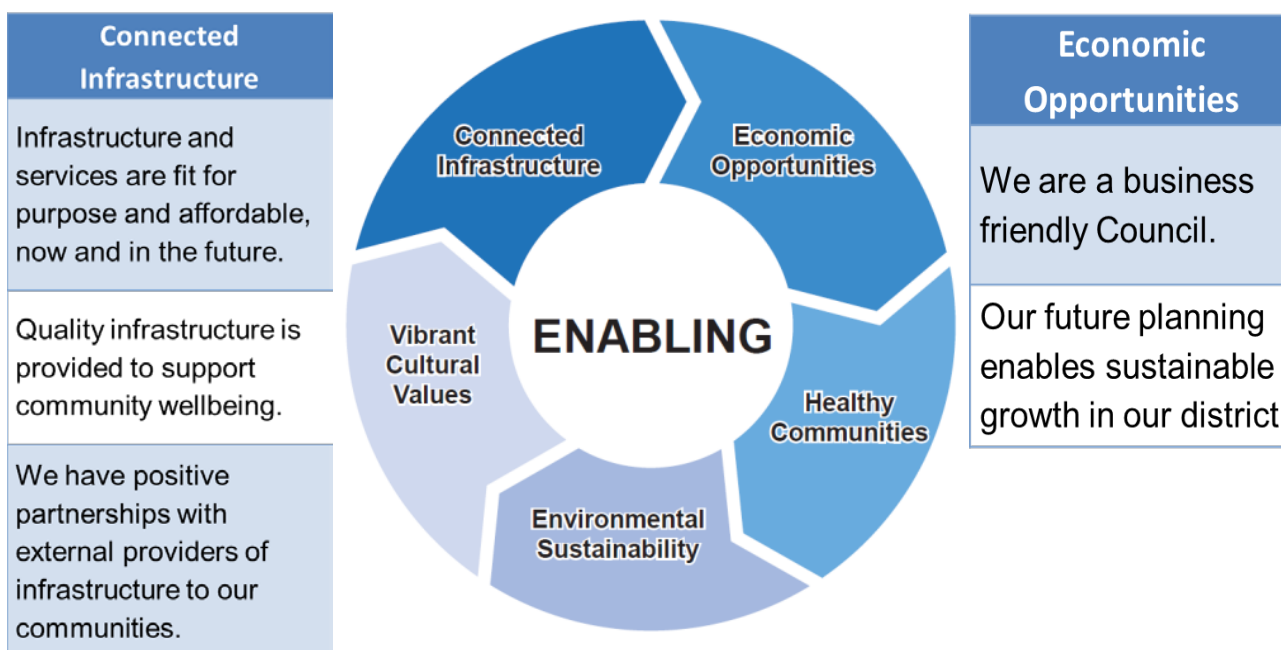
We have positive partnerships with external providers of infrastructure to our communities.

We provide leadership and advocacy is provided to enable our communities to grow.

We encourage community engagement and provide sound and visionary decision making.

We engage with our regional and national partners to ensure positive environmental outcomes for our community.

Tangata Whenua with Manawhenua status (those with authority over the land under Maaori lore) have meaningful involvement in decision making.



Strategic priorities relating to the Wastewater Activity are:

:

- Meet compliance standards
 - Connected Infrastructure. Quality infrastructure is provided to support community well-being. Fit for purpose infrastructure now and in the future.
- Economic Growth and productivity
 - Economic Opportunities. Business friendly and sustainable growth.
 - Connected infrastructure. Fit for purpose infrastructure now and in the future.

4.3 Legislative Requirements

The legislative requirements form the minimum level of service as Council is required to comply. It does not necessarily mean that all level of service is covered within the legislation. The Water Activity is influenced by the following legislative requirements.

Section 4: Levels of Service

Local Government Act 2002 (and remaining sections of the 1974 Act): defines the purpose of local authorities as enabling local decision-making by and on behalf of the community, and allows local authorities the power of general competence.

This Act specifically requires Councils to continue to provide water services if they do so already.

It also includes a requirement to install fire hydrants on all water mains at intervals prescribed by the Fire Authority.

Local Government Act 2002 Section 17A:

A new section 17A has been inserted into the Act. The new section introduces new requirements that councils:

- review the cost effectiveness of current arrangements for providing local infrastructure, services and regulatory functions at regular intervals. Reviews must be undertaken when service levels are significantly changed, before current contracts expire, and in any case not more than 6 years after the last review; and
- ensure that there is a binding contract or agreement where delivery of infrastructure, services or regulatory functions is to be undertaken by a different entity than the entity responsible for the governance of those things. The contract/agreement must cover key matters such as service levels, performance assessment and reporting, risk management and accountability.

A Section 17A Service Delivery Review was carried out in August 2017 and the report can be accessed in RM # 1760495.

Health Act 1956: places an obligation on Council to improve, promote and protect public health within the District. The provision of water treatment and supply helps to promote and improve public health.

The Health (Drinking Water) Amendment Act 2007 amended the Health Act in respect of drinking water supplies and placed a greater duty of care on Councils to ensure the provision of wholesome water.

Resource Management Act 1991: governs all water takes and discharges. Water is extracted from aquifers, streams, lakes and rivers for the purpose of irrigation and water supply. Discharges to waterways and land occur as a by-product of water treatment. Resource consents obtained for water take and discharge activities require parameters such as volume and quality to be monitored as well as taking steps to mitigate any adverse affects that may occur through the activity.

Health and Safety in Employment Act 2015: Council must ensure the safety of the public and all workers (including contractors) when carrying out works.

Matamata-Piako District Council Water Bylaw 2008: Defines standards and obligations for the use, consumption, protection, access, conditions of supply and infringements.

4.4 Why is Council Involved in this Activity

Section 4: Levels of Service

Council is involved in the activity as it has a statutory obligation under the Local Government Act 2002 to provide wastewater services. Under the Health Act, 1956 an obligation is also placed onto Council to improve, promote and protect public health within the District.

4.5 Strategic Assets

Section 90(2) of the Local Government Act 2002 requires Council to identify 'strategic assets' in its 'Significance Policy'.

Strategic assets are defined as "an asset or group of assets that a local authority needs to retain if they are to maintain the local authority's capacity to achieve or promote any outcome that they determine to be important to the current or future wellbeing of the Community" (see Section 5, Local Government Act 2002 for complete definition).

Council adopted a new Significance and Engagement Policy on 12 November 2014. The Water assets identified as 'strategic assets' in the Significance and Engagement Policy 2014 are outlined in the table below.

Asset	Group	Rationale
Water Reticulation network and treatment plants	Infrastructure assets	The infrastructure assets listed refer to the networks as a whole.
Wastewater Reticulation network and treatment plants		
Stormwater Reticulation network		

4.6 Strategic and Critical Assets

The terms 'strategic assets' and 'critical assets' are easily confused.

As explained above, 'strategic assets' are assets that a local authority has decided it needs to keep to maintain the capacity to achieve or promote any outcome that the local authority has determined to be important to the current or future wellbeing of the Community.

Critical assets however, are assets that have a high consequence of failure (but not necessarily a high probability of failure). To put it simply, the criticality has to do with "how bad it is if the asset breaks or fails".

Critical assets will be discussed further in the Lifecycle and Risk Management Sections of the AMP (See Section 6 and 7).

4.7 Management Structure and Responsibilities

In general terms, the Assets Strategy and Policy (AS&P) Department which falls under the Business Services Group, is responsible for policy, strategy, and asset management planning for the Wastewater activity.

The Service Delivery Group is responsible for development, renewals, and operational maintenance. This is achieved through its business units, Kaimai Consultants (KC) and Kaimai Valley Services (KVS).

KC provides project management and engineering services. KVS provides operational and maintenance services.

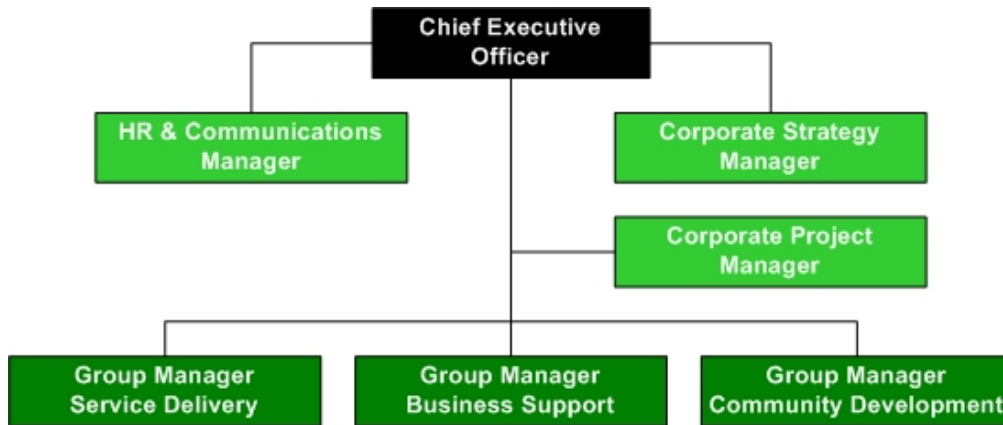
The management responsibility for the individual activities within the activity is shown below below.

Asset Area	Business Services Group	Service Delivery Group		
	Assets Strategy & Policy	Kaimai Consultants	Kaimai Valley Services	Community Facilities Operations
Water, Wastewater and Stormwater	Policy & Strategy AMPs Asset Database	Project management (capital & renewal) Engineering services	Operations & Maintenance	Operations & Maintenance

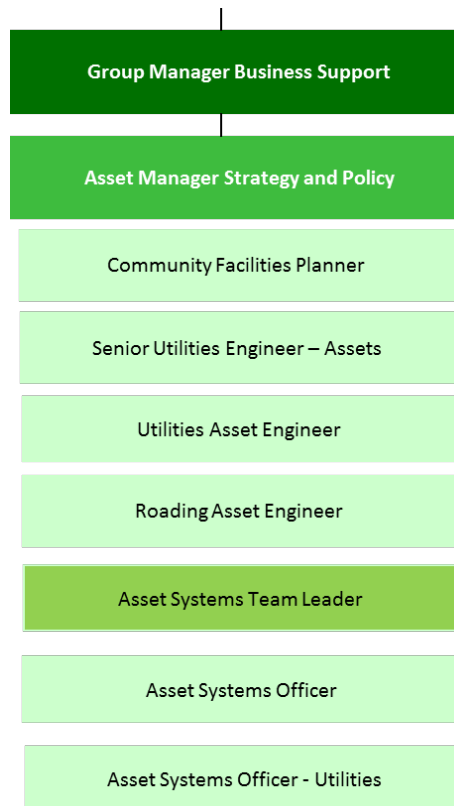
4.8 Asset Management Structure

MPDC has recently restructured its Asset Management functions to ensure that there is a clear separation between Strategy/Policy and operational functions and service delivery. The following 2 figures shows the new structure and separation

Departmental Structure



Asset Management Structure



4.9 Levels of Service and Performance Measures

4.9.1 Background

The levels of service for Wastewater Supply are:

- We will have an effective wastewater system that provides an appropriate level of protection.
- We will protect the environment by ensuring our wastewater is properly treated before being discharged to our environment.
- We will have reliable wastewater systems and will respond to requests for service from our residents in a timely manner.

There are no changes planned to the levels of service.

In 2013 the Secretary for Local Government published the *Non-Financial Performance Measures Rules 2013* pursuant to and in accordance with section 261B of the Local Government Act 2002 and these contains mandatory reporting measures to be adopted by all Councils.

These reporting measures have been applied starting the 2015 – 16 year. The requirement is for Council to each year monitor its performance both against previous years and against the national results.

Processes for collecting and reporting on these measures are incorporated in the QA system.

4.9.2 Performance Criteria

The following table shows the criteria that are used to assess Council's performance against the compulsory measures and the results for 2015/16 (approx. number of full wastewater rates paid is 8260):

Section 4: Levels of Service

Community Outcome – Connected Infrastructure	Level of Service	Performance Measures	Historical Achievement Levels (new measures 2015- 16)	Target			
	2015-25 LTP			2018/19	2019-20	2020-2021	2021-22
Infrastructure and services are fit for purpose and affordable, now and in the future.	We will have an effective wastewater system that provides an appropriate level of protection.	The number of dry weather sewage overflows from our wastewater system. (Expressed per 1,000 connections per year to our wastewater system).*	7 complaints total	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)	1 per 1,000 connections (8 complaints total)
Quality infrastructure is provided to support community wellbeing.							
	We will protect the environment by ensuring our wastewater is properly treated before being discharged to our environment.	Compliance with our resource consents for discharge from our wastewater systems (measured by the number of abatement notices; infringement notices; enforcement orders, and convictions received in relation to those resource consents).*	Zero	Zero	Zero	Zero	Zero
		Where we attend to sewage overflows resulting from a blockage or other fault in our wastewater system we will measure the following median response times:					
We have positive partnerships with external providers of infrastructure to our communities	We will have reliable wastewater systems and will respond to requests for service from our residents in a timely manner.	Attendance time: from the time that we receive notification to the time that service personnel reach the site.*	Median 40min	Median 4 hours or less	Median 4 hours or less	Median 4 hours or less	Median 4 hours or less
		Resolution time: from the time that we receive notification to the time that service personnel confirm resolution of the blockage or other fault.*	Median: 2 hours 29min	Median 24 hours or less	Median 24 hours or less	Median 24 hours or less	Median 24 hours or less

Section 4: Levels of Service

		The total number of complaints received by Council about any of the following:					
		-Sewage odour	3 complaints total	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints
		-Wastewater system faults	3 complaints total	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints
		--Wastewater system blockages	17 complaints	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints
		-Council's response to issues with our wastewater system (expressed as 1,000 connections per year)*	1 complaint total	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints	Change to overall number of complaints

4.9.3 Performance Monitoring

Apart from the compulsory performance monitoring, key KPI's are regularly monitored to ensure compliance resource consents.

The current targets have been met for all the performance measures. The measure that relates to dry weather sewage overflows is the only measure where the target was close to being reached. To address this upgrading of the SCADA system is proposed with this including provision for more comprehensive remote control of wastewater pump stations. This will allow real time control and feedback of key parameters.

In addition to reporting on discharge volumes effluent quality the parameters reported on include:

- Total Kjeldahl Nitrogen, Nitrate, Nitrite, ammoniacal nitrogen
- DRP, TP
- Temperature
- pH
- BOD, TSS
- E.coli
-

4.10 Customer Research and Expectations

4.10.1 Consultation

The Matamata Piako District Council has undertaken a range of consultation processes over the past few years specifically targeted at gathering information on preferred Levels of Service or the extent of infrastructure that Council will be required to install.

4.10.2 Customer Surveys

Council undertakes an annual customer survey which identifies and measures the perceptions that residents of the Matamata-Piako District (residents) have towards Council and the services Council provides.

The 2016/17 Survey showed:

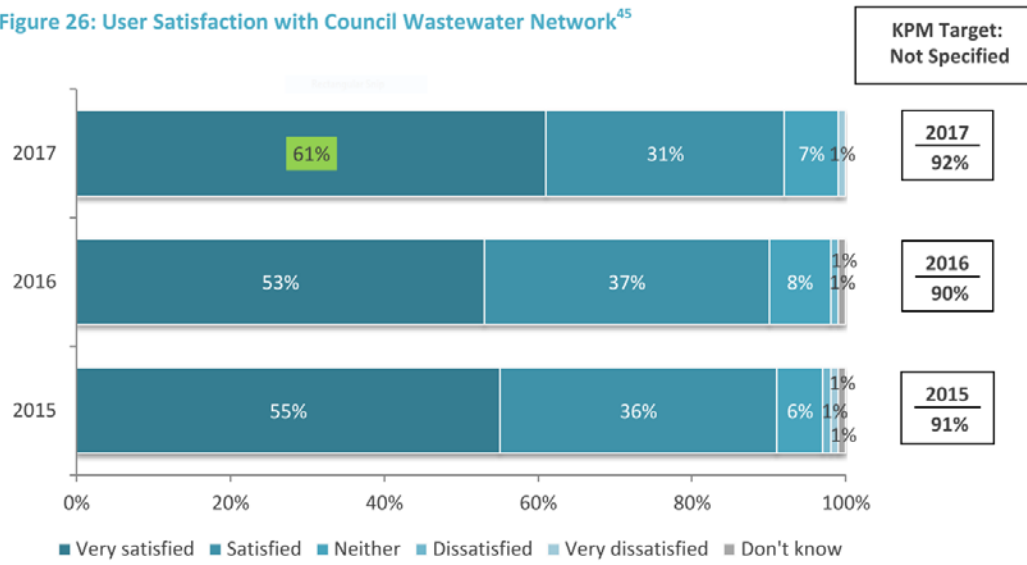
83% of residents surveyed are connected to wastewater system.

92% of residents connected to the wastewater reticulation are 'very satisfied' (61%) or 'satisfied' (31%) with the Council wastewater services in urban areas. This is an increase of two percentile points on previous measures.

Encouragingly the increased combined satisfaction is partly driven by a decline in 'very dissatisfied' customers (down 1 percentile points to 2%).

Section 4: Levels of Service

Figure 26: User Satisfaction with Council Wastewater Network⁴⁵



User Satisfaction with Council's Wastewater Network: By Ward, 2017

5. Growth and Demand

5.1 Growth Forecast

5.1.1 Background

Rationale Limited was engaged in 2017 to review and develop growth projections for Matamata-Piako District Council.

The main purpose of the review was to provide population, dwelling and rating unit projections out to 2045, for the district and its three ward areas and 13 settlement areas. Further detail is provided on the population structure (age demographics and average household size), dwelling types (occupied, unoccupied and under construction) and for each of Council's six rating unit categories.

The underlying philosophy of Rationale's Model is that people drive the growth in dwellings and rating units. An increase in people living, working or holidaying in the district will also result in an increase in both dwellings and rating units.

However, resident population growth is only one of three factors that can drive an increase in dwellings. The other two factors are declining household size, and holiday home demand (the latter being of lesser relevance in comparison to districts such as Thames-Coromandel, but still of relevance as indicated in recent growth rate trends).

These factors, along with the number of visitors and the employment opportunities they create, all have a flow on effect to the rating unit growth.

The three scenarios included in this review are developed from three baseline resident population growth rates considered appropriate for MPDC – low growth (declining population), medium growth (steady increase in population), high growth (strong population growth).

The medium growth scenario is considered the most appropriate for MPDC's long term planning.

The projected dwelling and rating unit growth rate is higher than for population due to flow-on effects of changes in population structure. The majority of the growth is forecast to occur in the first ten to fifteen years before the rate of growth slows down towards 2048.

Regarding the population structure, the district has a similar age profile to the rest of New Zealand. However in 2013 the proportion of people aged 65+ made up around 18% of the district's total population, which is higher than the nationwide average of 14%.

This aging population trend is projected to continue, with the proportion of people in the district aged 65+ increasing to over 30% by 2048. The number of people aged between 15 and 64 years of age is projected to decrease. This may have a flow-on effect to the make-up of the work force in the district.

Factors such as the aging population contribute to a decline in the average household size, decreasing from around 2.5 residents per household in 2013 to around 2.3 in 2048.

Section 5: Growth and Demand

In terms of geographic spread of growth, all three wards are projected to experience population and dwelling growth. The total population and dwelling increase is highest in the Matamata Ward; followed by the Morrinsville Ward and then the Te Aroha Ward.

Nearly 80% of the population growth and 70% of the dwelling growth is forecast to occur in the three urban towns (Matamata, Morrinsville and Te Aroha). The population growth in the rural settlements is noticeably lower than the main towns, and in some areas a slight decline is forecast. However dwellings are projected to increase in all the outlining rural settlement areas.

Population and dwelling growth flows through to rating units. The district rating units are predominately Residential and Lifestyle, with nearly three quarters of total rating units falling under these two categories. Therefore any rating unit growth is heavily dependent on dwelling growth.

However the two business related rating unit categories, Industrial and Commercial, are both projected to increase at a greater growth rate than the population and dwellings. As with the population and dwelling growth, around two-thirds of this business related rating unit growth is located in the three urban towns.

The recommended scenario has been compared to previous scenario adopted for MPDC 2015-25 Long Term Plan. The key differences include:

- The growth in population, dwellings and rating units is similar to the previous forecast, albeit marginally lower;
- At the ward level, the projected growth in both the Matamata Ward and the Te Aroha Ward is slightly lower than the previous forecast. The growth projected in the Morrinsville Ward is slightly higher than the previous forecast;
- Compared to the previous projections, a larger portion of the growth is now projected to occur outside of the three main towns, in the smaller towns and in the rural areas.

5.1.2 Population and Dwelling Profile for towns with wastewater facilities (Estimated 2017)

Town	Population								
	2013	2018	2028	2038	2048	2013	2028	2038	2048
Matamata	7,370	7,970	8,390	8,630	8,790	3,129	3,704	3,899	4,126
Waharoa	490	520	520	510	470	153	171	173	173
Raungaiti	110	106	85	59	31	36	36	36	36
Morrinsville	7,310	7,790	8,280	8,590	8,750	2,932	3,445	3,659	3,874
Rukumoana	69	68	59	47	34	23	23	23	23
Te Aroha	4,060	4,240	4,380	4,380	4,340	1,822	2,021	2,087	2,132
Tahuna	176	187	197	199	196	72	83	84	84
Waihou	289	310	325	328	322	136	146	153	153
Total*	19,874	21,191	22,241	22,743	22,933	8,303	9,629	10,114	10,601

Section 5: Growth and Demand

*Total excludes township where details are not available

Note: The population and dwelling projections for Tahuna, Hinuera & Te Poi are based on projections of the meshblocks in the area (as defined by MPDC staff). The meshblocks may not align exactly to the serviced areas.

5.1.3 Effect of Under-estimating Growth

It is considered that the relatively low rate of population growth predicted will not have a significant effect on demand for services. The greater effect on demand will come from industrial growth.

5.1.4 District Plan Change 47

District Plan Change 47 has made provision for the residential, commercial and industrial growth in our urban communities. The Town Strategy was the initial strategic planning of our towns for 30 years, and then Plan Change 47 is the action to incorporate this into the District Plan and follow to the LTP and AMPs. Plan Change 47 accounts for population growth as predicted in the 'Growth Predictions' (refer section 5.1.2 above).

As part of the assessment of zoning and structure plan options for Plan Change 47, Council has examined the capital works that are required to service existing and proposed areas for development.

The structure plan areas identified as part of the assessment are;

- Matamata: Eldonwood South and Tower Road.
- Morrinsville: Horrell Road;

The original Precinct F growth area has been downsized from 750 lots to 240 lots due to servicing restrictions. This reduced area is identified as Eldonwood South.

Also part of Plan Change 47 are changes to residential infill areas which propose to identify the residential infill areas around the town centres; changes to equine areas, shop frontage areas, principal road landscape areas and changing of identified properties from rural to industrial zoning. Changes are proposed to the New Rural Zone and Future Residential Policy Areas, changes to zoning of some rural-residential properties and changing the zoning of some properties from rural to industrial.

The table below shows the estimated capital costs associated with each structure plan area.

Off Site Utility	Eldonwood South(\$'000)	Tower Road (\$'000)	Horrell Road (\$'000)
Waste-water	1,870	2,123	n/a
Water	660	425	n/a
SW	100	400	n/a
Roading	1,440	330	1,300
Total	4,070	3,278	1,300

Data source: RM 1864486

<http://www.mpdc.govt.nz/plan-change-47-zoning-and-rule-provisions>

Section 5: Growth and Demand

Capital works schedules for the each structure plan area are:

Eldonwood south (\$'000)

Wastewater	250mm pressure sewer from existing WWPS to proposed Tower Rd pump station New WWPS at Tower Rd Upgrade existing WWPS pumps and power supply WWTP capacity upgrade works	2022/23	1,200 454 40 176 Total \$1,870
Water	Firth St upgrade from Station Rd to Haig Rd and upgrades of water mains in Beatty and Haig streets Bore, Treatment Plant and Storage	2021/22	360 300 Total \$660
SW	Small ponds/wetlands for rural res road only	TBC – dependent on development programme	100 Total \$100
Roading	Station Road East Upgrade (pavement overlay and parking bays) Hampton Terrace upgrade (parking bays and pavement overlay) Smith St pavement overlay Intersection Upgrades – Firth/Station and Hinuera/Firth Road widening – Link collector road	TBC – dependent on development programme	716 129 177 78 340 Total \$1,440

Tower Road (\$'000)

Wastewater	Tower Road Pump stations (3 pumps) 300mm Rising falling main WWPS to WWTP WWTP capacity upgrade	2022/23	880 750 493 Total \$2,123
Water	Upgrade 200mm water main through Bridie Ave to connect to internal reticulation in Tower Rd block. Join internal reticulation to water main in Magnolia Street. (Shift PRV is not required until the balance of the Tower block is developed) (internal reticulation 200mm between Bridie Ave and Magnolia) Bore, Treatment Plant and Storage	2021/22	175 250 Total \$425
SW	Extension to Tawari retention pond (land purchase and excavation)	TBC	400 Total \$400
Roading	Parking bays (on Magnolia Drive, Findlater Street west and Ngaio Street) Bridie Ave pedestrian facility Intersection signs and markings	TBC	300 25 5 Total \$330

Horrell Road (\$'000)

Section 5: Growth and Demand

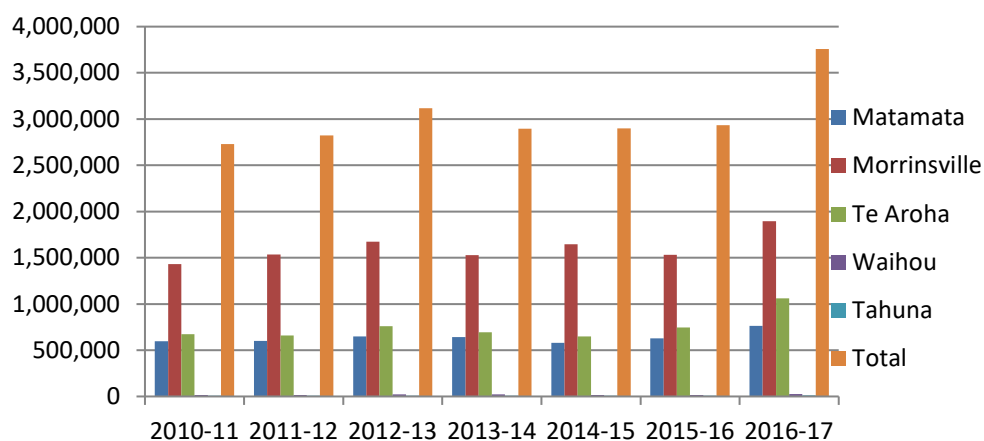
Wastewater	Nil – on-site wastewater management		
Water	Nil – rural residential area not supplied with public reticulation		
SW	Nil – on-site SW management		
Roading	Upgrade to Horrell Road intersection and associated works at Murray Road and pedestrian/cycle connections.	TBC	1,300
			Total \$1,300

5.2 Wastewater Trends

5.2.1 Wastewater Trends in Matamata Piako District

The following chart and graph shows the wastewater discharges for the past 7 years in cubic metres:

W/Water	Matamata	Morrinsville	Te Aroha	Waihou	Tahuna	Total
2010-11	597,923	1,432,315	673,331	15,955	9,176	2,728,700
2011-12	599,732	1,535,641	659,995	16,280	10,065	2,821,713
2012-13	650,577	1,675,210	760,444	22,820	10,067	3,119,118
2013-14	640,507	1,529,123	692,832	24,176	10,260	2,896,898
2014-15	581,442	1,646,246	648,095	16,195	8,575	2,900,553
2015-16	629,229	1,533,342	745,781	16,445	8,824	2,933,621
2016-17	762,455	1,896,663	1,061,654	26,234	10,948	3,757,954
Average	637,409	1,606,934	748,876	19,729	9,702	3,022,651



5.2.2 Climate Change

While there is considerable debate about climate change, this is not whether climate change is occurring but rather around the prediction of the effect in any particular region.

The Ministry of the Environment prediction for this region is that there will be an increase of effective mean temperature of 2.1°C by 2090 and that for every 1°C in temperature there will be a 8% increase in annual mean rainfall. This equates to an increase in rainfall of 16.8%

It also predicts that extreme rainfall events are likely to get heavier and more frequent but there are likely to be longer dry spells and hotter weather.

In respect of wastewater, there is not expected to be a significant effect arising from climate change.

The Waikato Regional Council has endorsed the LGNZ 2050 Local Government position statement on climate change and Local Government Leaders climate change declaration. The WRC requirements in relation to climate change align with those of MPDC.

5.3 Demand Management

5.3.1 Strategies

Demand Management strategies are used as alternatives to the creation of new assets. They are aimed at modifying customer demands to achieve:

- Social, environmental and legislative objectives for Matamata-Piako District
- The delivery of cost-effective services
- Defer the need for new assets and optimise the performance/utilisation of the existing assets

MPDC is considering a range of strategies to manage the demand for wastewater and therefore the requirement for additional infrastructure. The table below details the strategies that have or will be instigated:

Strategy	Objective/ Description
Operations	Reduce direct stormwater entry into the wastewater reticulation system by detection and control The use of smoke testing and on-going property inspections programmes will continue to assist in the reduction of direct stormwater entry into the wastewater system thereby reducing overflows in peak wet weather periods and reducing the loadings (and on-going operations costs) at the treatment plants
Operations	The instigation of an integrated renewals strategy that considers the effects and consequences of: <ul style="list-style-type: none"> – Reduce ingress of ground water into the reticulated system via a proactive renewals programme that targets the areas most affected by stormwater flooding and infiltration – Use of modelling to ascertain effects and constrains within the systems – Increasing storage capacity at priority pump stations
Regulation	The use of the District Plan to control the areas in which development can occur and the associated density that is permitted
Wastewater By-	To protect the Councils wastewater reticulation and treatment processes, promotion of waste

Section 5: Growth and Demand

Strategy	Objective/ Description
Law 2008	minimisation, prevention of infiltration and installation
Trade Waste Bylaw	The promotion of on-site pre-treatment for the major industrial contributors Protection of Councils wastewater reticulation and treatment processes, the environment at the point of discharge and ensuring the system's capacity is not compromised by high volume or strength point discharges
Education	Implementation of wastewater conservation programmes aimed at increasing community awareness of the benefits of reducing direct stormwater disposal into the wastewater system. These programmes will include information on the effects of directing stormwater flows to the wastewater system.

The future demand drivers for reticulated Wastewater Schemes in Matamata-Piako District will be driven by:

- Population increases
- Growth for industrial contributors
- Changes in wastewater usage patterns by industrial contributors
- Infiltration Strategies
- Resource consent renewals

The table below indicates how the above factors are expected to be reflected in changes in domestic and non-domestic Wastewater usage.

Wastewater Demand Drivers	Residential	Commercial	Industrial
Population increases	No significant impact is anticipated at the wastewater treatment plants for Matamata, Morrinsville, Tahuna and Waihou. No significant impact is anticipated at the Te Aroha wastewater treatment plant but will be dependent on the reduction in wet weather flows and the ability for the wastewater treatment plant capacity to be increased via operational options.		
Growth for industrial contributors	NA	Wastewater discharges monitored	
Changes in Wastewater usage patterns by industrial contributors	N/A	Monitored by Tradewaste agreements	
Infiltration Strategies	Reduction of direct stormwater intrusion and infiltration via the properties laterals and gully traps is essential to ensure long term sustainability of the wastewater system	Monitoring of trade waste discharges to ensure the reduction of the stormwater component	
Resource Consent Renewals	The renewal of resource consents will require wastewater conservation measures to be implemented and will place additional drivers to match demand and customer expectations. A renewal strategy that incorporates significant infiltration reduction will be developed and promoted to assist future wastewater disposal consent renewals		

5.3.2 Capital Works Associated with Development

Business cases are required for all projects as part of the corporate project system. Cost/benefit analysis must be undertaken for all significant projects. Net present value is another tool used to assess the different options.

5.4 Network Modelling

Reliable calibrated hydraulic models provide a robust decision-making support framework in which numerous future scenarios of demand, population growth, climate change and land use variables can be readily evaluated to assist in the determination of optimal network improvements required to meet future or changing needs.

New subdivisions can be modelled and effect on the network determined. Lack of capacity in the network can be identified and upgrade requirements determined.

Network modelling has been carried out in the three main towns by an experienced consultant on our behalf and is updated as required due to changes resulting from subdivision, improvement works and the like.

The network modelling provides staff with:

- Assistance in developing a targeted Capital Works programme and will improve confidence in the capital works programmes
- Determination of the capacity of the existing network and identify areas not meeting the existing or future Levels of Service
- An operational and management tool to assist in making the right decisions to improve and maintain service levels and reducing costs
- An aid to Council in long-term planning and everyday operations

6. Lifecycle Management Plan

6.1 Description of Wastewater Activity

This section of the plan covers the description of assets covered under this plan.

6.1.1 Matamata- Piako Overview

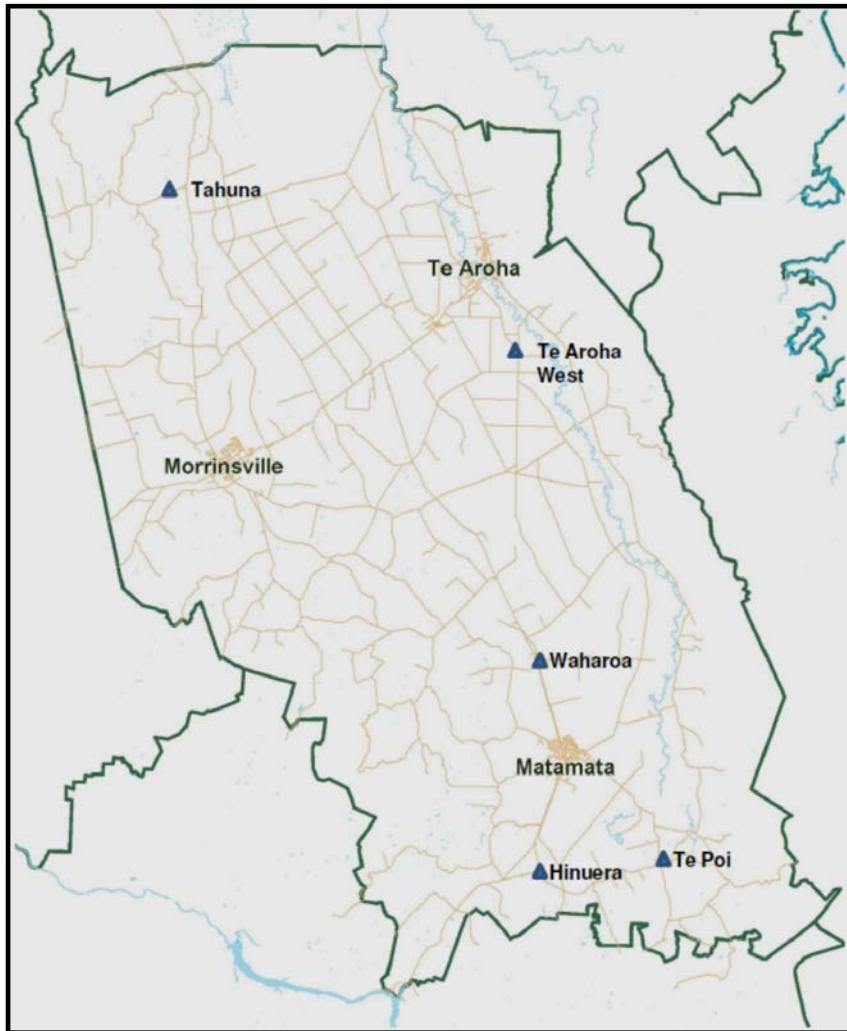
Matamata-Piako District is located in the Waikato region of New Zealand's North Island. The three main urban centres are:

- Matamata
- Morrinsville
- Te Aroha

The total land area of the Matamata-Piako District covers an area of 175,477 hectares.

6.2 Wastewater Activity

We have water systems in the townships in the townships of Matamata (including Waharoa and Raungaiti), Morrinsville (including Rukumoana), Te Aroha, Tahuna, and Waihou. Refer to the map below:



6.2.1 Summary of Assets

This summary of Assets Table was renewed and updated from AssetFinda information in April 2017

	Plant Assets		Point Assets			Line Assets		
	Treatment Plants	Pump Stations	Inspection Chambers	Lampholes	Manholes	Gravity Mains (m)	Rising Mains (m)	Laterals (m)
Matamata	1	9	39	55	1024	64,462	1,515	15,060
Morrinsville	1	8	38	33	1088	65,192	9,302	10,352
Te Aroha	1	13	61	2	584	46,699	3,529	3,798
Waharoa	0	4	2	0	92	5,822	8,191	1,741
Waihou	1	2	1	0	46	3,485	456	50
Tahuna	1	0	2	0	41	2,518	0	500
Total	5	36	143	90	2875	188,178	22,994	31,500

6.2.2 Data Confidence and Reliability

The following table provides the confidence framework (NAMS IIMM) used to determine the confidence in the asset data used in this AMP.

Asset Data – Confidence Grades

Confidence Grade	General Meaning
Highly Reliable	Data based on records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment.
Reliable	Data based on records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
Uncertain	Data based on records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade highly reliable or reliable data is available.
Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

The table below reflects the confidence in the asset data for the Wastewater assets.

Overall Confidence Data

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain	Source
Treatment Plants		✓			Asset Finda and AM
Pump stations	✓				~
Inspection Chambers		✓			~
Lamp holes		✓			~
Manholes		✓			~
Gravity Mains (m)		✓			~
Rising Mains (m)		✓			~
Laterals (m)		✓			~

Overall Data Completeness

Asset Type	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Treatment Plants										✓
Pump stations										✓
Inspection Chambers							✓			
Lamp holes							✓			
Manholes								✓		
Gravity Mains (m)								✓		
Rising Mains (m)								✓		
Laterals (m)							✓			

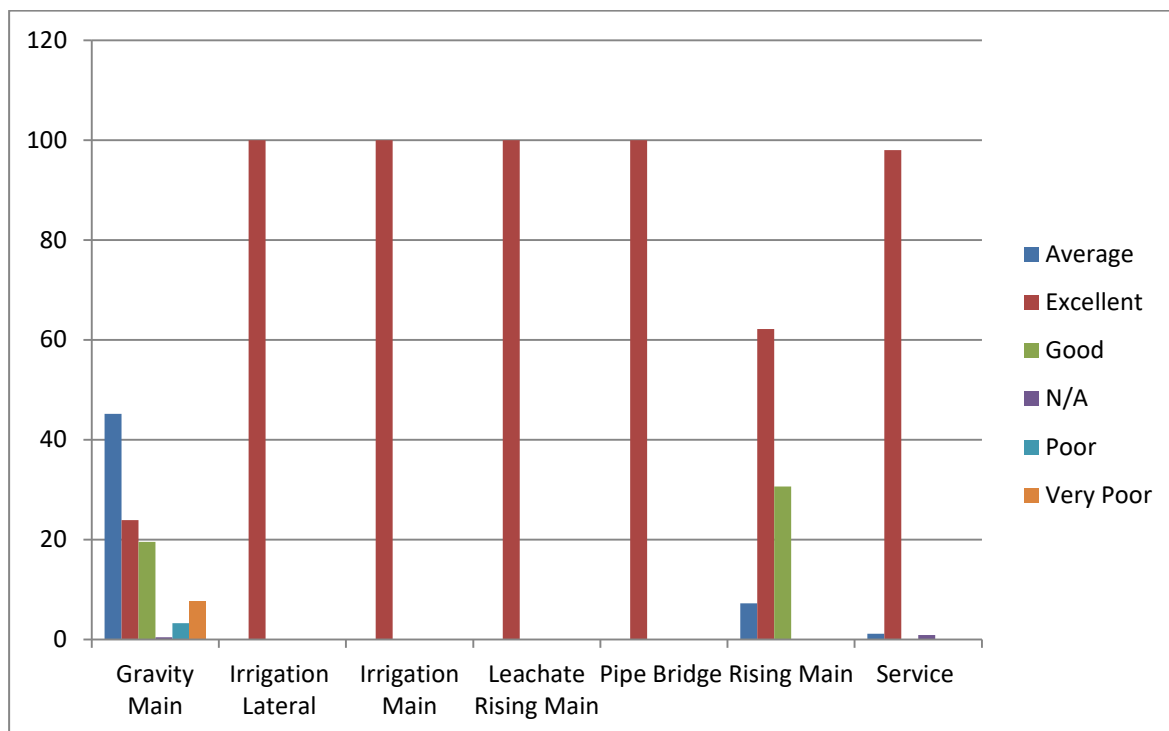
Condition & Performance for Critical and Non Critical Assets

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain
Treatment Plants		✓		
Pump stations		✓		
Inspection Chambers			✓	
Lamp holes			✓	
Manholes			✓	
Gravity Mains (m)			✓	
Rising Mains (m)			✓	
Laterals (m)			✓	

It is considered the asset data used in this AMP is reliable and further information is as follows:h

- Asset Information:** The asset information contained in AssetFinda and AM is based on both existing plans and checking in the field and is updated as errors are noticed. It is believed the register is very reliable and the information is as accurate as it is possible to get.
- Condition:** The condition of above ground assets is regularly monitored and below ground assets are checked whenever they are uncovered for repairs or new connections; and also when they are forecast for replacement. If it is considered they still have remaining life, the new life is entered into the AssetFinda.

Wastewater Pipe Condition as percentage of pipe type length



- **Performance:** The performance of assets is regularly monitored via Council's telemetry system, plant operating systems and by reports from its Complaints Register. Data relating to individual asset performance are not currently recorded on AssetFinda.

Council is in the process of moving most monitoring records to Infrastructure Data which is a cloud based system that has been specifically designed for water and wastewater treatment plants.

- **Financial Forecasts:** The financial forecasts are based on the life of each asset as recorded in AssetFinda and AM.

The life of all reticulation assets has been reviewed towards the end of last financial year and the proposals peer reviewed by Neville West of Waugh Infrastructure Management Ltd. AssetFinda was updated on 1 July 2014 with the new data.

The life of the buildings in AM was also reviewed towards the end of the 2016/17 financial year as part of the valuation detailed below. AM was updated in December 2017 with the new data.

- **Valuation:** The valuations of all reticulation assets (except buildings) were revised towards the end of the 2015/16 year and audited by Philip Jones of P J & Associates who is an approved auditor. AssetFinda was updated in April 2017 with the new data.

The building valuations were revised towards the end of last financial year. The valuation of specialised property assets was undertaken by SPM Assets Ltd and the market value of non-specialised property assets was undertaken by Curnow Tizard Ltd. AM was updated in December 2017 with the new data.

6.3 Matamata Wastewater Scheme

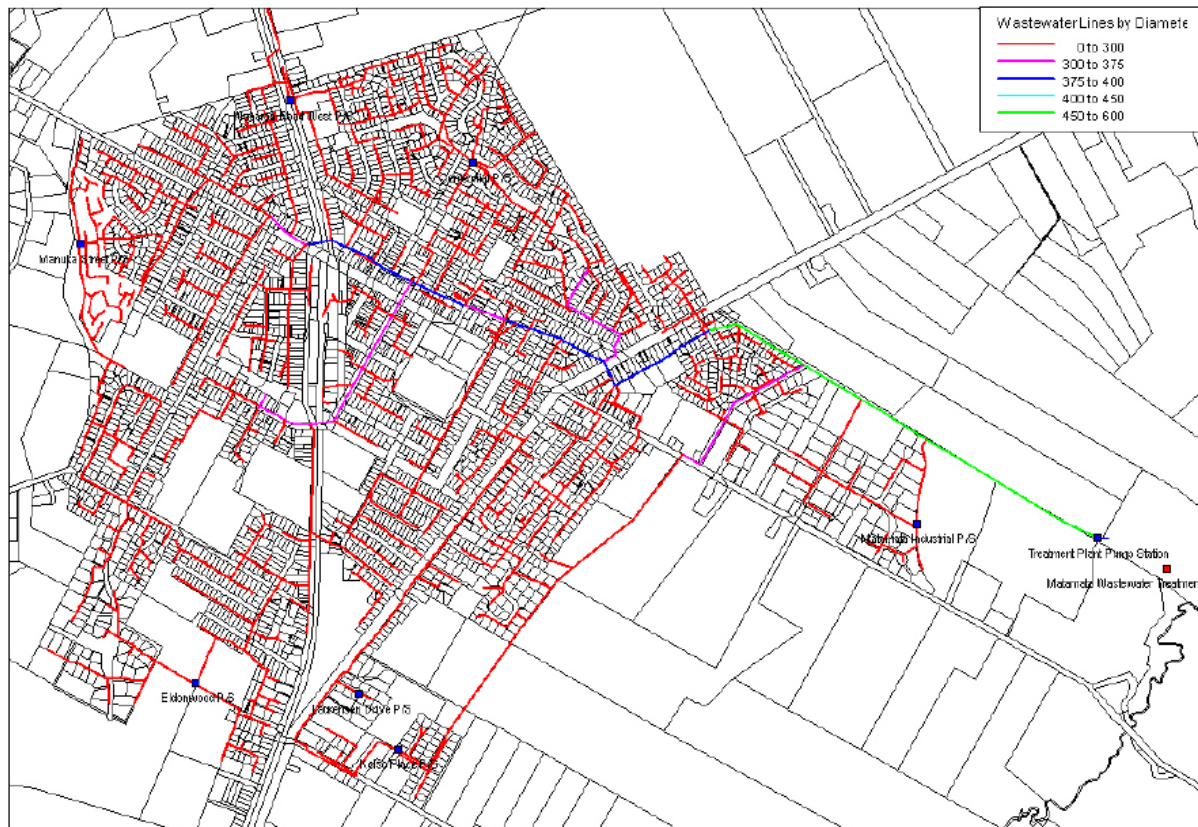
6.3.1 Matamata Scheme Overview

Matamata Wastewater Scheme services the community of Matamata along with **Waharoa and Raungaiti**.

The reticulation consists of a combination of AC, PVC, and Earthenware pipes all installed at different times. There are seven pump stations located throughout the reticulation plus one at the treatment plant inlet.

The Matamata Wastewater Plant is situated at Mangawhero Road to the east of Matamata Township.

Section 6: Lifecycle Management



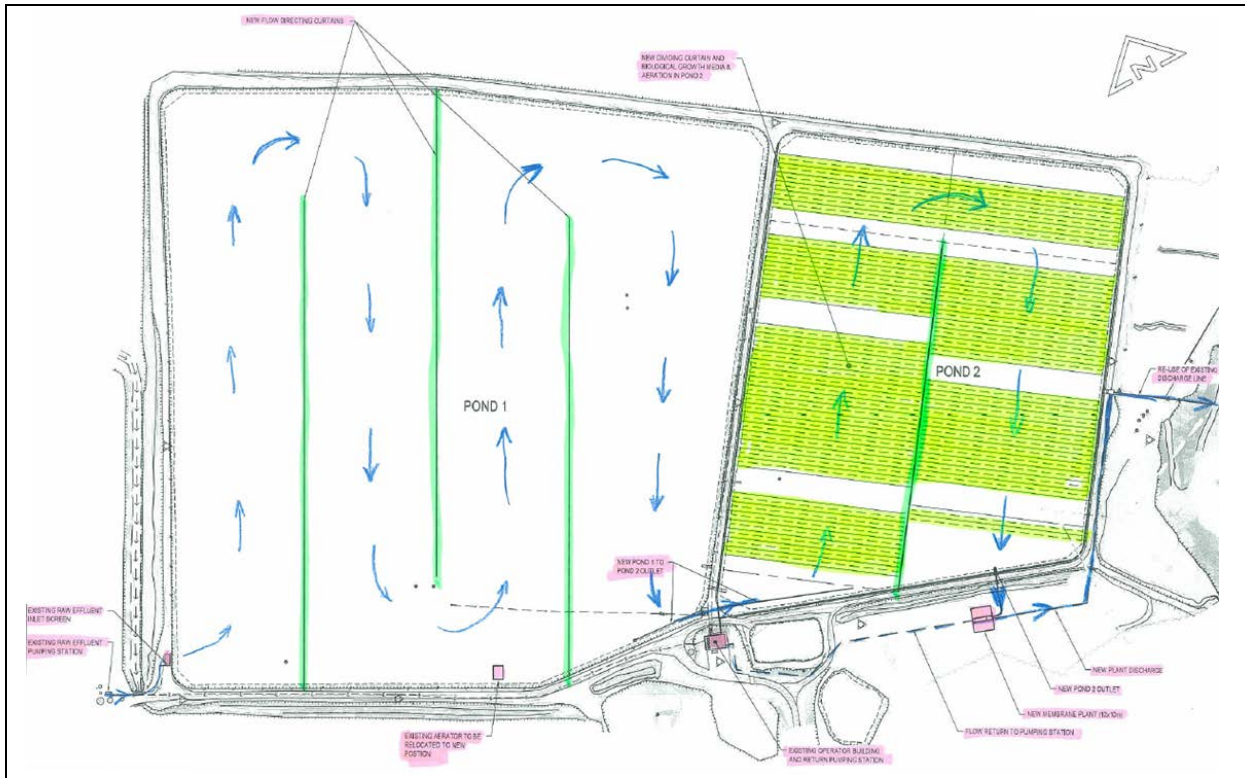
6.3.2 Matamata System Information

Treatment Plant	Built	Oxidation Pond	1971
	Upgraded	Floating curtains, Aquamats, Membrane filtration	2010-11
	Capacity	4000 m ³	
Reticulation - Matamata			
Sewer Mains	64.5 km	Pump Stations	8
Rising Mains	1.5 km	Manholes	1024
Service Lines	15.0 km		
Reticulation - Waharoa/Raungaiti			
Sewer Mains	5.8 km	Pump Stations	4
Rising Mains	8.2 km	Manholes	92
Service Lines	1.7 km		

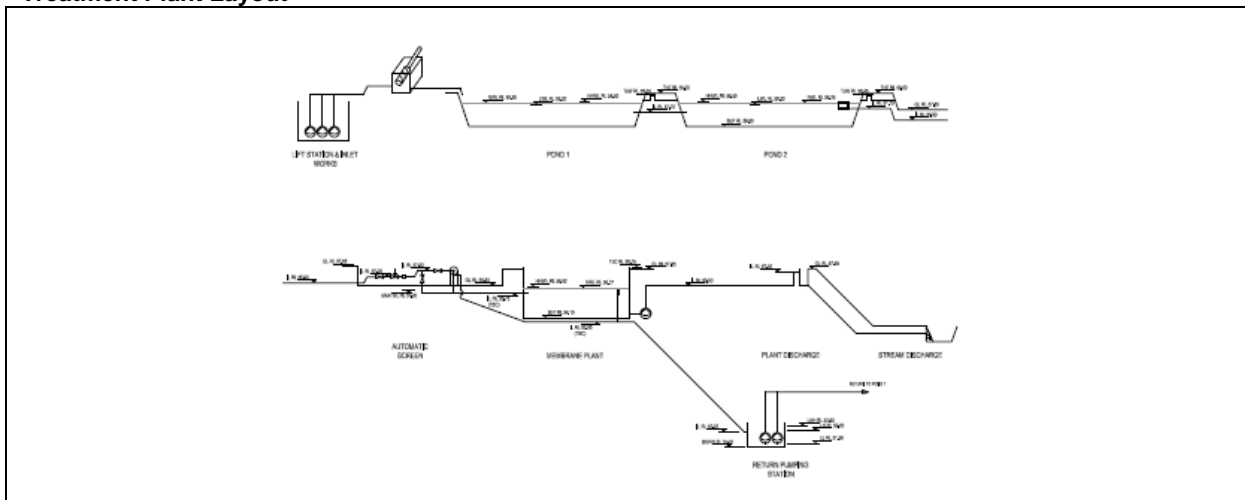
6.3.3 Matamata Treatment Plant

The treatment plant has been fully upgraded to comply with the renewed consents by the addition of floating curtains to extend the retention time, Aquamats to break down the suspended solids and nutrients, and membrane filters remove the suspended solids, organic matter and nutrients. The membrane filters which were second-hand have been replaced in 2017/18. The new membrane filters will increase the capacity of the plant.

Section 6: Lifecycle Management



Treatment Plant Layout



Treatment Plant Hydraulic Profile

6.3.4 Matamata Reticulation

The data that is available in the asset register indicates that:

- AC pipe was installed from 1939 to 1986
- Earthenware pipe was installed from 1923 to 1961
- Concrete pipe was installed from 1924 up to 1999
- Later pipes are mainly uPVC

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)	Diameter	Length (metres)
Asbestos Cement	15,785	100	16,094
Boss Pipe	45	150	52,649
Concrete	8,613	180	113
Earthenware	18,399	200	1,188
HDPE	231	225	5,195
Resin (Concrete)	1,584	300	2,310
Ribloc (Concrete)	1,163	375	1,667
Unknown	7,939	450	1,721
uPVC	26,573	50	99
Total	81,037	Total	81,037

6.3.5 Matamata Pump Stations

Matamata has 8 pump stations of which one is associated with the Matamata WWTP. Associated with these is 1.5 km of rising mains.

Details of the individual pump stations are set out below:

Name (Location)	Install Date	Number of Pumps	Pump kW
Centennial Drive (Langlands)	2004	2	5.9
Eldonwood	2007	2	2.0
Evergreen	2011	2	3.1
Inlet PS (WWTP)	2008	3	13.5
Laurenson (Taline)	2006	2	2.4
Manuka St	1974	2	5.9
Rockfort St (Industrial)	2009	2	2.0
Waharoa Rd	1974	2	3.1

6.3.6 Waharoa/Raungaiti Reticulation

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)
Concrete	8
HDPE	9,536
uPVC	6,273
Total	15,816

Diameter	Length (Metres)
100	1,711
125	2,981
150	4,551
180	1,290
200	62
225	11
250	5,209
Total	15,816

6.3.7 Waharoa/Raungaiti Pump Stations

Waharoa/Raungaiti has four pump stations

Details of the individual pump stations are set out below:

Name (Location)	Install Date	Number of Pumps	Pump kW
Airfield (Raungaiti)	2012	2	4.4
Casey Street	2012	2	2.4
Domain	2012	2	15.0
Mill Street	2012	2	2.4

6.3.8 Matamata Resource Consents

Number	Consent Details	Expires
110031	Discharge treated municipal effluent to the Mangawhero Stream	8/06/2024
118686	Discharge contaminants into the air from all activities associated with the Matamata Sewage Treatment Plant	8/06/2024
118688	Undertake earthworks including soil disturbance activities with subsequent discharge of contaminants to water in association with bed disturbance activities, filling, use & occupation of the bed of the Mangawhero Stream	6/05/2044

Note: Planning for the consent renewal is intended to commence a minimum of two years prior to the expiry date.

6.3.9 Matamata Assessment of Risks

The Assessment of Water Services carried out in 2017 indicated the risks and issue for Matamata was as detailed below.

Risk and Issues	Proposals	Comments
Treatment plant is not complying with the ammonia limit set in the consent.	MPDC has made application to the WRC to change in the limit. An AEE is to be commissioned in 2017/18 to be carried out over a winter and summer followed by an Options Assessment in 2018/19.	An alternative option is to construct an activated sludge plant which will enable easier management of variable composition flows.

6.4 Morrinsville Wastewater Scheme

6.4.1 Morrinsville Scheme Overview

Morrinsville Wastewater Scheme services the community of Morrinsville and Rukumoana along with trade waste disposal for two major industries and four other industry contributors.

The reticulation consists of a combination of AC, PVC, and Earthenware pipes all installed at different times. There are nine pump stations located throughout the reticulation. The Rukumoana reticulation and pump station was installed in 2007.

The treatment plant is located to the south east of Morrinsville Township adjacent to Roache Road.

The plant was upgraded in 2011 to meet new consent conditions. The upgrade was a joint venture between Council, Fonterra and Greenlea on a cost share basis.



6.4.2 Morrinsville System Information

Treatment Plant	Upgraded		2011
	Capacity	8,000 – 16,000 m ³ /day	
Reticulation			
Sewer Mains	65.2 km	Pump Stations	9
Rising Mains	9.3 km	Manholes	1088
Service Lines	10.4 km		

6.4.3 Morrinsville Treatment Plant

Morrinsville Sewage Treatment Plant is located near the Morrinsville Transfer Station along Roach Road. The plant was upgraded in 2011.

Morrinsville WWTP treats a combination of domestic and industrial wastewater, with two main industrial discharges from the Fonterra dairy factory and Greenlea Premier Meats.

Both industries are seasonal, the load and composition of the influent to Morrinsville WWTP changes considerably from week to week. In addition, rapid changes in wastewater composition are experienced depending on the processing being undertaken on these sites on any given day.

As part of the upgrade and the need to reduce the variability of the influent and ensure consent compliance both Fonterra and Greenlea undertake onsite treatment before discharging to the WWTP

Industry is responsible for 56% of the total flow and significantly more of the load to the WWTP under average load and flow conditions.

The Morrinsville WWTP is operated by Kaimai Valley Services (KVS) the Matamata Piako District Council (MPDC) operations unit

There is also a need to follow up on a requirement of the Trade Waste Consents with Fonterra & Geenlea (clause 6.2 Treatment of Historical Bio Mass) "*Within 5 years from effective date, the Council shall commission a report ...*" and the effect date means when the plant was commission and becomes fully operational, which is 30 April 2013. It is proposed to commission the report with the emphasis being a pragmatic cost sharing solution

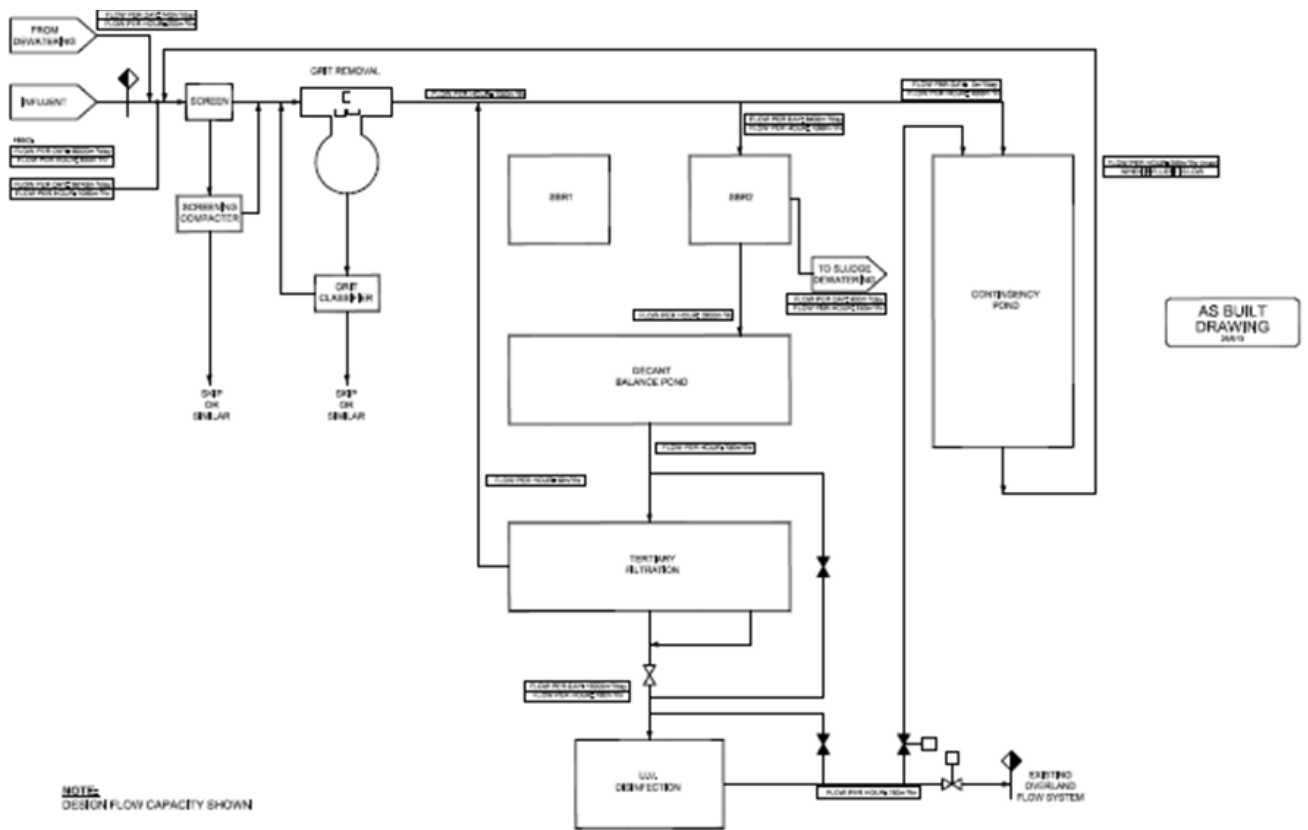
This requirement is linked with the bioremediation trials that have been undertaken which have helped to identify the methodology required. Council is currently waiting for Resource Consent to discharge WAS to Pond C where batched bacteria and enzymes is to be injected into the sludge at set points around the pond. The consent application includes a request for the term to be 7 years so as to align with the terms of the other consents held for the plant. Bioremediation is considered a short-term solution to managing sludge as not all the sludge is broken down in the process and residual sludge will remain in the pond. Long-term mechanical de-watering methodologies will need to be considered.

The plant was originally designed to process 16,800 m³/day (two SBRs operating) but during construction a decision was made not to retain and convert SBR 1 as the cost was believed to be not justified. The plant is still able to process the 16,800 m³/day using the single SBR, however, there is no redundancy if the SBR needs to be taken off-line for maintenance.

Section 6: Lifecycle Management



Layout of updated treatment plant



Schematic of updated treatment plant

Septage Disposal

The Council operates a Septic Receivable Station at Morrinsville WWTP which contains:

- Mechanically-ranked bar screen
- Screenings wash system
- Automated invoicing system

The system operates such that a typical 6,000L tank truck can be emptied in 4 minutes. There have been blockages of the screen on a number of occasions. The design of the screen is such that the blockage can only be cleared through an operator climbing into the machine with inherent danger. After a recent incident the screen operation is under investigation by Health and Safety staff. Replacement of the screen prior to the renewal date of 2021 is being considered.

6.4.4 Morrinsville Reticulation

From the data that is available the asset register indicates that:

- AC pipe was installed from 1951 to 1984
- Earthenware pipe was installed from 1923 to 1974
- Later pipes are mainly uPVC.

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)
Asbestos Cement	29,654
Cement lined steel	33
Concrete	5,241
Earthenware	10,507
HDPE	8,885
MDPE	452
Resin (Concrete)	1,165
Steel	25
Unknown	133
uPVC	27,815
uPVC Relined	1,745
Total	85,655

Diameter	Length (metres)
100	16,535
150	51,082
160	4,372
180	213
200	2,076
225	2,862
250	227
300	3,353
375	1,562
400	304
450	130
50	776
600	2,164
Total	85,655

Modelling Results

The modelling carried out in 2006 indicated the following:

- It appears that most of the pipe sections are adequate to cater for sewer flows for all flow conditions within the historic rainfall period (17 years).

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- There are manholes that surcharge (mainly along the 600mm trunk main). 15 manholes surcharge after a one year rainfall event, 17 after a two year event, 25 after a five year event and 50 after a ten year event
- All ten gauged catchments were identified to possess maximum leakage rates under saturated conditions as indicated below. Standard for Sewers considered to be good condition is 3L/m/mm

Modelled Rainfall Ingress Rate

Catchment	Max Rainfall Ingress L/m/mm
100220	22.5
100054	11.3
100394	9.4
100288	5.8
100742	14.3
100493	10.7
100231	11.7
100234	9.3
100656	19.3
Allen PS	28.3

Note: levelling of the main lines occurred prior to the modelling to ensure that the accuracy of the model was not compromised.

6.4.5 Morrinsville Pump Stations

Morrinsville has 9 pump stations of which one empties the septage site in the Morrinsville WWTP.

An additional pump station is located near the closed landfill and pumps leachate to the wastewater treatment plant.

Details of the individual pump stations are set out below.

Name (Location)	Install Date	Number of Pumps	Pump kW
Allen St	1972	3	22
Anzac Ave	2001	1	0.8
Avenue Rd	2007	2	2.0
De Gussa	2007	2	13.5
Hamilton Rd	1991	1	2.4
Rukumoana	2007	2	3.1
Septage Plant	2007	2	3.1
Stirling Heights	2005	2	2.0

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Name (Location)	Install Date	Number of Pumps	Pump kW
West Street	2005	1	2.0
Landfill Pump Station	Upgraded 2005	2	7.5

6.4.6 Morrinsville Resource Consents

Number	Consent Details	Expires
118885	Discharge of treated industrial and municipal wastewater from the Morrinsville WWTP into a tributary of the Piako River known as the Totara Gully Stream	17/12/2024
118886	Discharge of treated industrial and municipal wastewater, screened high-flow bypasses, stormwater and associated contaminants from the Morrinsville WWTP Pond (Pond C) into the Piako River	17/12/2024
118887	Discharge contaminants from sludge, waste activated sludge and wastewater from the Morrinsville WWTP onto and into land via seepage from Ponds A,B and C	17/12/2024
118888	Discharge of contaminants to air, being principally odour from operations of the wastewater treatment plant, sludge dewatering and ponds	17/12/2024
118889	Placement, use and maintenance of two existing wastewater discharge outfall structures on and over the beds of the Totara Gully Stream and the Piako River	17/12/2024
119563	Discharge of drainage water from a toe drain of the Pond C dam, into the Totara Gully Stream	17/12/2024
HCW590097	Construction of earth dam and oxidation pond for treating sewage	01/10/2026
<i>Note: Planning for the consent renewal is intended to commence a minimum of two years prior to the expiry date.</i>		

6.4.7 Morrinsville Assessment of Risks

The Assessment of Water Services carried out in 2017 indicated the risks and issue for Morrinsville was as detailed below.

Risk and Issues	Proposals	Comments
Potential risk that Greenlea exceeds their nitrate limit	Continue to rely on monitoring of the discharge.	
The dewatering building is currently not utilised and this may be longer term if Pond C is used and bioremediation continues.	That an assessment is carried out with regard to potential utilisation of the building and dewatering equipment.	The long –term prognosis is that mechanical de-watering will be required.

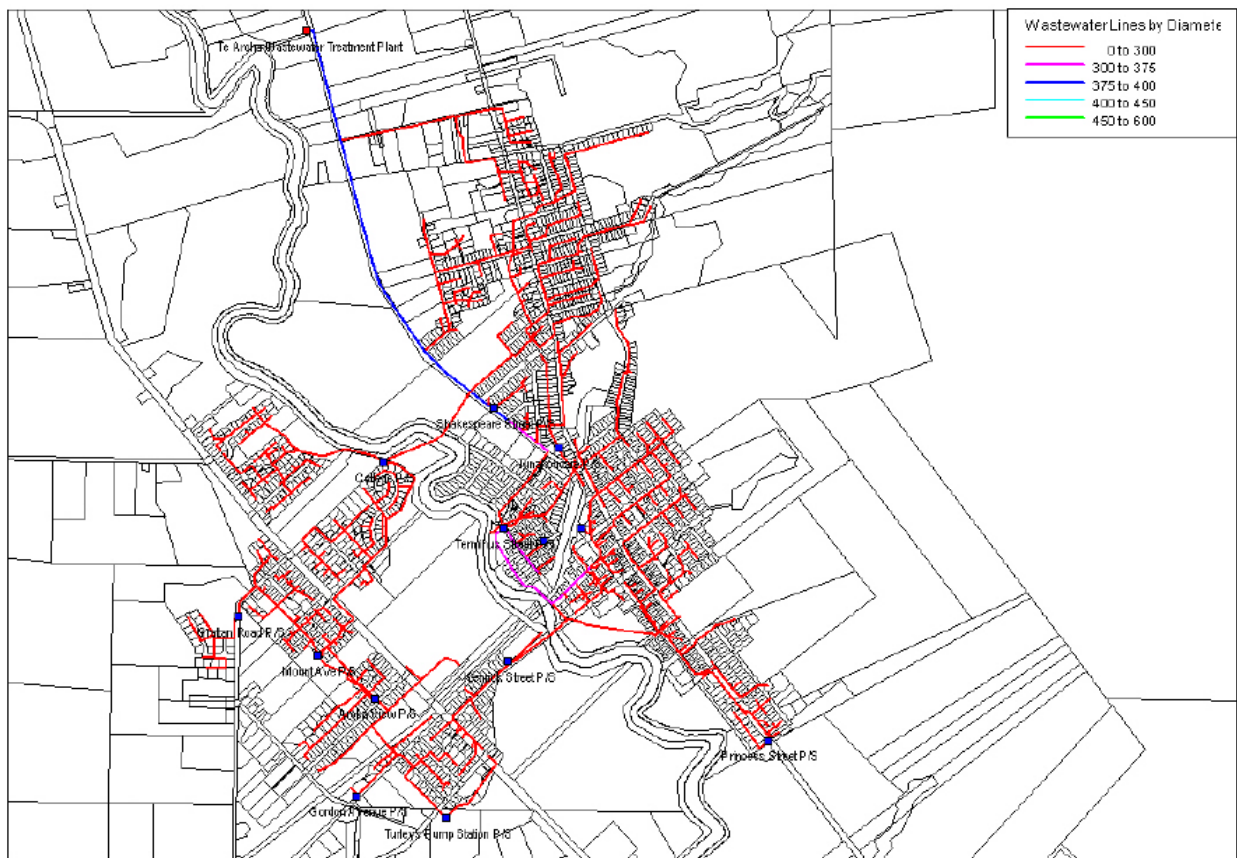
6.5 Te Aroha Wastewater Scheme

6.5.1 Te Aroha Scheme Overview

Te Aroha Wastewater Scheme services the community of Te Aroha along with Trade Waste disposal for Waste Management Ltd (leachate from private landfill – formerly HG Leach Ltd).

The reticulation consists of a combination of AC, PVC, Cement lined Steel and Earthenware pipes all installed at different times. There are 14 Pump Stations located throughout the reticulation.

The treatment plant is located to the northwest of Te Aroha Township between the Waihou River and old Thames Branch Railway line (now Hauraki Rail Trail cycleway).



6.5.2 Te Aroha Scheme Information

Treatment Plant	Upgraded	MBR Plant	2011
	Capacity		8000 m ³ /day
Reticulation			
Sewer Mains	46.7 km	Pump Stations	13
Rising Mains	3.5 km	Manholes	584
Service Lines	3.8 km		

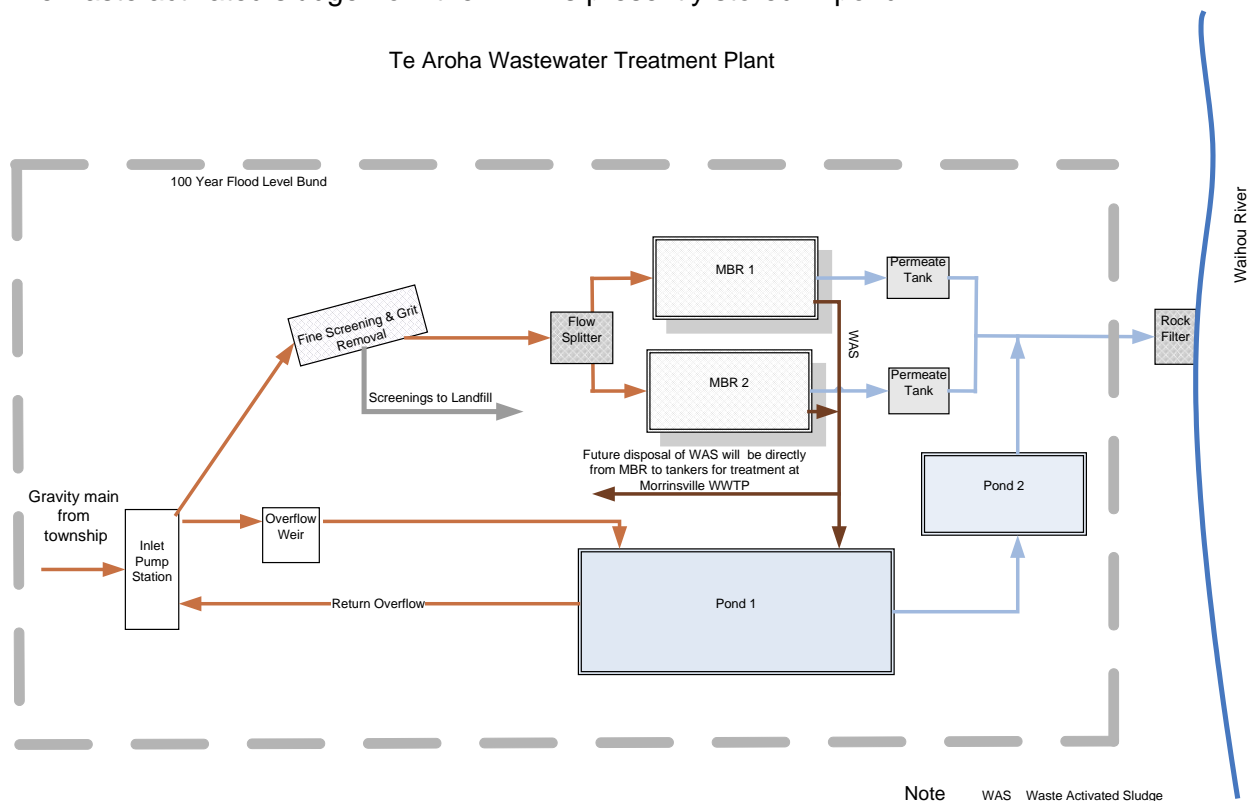
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6.5.3 Te Aroha Treatment Plant

Te Aroha Sewage Treatment Plant is located to the northwest of Te Aroha Township between the Waihou River and old Thames Branch Railway line. The Treatment Plant (2007 upgrade) was designed to provide nitrification as well as organic degradation and the overall plant consists of the following:

- Main Inlet pump station
- Screening removal
- Membrane bioreactor (MBR)
- Pond – Overflow & Waste Activated Sludge (WAS) storage
- Treatment pond

The waste activated sludge from the MBR is presently stored in pond 1



The design flows for the Te Aroha WWTP are shown below and are taken from the Te Aroha WWTP Upgrade Process Design report by Harrison and Grierson dated August 2005. This report also includes details of the effluent make-up and design loads.

	Municipal Sewage	Trucked Wastes	Combined Flows
Design PE	3800		
Average Dry Weather Flow	1150 m ³ /d	86m ³ /d	1236m ³ /d
Average Flow	1705m ³ /d	86m ³ /d	1791m ³ /d
Peak Flow (95%ile)	7673m ³ /d	253m ³ /d	7926m ³ /d
MBR Design - (Flow through MBR)	2300m ³ /d		

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Trade Wastes

Trade waste discharges to the Te Aroha WWTP consist of:

Waste Management Ltd (formerly HG Leach Ltd) - Leachate from private landfill

Treatment Plant Flow Balancing

Flow through the MBR is capped at the selected value of 2300m³/day. The design allowed for the excess municipal sewage to bypass the MBR to pond 1 for balancing and storage. The bypass material was then going to be diverted back through the MBR when the MBR had the spare capacity. In practice the bypassed effluent is treated via pond 1 and 2 and the effluent is mixed with the MBR treated flow.

6.5.4 Te Aroha Reticulation

Due to lack of plans for assessing installation dates (plans were destroyed as considered not pertinent), 37% of all pipes use averaging of install dates (year 1978).

From the data that is available the asset register indicates that:

- AC pipe was installed from 1955 to 1987
- Earthenware pipe was installed from 1935 to 1955
- The majority of unknown pipes are in the 1935 to 1955 time span

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)
Asbestos Cement	16,606
Cement lined steel	100
Concrete	3,767
Earthenware	14,173
HDPE	728
Steel	105
Unknown	3,359
uPVC	14,150
uPVC Relined	975
Total	54,026

375	2,247
50	268
80	576
Total	54,026

Diameter	Length (metres)
100	9,010
150	30,430
160	776
180	152
200	1,766
225	7,380
250	117
300	1,304

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6.5.5 Te Aroha Pump Stations

Te Aroha has 13 pump stations. Details of the individual pump stations are set out below.

Name (Location)	Install Date	Number of Pumps	Pump kW
Aroha View Ave	2005	2	3.1
College (Ritchie St)	1981	3	1 x 13.5, 1 x 9 & 7.5 Standby Diesel
Gordon Ave	2006	1	2.0
Grattan Rd	2006	2	3.1
Kenrick Street	1978	2	2.0
Mount Ave	1978	2	5.9
Princess St	2011	2	1.7
Rewi Street	2003	1	1.2
Seddon St	1995	1	1.2
Shakespeare St	1978	2	3.1
Terminus St	1978	2	11.0 (plus 1 x 3.5 on overflow)
Tunakohoia	1992	1	1.2
Turleys	1986	1	3.1

6.5.6 Te Aroha Resource Consents

Number	Consent Details	Expires
113792	Rock filter wastewater outfall construction	18/01/2041
120309	Discharge to water – 7000m ³ /day Consent renewal applied for - application Number 120309	26/08/2035
121968	Discharge to land Discharge of seepage to land and ground	26/08/2035

Note: Planning for the consent renewal is intended to commence a minimum of two years prior to the expiry date.

6.5.7 Te Aroha Assessment of Risks

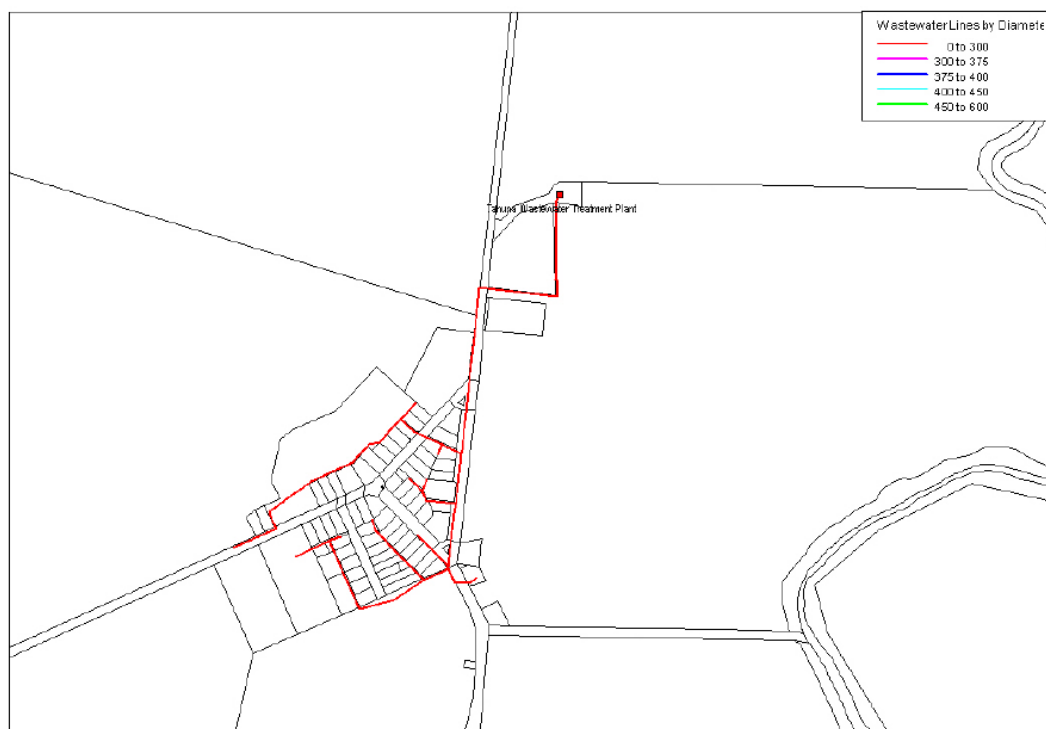
The Assessment of Water Services 2017 indicates the risks and issue for Te Aroha as being:

Risk and Issues	Proposals	Comments
Treatment plant is not complying with the phosphorus limit set in the consent.	MPDC has made application to the WRC to change the condition in conjunction with the Matamata plant.	Silver Fern Farms also discharging to the Waihou River, have a lower phosphorus limit – this is the basis for the application to lower the MPDC limit. MPDC currently paying \$15K per year to Fish and Game as a penalty for the phosphorus limit exceedance.
Management of sludge at the plant. The bioremediation trial has not been successful and other options for managing the sludge need to be identified. The removal and disposal of accumulated sludge also needs to be planned for.	An options report is required to provide options for the ongoing management of sludge and removal and disposal of the accumulated sludge.	It is estimated that the accumulated sludge will need to be removed within 5 years.
Wet weather overflows of sewage into river.	Carry out investigation with regard to infiltration reduction and allow for rehabilitation.	

6.6 Tahuna Wastewater Scheme

6.6.1 Tahuna Scheme Overview

Tahuna was constructed in 2010 as a direct response to the community needs and the availability of Government subsidy. The poor soakage of the underlying soils was resulting in the poor performance of septic tanks.



6.6.2 Tahuna System Information

Treatment Plant	Built		2010
	Capacity	MBR Package Plant	70 m ³ /day
Reticulation			
Sewer Mains	2.5 km	Pump Stations	0
Rising Mains	0 km	Manholes	41
Service Lines	0.5 km		

6.6.3 Tahuna Treatment Plant

The Tahuna Treatment Plant is a Hynds MBR Package plant comprising:

- A Balance Tank to ensure a constant flow of effluent through the treatment plant and to act as emergency storage during power outages or similar failures.
- A Primary Tank for anaerobic treatment and screening/de-gritting of effluent before entering the anoxic tank.
- An Anoxic Tank for denitrification.

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- A Membrane Bioreactor Tank (MBR) where the solid separation and Biological Oxygen Demand (BOD) conversion and nitrification occur.
- A Permeate Tank where samples etc can be taken, before the treated effluent is gravity fed to disposal.
- A site shed that houses the blowers, the permeate pumps, Programmable Logic Controller (PLC) and Motor Control Cabinet.



Tahuna Treatment Plant

The design of the treatment plant has been based on the following loading rates:

Total Flow (m ³ /day)	BOD (kg/day)	Suspended Solids (kg/Day)	Total Nitrogen (kg/day)
70	12	12	2.6

The average effluent quality produced from the plant is estimated to conform to the following standards:

BOD (mg/L)	SS (mg/L)	TN (mg/L)	Faecal Coliform (cfu/100ml)
<5	<5	<10	<1-5

6.6.4 Tahuna Reticulation

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)
uPVC	3,017
Total	3,017

150	2,515
50	78
Total	3,017

Diameter	Length (metres)
100	425

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6.6.5 Tahuna Pump Stations

Tahuna is a gravity scheme and there are no pump stations.

6.6.6 Tahuna Resource Consents

Number	Consent Details	Expires
118187	Discharge up to 70 cubic metres per day of treated municipal wastewater from the Tahuna WWTP into the Tahuna Stream	31/07/2028
118591	Place approximately 800 cubic metres of cleanfill onto land in a high risk location to create a building platform to the Tahuna WWTP	31/07/2011

Note: Planning for the consent renewal is intended to commence a minimum of two years prior to the expiry date.

6.6.7 Tahuna Assessment of Risks

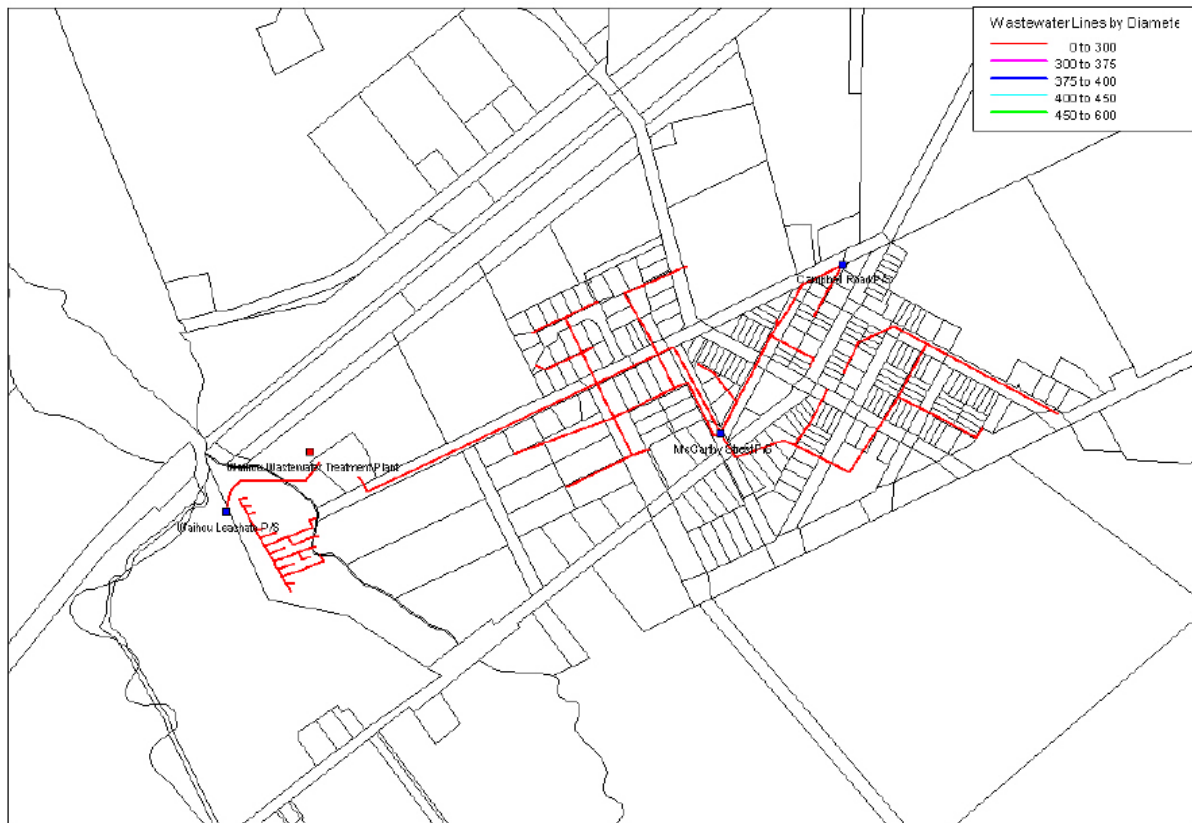
Tahuna Wastewater system did not exist when the 2005 assessment was undertaken and no risks were assessed. The 2016 Annual Report shows compliance with all consent conditions.

6.7 Waihou Wastewater Scheme

6.7.1 Waihou Scheme Overview

Waihou Wastewater Scheme services the township and community of Waihou and the landfill leachate. The reticulation consists of a combination of AC and PVC pipes.

There are four pump stations, two located within the reticulation and two associated with the landfill leachate. The Waihou Wastewater Plant is situated at Barker Road to the north west of the township.



6.7.2 Waihou System Information

Treatment Plant	Built	Oxidation Pond	
	Capacity	Upgraded in 2011 with Trickling Filter. UV and land disposal in summer	
Reticulation			
Sewer Mains	3.5 km	Pump Stations - reticulation	2
Rising Mains	0.46 km	Pump Stations – leachate from Transfer Station & closed land fill	2
Service Lines	0.05 km	Manholes	46

6.7.3 Waihou Treatment Plant

The treatment plant was upgraded in 2011 and the process is described in the final design report as:

Influent wastewater is screened by an automatic fine screen to remove gross solids and then will enter the pond. The first section of pond was converted to a primary zone (with an aerobic layer on top provided by recirculation from second section of oxidation pond).

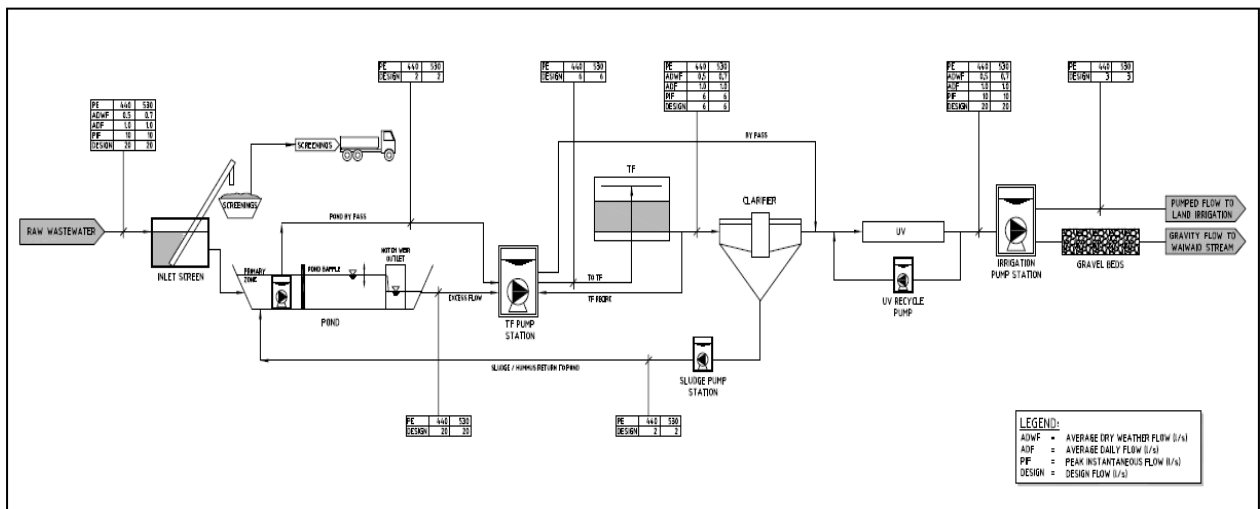
After initial treatment in the primary zone, a portion of the incoming flow (equal to the ADFW) is pumped from the pond to the Trickling Filter (TF) pump station, while any influent flow in excess of the ADF flows through the rest of the oxidation pond.

The oxidation pond provides storage of flows above the ADF including wet weather flows. It has a restricted flow outlet which gravitates to the TF pump station for further treatment. Flows into the TF pump station are pumped onto the TF. During extreme wet weather events flows in excess of the TF pump capacity overflow to the gravel beds.

A recycle of unsettled TF effluent back to the TF pump station is provided to promote denitrification in the second pass through the TF. The TF effluent is settled in a clarifier/humus tank and then UV disinfected.

The treated wastewater is disposed of by combination of irrigation to land during dry weather in summer and discharge to Waiwhero stream via gravel beds at other times.

Sludge from the humus tank is pumped to the inlet end of the pond for stabilisation. The influent wastewater directed to the pond enters at floor level and pass up through the sludge layer to provide initial anaerobic treatment in the lower layer of the pond and to encourage generation of readily biodegradable matter (volatile fatty acids etc.) which will promote production of exopolysaccharides on the TF media, which are essential for flocculating the pond algae and removing it from the treated wastewater.



Waihou Process Flow Diagram

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6.7.4 Waihou Reticulation

From the data that is available the asset register indicates that:

- AC pipe was installed in 1977
- PVC pipe was installed in 1977

The makeup of all the pipes including laterals, rising mains and miscellaneous is:

Material	Length (metres)
Asbestos Cement	3,099
Steel	146
uPVC	1,404
Total	4,649

Diameter	Length (metres)
100	1,228
150	2,815
50	492
Total	4,649

6.7.5 Waihou Pump Stations

The Waihou reticulation contains two pump stations and there are two pump stations feeding into the treatment plant from the adjoining transfer station and closed landfill.

The first pumps the contaminated stormwater from the transfer station into the second pump station which also receives the leachate from the closed landfill.

The second pump station pumps directly to the treatment plant.

Name (Location)	Install Date	Number of Pumps	Pump kW
Campbell Road (Old Post Office)	1985	1	2.0
McCarthy St	1985	2	1.3 & 2.0
Transfer Station		1	2.2
Leachate Pump Station		2	3.1

6.7.6 Waihou Resource Consents

Number	Consent Details	Expires
120703	Discharge treated wastewater to land on a seasonal basis and to the Waiwhero Stream and associated matters	01/07/2026
120705	Place, use and maintain an existing outfall structure in the bank of the Waiwhero Stream	01/07/2046

Note: Planning for the consent renewal is intended to commence a minimum of two years prior to the expiry date.

6.7.7 Waihou Assessment of Risks

The Assessment of Water Services carried out in 2017 indicates the risks and issue for the Waihou Wastewater System was as detailed below.

Risk and Issues	Proposals	Comments
<p>The plant does not currently meet resource consent (RC120703) conditions limits for TSS, coliforms and NH3. The reason for this is attributed to the over-design of the biological trickling filter and the fact that the clarifier is not clarifying because the pond algae is not settling.</p>	<p>MPDC has made application to the WRC to irrigate to land all year round (using Mott Macdonald).</p>	<p>An AEE report is being commissioned through Mott Macdonald and land availability is being assessed.</p>

6.8 Lifecycle Management - An Overview

The Lifecycle Management programmes cover the four key categories of work necessary to achieve the required outcomes from the Water Activity. These programmes are:

Management Programme:


- Management functions required to support the other Programmes
- Developed and Implemented by MPDC

Operations and Maintenance Programme:

- To ensure efficient operation and serviceability of the assets so that they achieve their service potential over their useful lives
- Developed and Managed by MPDC - Implemented by MPDC and external service providers

Renewal Programme:


- To provide for the progressive replacement of individual assets that have reached the end of their useful lives
- Developed and Managed by MPDC - Implemented by external service providers



Maintaining the service potential of the assets and ensuring that the assets achieve that potential

Development Programme:

- To improve parts of the system currently performing below target service standards and to allow development to meet future demand requirements
- Developed and Managed by Matamata-Piako District Council - Implemented by external service providers



Closing service gaps.
Meeting future demand

The Operations & Maintenance and Renewal Programmes are focused on maintaining the current service potential of assets, and are primarily driven by the condition of assets although asset performance is often an indicator of asset condition.

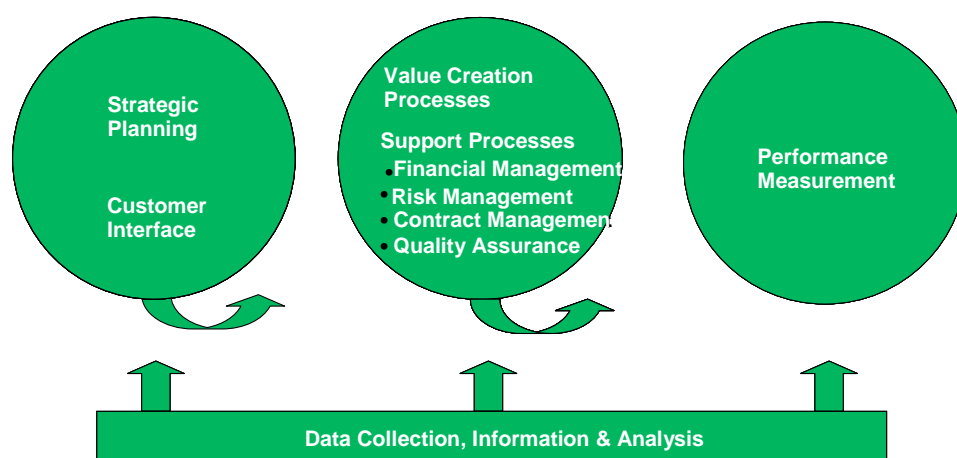
The Development Programme is focused on closing service gaps by increasing the service potential of the Water system and is primarily driven by the performance of assets.

6.9 Management Programme

6.9.1 Introduction

- Management and monitoring strategies set out the activities required to support the maintenance, operations cyclic renewal and asset development programmes. These activities include:
- Strategic planning
- Data management and evaluation
- Business processes
- Monitoring
- Financial management.

The relationship between these activities is indicated in the following diagram.



Strategic planning and a focus on meeting the needs of Water Activity consumers drives the design of management processes which in turn are reflected in the level of performance that is achieved. Collection of data necessary to manage the Water Activity effectively and processes for the analysis and interpretation of this data support all management activities.

6.9.2 Management Strategies

The Water strategy is set out below for the following categories:

- Strategic Planning
- Data Management and Utilisation
- Business Processes
- Monitoring
- Financial Management

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Strategy	Objective/ Description
Strategic Planning	
Human Resources	<p>Develop the professional skills of the staff through adequate training and experience</p> <p>Personal Development Plans will be agreed with staff each year and a register maintained to record training history. Staff are encouraged to belong to appropriate professional bodies and to attend appropriate conferences, seminars and training courses</p>
Strategic Alignment	<p>This Activity Plan will support the achievement of relevant Community Outcomes for Matamata-Piako District</p> <p>Community Outcomes for Matamata-Piako District are set out in the Long Term Council Community Plan. The intended contribution of the Matamata-Piako District Council wastewater to the achievement of Community Outcomes is shown in this Activity Plan</p>
Service Levels	<p>A clear statement of water services provided and standards to be achieved that directly link to and support the stated community outcomes are shown within this AP</p> <p>Service standards will be incorporated into contracts as part of an internal performance management framework for the wastewater activity and will be used for performance and monitoring purposes</p> <p>With the introduction of community outcomes and the clear need to demonstrate how the activity supports those outcomes and how that will be measured circumvents previous customer and technical levels of service. These have been integrated into the service levels and allow the annual performance measures and the three yearly community outcome measures to be one and the same. It also provides a clear path for consultation with the community</p>
Sustainable Management	<p>Ensure all planning for the management, operation, maintenance, renewal and development of the wastewater activity is compatible with sustainable management principles</p> <p>Matamata-Piako District Council will pursue ways of limiting the use of natural resources including energy, valued landscapes (and other natural heritage) and adverse effects on waterways. This will involve auditing the systems and materials used, and developing ways to incorporate sustainable operation and development principles into its activities. For example, auditing power usage in pump stations, and using non-asset based solutions where possible</p>
Data Management and Utilisation	
Network Modelling	<p>Instigate the development of computer-based hydraulic models of the wastewater system. Computer models of the wastewater reticulation are required to enable Matamata-Piako District Council to:</p> <ul style="list-style-type: none"> – Determine accurately the existing capacity of the system – Identify inadequate sections of the system – Operate the system in the most efficient manner – Determine the impact of further development on the system – Identify system upgrading requirements – Compare options for upgrading the wastewater system

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Strategy	Objective/ Description
Data Collection	<p>Data collection programmes (condition, performance, asset registers) closely aligned with business needs will be implemented in accordance with documented quality processes</p> <p>Data collection, maintenance and analysis are expensive and it is important that programmes and techniques are cost effective and consistent with business needs. The processes will be reviewed for the collection and upgrading of essential data based on asset criticality including:</p> <ul style="list-style-type: none"> - Asset attribute information - Asset performance data - Asset condition data
GIS Data	<p>GIS data will continue to be the subject of defined quality assurance processes</p> <p>Matamata-Piako District Council has quality processes to ensure that all data entered to the GIS system meets defined quality standards and supports AM through connectivity with the asset register and AM data storage</p> <p>Support the progressive and systematic review of existing data on the GIS system</p>
Business Processes	
Activity Plan Updates	<p>This Activity Plan remains a strategic 'living' document and will be updated as required and reviewed at three yearly intervals or more frequently as necessary to incorporate significant improvements to asset management practices (as proposed in the improvement plan)</p> <p>The scope of the review will be influenced by changes in Community Outcomes for Matamata-Piako District, service standards, improved knowledge of assets, introduction of Asset Management improvements and corporate strategy/ policy and process</p>
Risk Management	<p>Risk Management is an essential part of Asset Management. Water activity risks will be managed by implementing a Risk Management Plan for the water activity and the implementation of risk mitigation measures to maintain risk exposure at agreed levels</p> <p>Risk mitigation measures will include maintaining appropriate insurance cover, emergency response planning, condition monitoring of critical assets, preventative maintenance, use of telemetry, and operations manuals, review of standards and physical works programmes</p>
Infrastructure Asset Valuation	<p>Perform valuations in a manner that is consistent with national guidelines and Matamata-Piako District Council corporate policy for valuation cycles which current are 3 yearly aligned with LTP requirements</p> <p>Asset valuations are the basis for several key asset management processes including asset renewal modelling and financial risk assessments. Valuations of the water system will be carried out based on data from the AMS system to ensure auditability and alignment with other processes</p>
Statutory Compliance	<p>Implement quality plans that identify legal obligations and processes adopted to achieve statutory compliance</p>
Quality Assurance	<p>Quality processes will cover activities such as reporting, data collection and management, contract monitoring, risk management, economic analysis, performance monitoring, strategic planning, customer contact, asset valuation, asset operation, work specification, etc</p>
Monitoring	

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Strategy	Objective/ Description
Level of Service Standards	Establish monitoring procedures to ensure wastewater activity is contributing to the community outcomes as stated and that internal controls are also monitored and managed
Management Standards	Establish Management Standards to provide an additional level of performance measurement that can be used by Matamata-Piako District Council on an “as required” basis as part of a performance framework for the water activity and monitor achievement of these standards
Asset Performance	Matamata-Piako District Council will establish a framework to enable the performance of the water assets to be monitored as an input to asset renewal and asset development programmes. The Monitoring includes: <ul style="list-style-type: none"> – Customer service requests – Asset failure records – Asset Maintenance records – Compliance with Resource Consents – Critical asset audits – Legislative compliance
Financial Management	
Budgeting	Prepare all expenditure programmes for the water activity in accordance with Council funding and budget preparation policies and procedures for at a 30 year projection Use the AM Plans to provide sufficient detail to demonstrate the decision making process for those 30 year projections The different categories of expenditure within the financial programmes will be identified to enable the funding to be allocated in accordance with the Council’s policies
Financial management	Manage the wastewater activity budget in accordance with statutes and corporate policy This will involve: <ul style="list-style-type: none"> – Economic appraisal of all capital expenditure – Annual review of Asset Management Plan financial programmes – Recording of significant deferred maintenance and asset renewals – Continuous monitoring of expenditure against budget
Sustainable Funding	Ensure the wastewater activity is managed in a financially sustainable manner over the long term. The financial requirements for the provision of the wastewater activity sustainably and to acceptable standards over the long term will be identified and provided for in draft budgets. These requirements include: <ul style="list-style-type: none"> – Management of the wastewater activity – Operation and maintenance of the wastewater systems – Asset replacement – Asset development to ensure that the ability of the wastewater activity to deliver an acceptable level of service is not significantly degraded by growth in Matamata-Piako District

While we do not have an asset register recording all aspects of asset management, we do not consider this a disadvantage as we have a CRM system handling customer complaints and failures, linked to the GIS system, and plant and reticulation monitoring via telemetry.

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Reticulation asset failure and maintenance is recorded against individual assets – excluding costs which are captured against asset groups.

Council also operates an Infrastructure Data system that consolidates existing systems and makes them more assessable.

A Sewer Activity Group (SAG) was set some years ago to bring together key operational, engineering and asset management staff to undertake co-ordination of the water activity. In particular it assesses renewal and capital projects for optimal timing, sensitivity and accuracy of data used, project justification and condition of assets etc.



6.9.3 Management Standards

The Matamata-Piako District Council Wastewater Activity is managed in accordance with the following standards:

- Generally accepted accounting Practice - NZ IAS 16
- The International Asset Management Manual
- Resource Consent Conditions for the Matamata-Piako District Stormwater Activity
- The Matamata-Piako District Council Health and Safety Plan

6.10 Operations and Maintenance Plan

6.10.1 Introduction

Operations and Maintenance strategies set out how the Wastewater activity will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of assets. Operations and Maintenance activities fall into the following categories, each having distinct objectives and triggering mechanisms:

Operations - Activities designed to ensure efficient utilisation of the assets, and therefore that the assets achieve their service potential. Operational strategies cover activities such as energy usage, control of mechanical and electrical plant, inspections and service management.

Maintenance - Maintenance strategies are designed to enable existing assets to operate to their service potential over their useful life. This is necessary to meet service standards, achieve target standards and prevent premature asset failure or deterioration. There are three types of maintenance:

- **Programmed Maintenance** - A base level of maintenance carried out to a predetermined schedule. Its objective is to maintain the service potential of the wastewater system
- **Condition Maintenance** - Maintenance actioned as a result of condition or performance evaluations of components of the Wastewater system. Its objective is to avoid primary system failure
- **Reactive Maintenance** - Maintenance carried out in response to reported problems or system defects. Its objective is to maintain day-to-day levels of service

6.10.2 Method of Delivery

The operation and maintenance of the MPDC Wastewater Activity is carried out using a combination of Matamata-Piako District Council staff, Council owned Business Units and external contractors consisting of:

- Group Manager Service Delivery responsible for the internal Business Units
- Asset Manager Strategy & Policy responsible for overall compliance including resource consents and annual reporting
- Kaimai Consultants provide internal design (Council Business Unit)
- Kaimai Valley Services for all maintenance and Treatment Plant operations (Council Business Unit)
- External contractors for specialist activities such as laboratory testing and major overhauls of mechanical equipment are commissioned by Kaimai Consultants and Kaimai Valley Services

Major Capital Construction Work is normal formally tendered by Kaimai Consultants

6.10.3 Maintenance Data on Asset Register

Maintenance works carried out are actioned through the CRM system generally and after the work has been completed KVS staff complete a report, layout plan form (RLP) with this data then being entered into AssetFinda.

The maintenance data on AssetFinda can then be exported to XLSX and used for reporting. A change is proposed from the paper based RLP format to using a mobile computer device which will improve data quality.

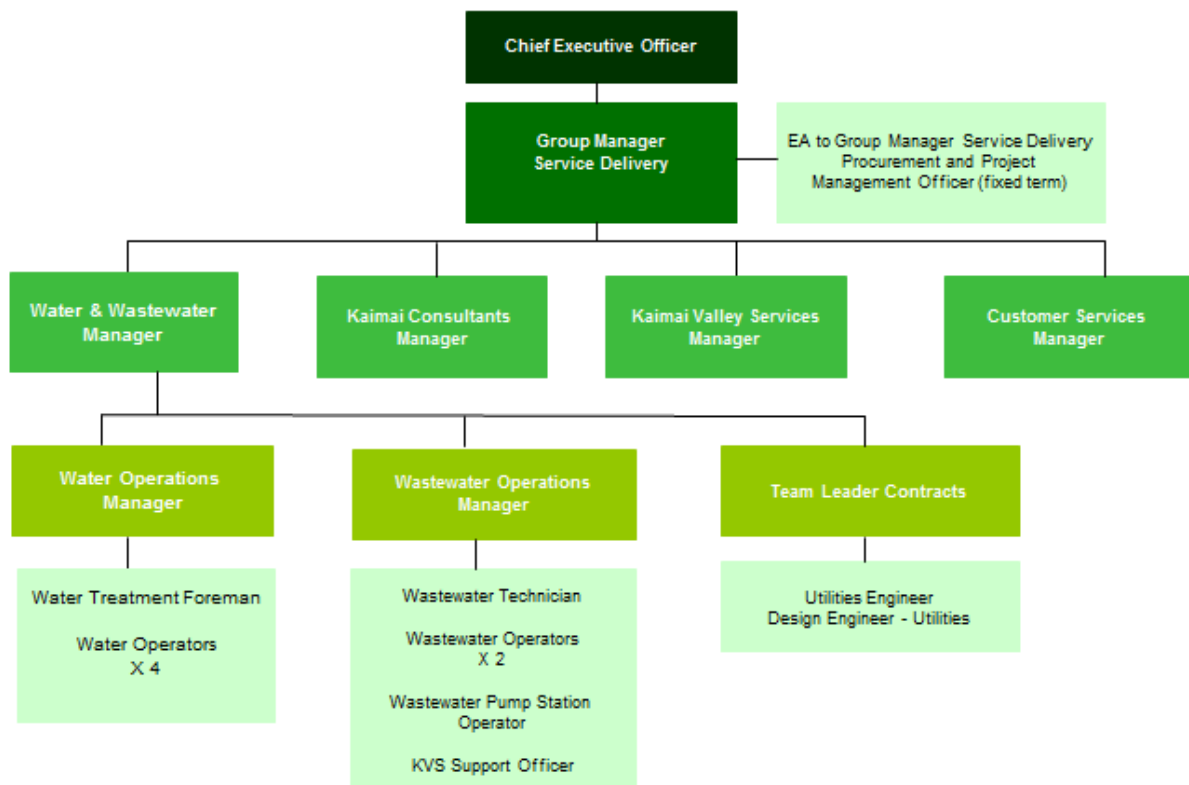
A screen shot of the AssetFinda data is presented below.

Maintenance Event Number	Asset Id	Community	Asset Class	System Name	Asset Group	Asset Type	Asset Sub Type	Description	Maintenance Type	Failure Cause	Repair Method	Complete Date	Cost	Contractor Name	GL Code Contract	Service
MEN200801311327031	310463	Matamata	ww_line	Gravity Main	Concrete	225	225	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	11/12/2007	0	KVS	none	
MEN200801311202071	310456	Matamata	ww_line	Gravity Main	Earthenware	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	1/12/2007	0	KVS	none	
MEN200801311202321	310458	Matamata	ww_line	Gravity Main	Earthenware	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	1/12/2007	0	KVS	none	
MEN200801311203021	310460	Matamata	ww_line	Gravity Main	Earthenware	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	1/12/2007	0	KVS	none	
MEN200801311201421	310462	Matamata	ww_line	Gravity Main	Earthenware	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	1/12/2007	0	KVS	none	
CT 15020	310463	Matamata	ww_line	Gravity Main	Asbestos Cement	150	150	Blocked pipe	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	7/12/2006	0	KVS	none	
MEN2007021311326341	310463	Matamata	ww_line	Gravity Main	Asbestos Cement	150	150	CCTV survey by KVS roots in pipe from manhole to 28.9m. Camera submerged past this point	Customer Report/Request	Sewer Overflow	Clear Blockage and Reinstate	14/12/2006	0	KVS	none	
MEN200706221107041	310463	Matamata	ww_line	Gravity Main	Asbestos Cement	150	150	Pipe blocked between 13 and 25	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	27/05/2007	0	KVS	none	
MEN200801311201051	310463	Matamata	ww_line	Gravity Main	Asbestos cement	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	1/12/2007	0	KVS	none	
MEN200801311156031	310466	Matamata	ww_line	Gravity Main	Earthenware	150	150	Jetted section	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	20/12/2007	0	KVS	none	
MEN200801311327331	310469	Matamata	ww_line	Gravity Main	Concrete	225	225	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	11/12/2007	0	KVS	none	
MEN200801311326271	310497	Matamata	ww_line	Gravity Main	Concrete	150	150	Jetted	Customer Report/Request	Blocked Pipe	Clear Blockage and Reinstate	11/12/2007	0	KVS	none	
W3801	310540	Matamata	ww_line	Gravity Main	Earthenware	150	150	Replaced EW Y junction with PVC sealed joint	Customer Report/Request	Broken Pipe	Repair and Reinstate	31/03/2010	0	BicaData	none	

6.10.4 Strategy & Policy Structure



6.10.5 Service Delivery Structure



6.10.6 Operations and Maintenance Strategies

The following sets out the operations and maintenance strategies:

Operations	
Operations	Operational activities will be undertaken in-house (via Kaimai Valley Services) unless specialised advice is required. Staff will be responsible for the determination and optimisation of planned and unplanned works, work methods and maintenance scheduling to achieve the target service standards
Physical Works Monitoring	Audits of work will be carried out to verify compliance with standards
Operation of Utilities	Pumping stations will be operated in terms of defined parameters and standards The operating parameters for wastewater utilities will be set out in operating manuals for each system
Incident management	Effectively respond to and manage incidents to ensure system availability and service continuity, and mitigate adverse effects Maintenance staff and contractors are expected to effectively manage minor incidents. Matamata-Piako District Council Strategy and Policy asset management staff will become involved in serious incidents

Maintenance	
Routine Maintenance	Routine Maintenance will be carried out in terms of defined routine maintenance items and triggers for these activities to be carried out (See Method of Delivery)
Corrective Maintenance	Remedial maintenance will be undertaken as quickly as practically possible to restore an asset to a satisfactory condition after a failure other unsatisfactory condition has been detected
Repairs	The detection and repair of faults causing failure will be undertaken as quickly as practically possible. The fault will be isolated and components repaired or replaced as appropriated and then if warranted the item will be tested to ensure that it meets the relevant standard
Redesign and Modification	Redesign may be necessary if an asset or system does not meet its operational objective. Similarly, modifications may be necessary to improve the operating characteristics. Redesign and modifications will be undertaken in a methodical manner to ensure alternative options are considered and optimum decisions made

Issues and Deficiencies

MPDC managers have signalled that the current management structure for Water and Wastewater services was not appropriate if the risks and issues raised in the Havelock North contamination enquiry are to be adequately addressed. Issues identified are;

- Dispersed management and accountability in the current structures;
- Sub-optimal use of resources and technology;

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- Relationships between the Regional Council, District Health Board Drinking Water Assessors and MPDC staff are under developed;
- Inadequate skill sets or skills training within the teams;
- Historically an inadequate record of equipment maintenance and replacement;
- Lack of follow through on delegated tasks and responsibilities;
- Routine rather than inquisitorial follow up of contamination events or transgressions;
- Limited reporting and Governance oversight regarding quality control and compliance;
- Health and Safety issued need to be consistently applied across both functions;
- Application of professional knowledge and cross team utilisation to improve performance;

It is proposed to appoint a Water and Wastewater Manager who will be responsible for Water and Wastewater Services as a whole, including projects and meeting consent requirements.

6.10.7 Operations and Maintenance Standards

The following standards are applicable to the operation and maintenance of wastewater services:

- The Matamata-Piako District Council Development Manual
- The Matamata-Piako District Council Infrastructure Code of Practice which provides standards for materials and construction of piped wastewater systems (the above two standards will be superseded by the Regional Infrastructure Technical Specification when this is adopted)
- Relevant Resource Consents and the Resource Management Act 1991
- NZTA Guidelines 'Working on the Road'
- Health and Safety Plans
- Electrical Regulations
- Matamata-Piako District Council quality assurance processes, including contract management procedures
- Matamata-Piako District Council Customer Service Standards (including standards for notification of works)
- COPTTM/TCD – Utilities Access to the transport corridor

6.11 Renewal/Replacement Plan

6.11.1 Introduction

Cyclic renewal strategies are intended to provide for the progressive replacement of individual assets that have reached the end of their useful life.

The rate of asset renewal is intended to maintain the overall condition of the asset system at a standard, which reflects its age profile, and ensures that the Community's investment in the District's Water infrastructure is maintained.

The level of expenditure on cyclic asset replacement varies from year to year, reflecting:

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- The age profile of the system
- The condition profile of the system
- The ongoing maintenance demand
- Customer service issues, and
- The differing economic lives of individual assets comprising the overall asset system.

However in practise the costs are smoothed out over a period of time as this helps to smooth out the rates movements predicted in our Financial Strategy and Long Term Plan. This provides more consistency for ratepayers and time to plan budgets.

Full details of the proposed renewal program are included in Section 3.

Cyclic renewal works fall into two categories:

- **Rehabilitation:** Involves the major repair or refurbishment of an existing asset. An example is the relining of an existing pipeline. Rehabilitation produces an extension in the life of an asset. It does not provide for a planned increase in the operating capacity or design loading
- **Renewal:** Does not provide for a planned increase to the operating capacity or design loading. Some minor increase in capacity may result from the process of renewal, but a substantial improvement is needed before system development is considered to have occurred

For the purpose of developing asset renewal programmes the wastewater assets have been separated into “below ground” and “above ground” assets.

“**Below ground**” assets are assets such as buried pipelines which are part of an extensive network, are generally below ground and which cannot readily be inspected (other than by techniques such as excavation and CCTV).

“**Above ground**” assets are assets such as pump stations, which are separately identifiable, generally above ground and which can readily be inspected.

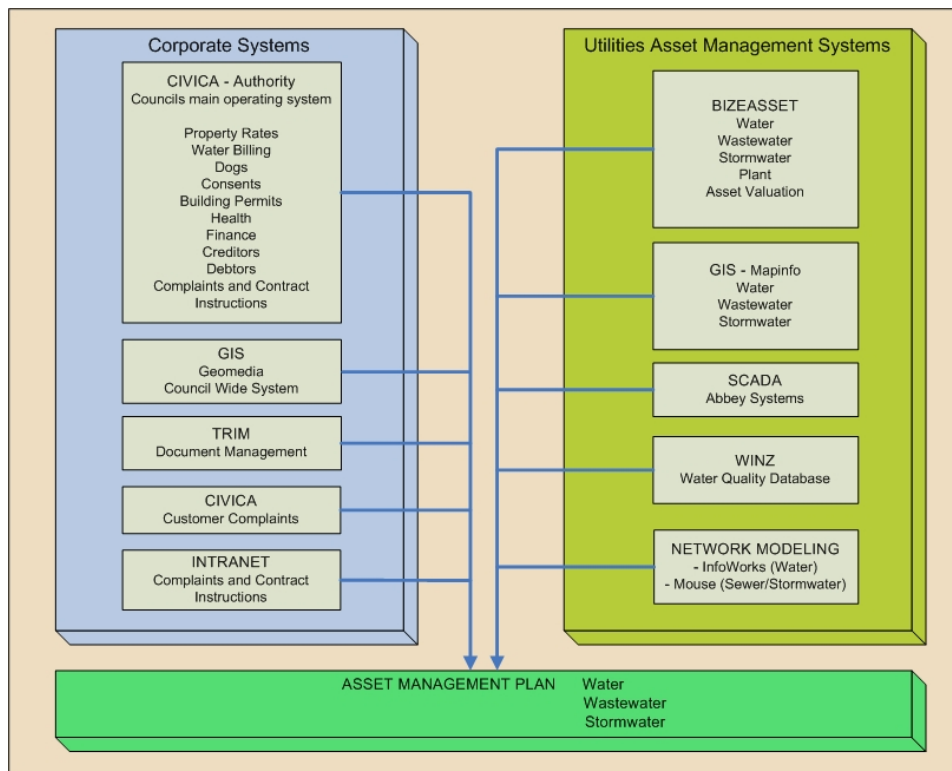
6.12 Renewal Planning

Asset renewal methodology is predominantly based on asset usefull life data recorded in AssetFinda. The condition of above ground assets is regularly monitored and below ground assets are checked whenever they are uncovered for repairs or new connections; and also when they are forecast for replacement. If it is considered they still have remaining life, the new life is entered into the AssetFinda. An AC pipe sampling programme is proposed starting in 2018 to allow more accurate assessment of remaining life. The CCTV assessment programme will also assist with determining a more accurate remaining life. The current practice is to smooth the renewal reticulation programme where it is practical to do so. This is done by allowing for the average renewal requirement over 10 years in the budgets. There are some risks associated with this, but Council does not have a large backlog of work and by placing a criticality on assets it allows us to manage and ‘smooth’ the work out. This allows us to manage resources on an ongoing basis to ensure programmes are delivered on time and on budget.

6.13 Data Systems

The current data systems used within the three waters activities are:

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6.13.1 AssetFinda

The AssetFinda Asset Management system (previously called BIZEASSET) was purchased and implemented by MPDC in 2002, prior to this we had used an access database and spreadsheets.

AssetFinda was selected for the following reasons:

- Ease of use
- Simple functionality
- Low initial fee structure
- Low on-going fee structure

AssetFinda is an Advanced Asset Management tool with many objectives, chief of which is to help reduce whole-of-life costs and improve service delivery.

The system is developed upon Microsoft SQL-Server, with a Web front end, a very strong GIS focus, and a Mobile iPad App for field use. Its tools make viewing, analysing, identifying errors and updating & maintaining our data very easy. It produces a variety of reports that assist in the preparing of our LTP's and AMP's.

The processes are documented in our QA system (Promapp) and auditing is undertaken as part of this process.

These processes require field validation to be entered into the asset register and also the data is regularly updated when errors are noticed in the field.

The building assets associated with the wastewater activity are held in Council's Property Asset Management System (AM) which records their depreciation and replacement life.

The aggregation or disaggregation of data/information can be readily achieved through utilising the 'Query' function in Asset finda; selecting the asset type (water line, plant or point)

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and exporting the asset data to a XLSX file and then using pivot tables to aggregate or disaggregate data.

6.13.2 GIS – MapInfo

We had previously implemented Geomedia as the Councils GIS system but AssetFinda relies on MapInfo therefore the Utilities group (Water, Wastewater and Stormwater) operate a separate GIS system to that of Council only for the purposes for Asset Management.

Plans for reticulation and facilities for the three utilities are entered onto MapInfo as they are received. Where information is received from contractors (Kaimai Valley Services) on the utilities services then MapInfo is updated. Council has a robust system of ensuring that all subdivision plans are of the required standard prior to importing into MapInfo.

The majority of asset quantity, location and pipe size data are held in the GIS system. There are a number of quality assurance processes are used to ensure the reliability of the data recorded.

6.13.3 GIS – Geomedia (Integraph)

We have implemented Integraph Software with Geomedia as its desktop GIS system. All staff have access to WebMap, a web based system with 52 different maps available that interfaces to Civica's AUTHORITY.

The information relating to utilities within MapInfo is updated into Geomedia on a regular basis.

6.13.4 Network Modelling

Network Modelling of the Wastewater systems is undertaken by Mott Macdonald Ltd.

6.13.5 CIVICA

The Council operates CIVICA (Authority Enterprise Software Suite for Local Government) as its Corporate System which includes the customer complaints system.

Council's corporate software system is CIVICA Authority. Authority's Asset Management module (AM) currently holds asset information on Council-owned reserves, buildings (including water buildings), play grounds including skate parks, rubbish bins, and some of the districts protected trees. Authority also has a Strategic Asset Management module, a Capital Value Register, a Property Lease Register, a Work Order module and a Maintenance Scheduling module. These modules and registers all provide a complete asset management system within the corporate system.

Authority's Asset Management module (AM) is the asset register. It contains the asset general data, quantity, base life, remaining life, supplier, unit rates, actual costs, valuation information and condition of the assets. This module links to the following modules, Property, the Capital Value register (CVR), Work Orders, Strategic Asset Management (SAM), Maintenance Scheduling, the Street Register, the Property Lease Register (PLR) and the predefined 'roles' for SAM. Work orders that are linked to assets can be seen against those assets for financial tracking. This module is designed to enable better management of Council's assets with information on assets easy to obtain for staff. Documents can also be linked to assets. Inspections of assets can also be setup through this module linked to the relevant assets.

6.13.6 Infrastructure Data

Council is in the process of implementing the Infrastructure Data system to help better manage council's water and wastewater activities. Two different systems (Outlook and Infrastructure data) sheets plus paper based reporting are currently being used.

6.14 Plant Assets

6.14.1 General

Plant Assets consist of treatment plants, pump stations and resource consents.

6.14.2 Treatment Plants

We operate 5 wastewater treatment plants which have all been upgraded in recent years to comply with significantly increased discharge consent requirements.

The following is a list of our plants and brief details:

WWTP	Treatment	Disposal	Design Flows m ³ /day		Constructed (Year)	Comments
			ADWF	PWWF		
Te Aroha	MBR	Rock filter with final discharge to the Waihou River	1150	7,926	1971 Major upgrade in 2011	The plant was upgraded in 2011 to provide for nitrification as well as organic degradation.
Morrinsville	(SBR), balance pond, tertiary filtration, and UV disinfection SBR discharges sludge to Pond C as a temp. measure	Overland flow via gully discharge with final discharged into the Mangawhero River.	7,000	16,000	1971 Several upgrades since Major upgrade 2010/13	RC allowed addition 1000 for SW ex Pond C in high rain events
Matamata	Conventional oxidation ponds with floating curtains and Aquamat; and Membrane Filtration	Discharge into the Mangawhero River	2,700	4,000	1971 Major upgrade 2011	Evaluating options improving compliance
Waihou	Oxidation Pond followed by trickling filter, clarifier, UV disinfecting	Land spray irrigation in summer; stream in winter	60	300	1985 Major upgrade 2011	Plant only partially complying with consent conditions.
Tahuna	MBR Package Plant	To stream	28	70	2010	

6.14.3 Condition of Treatment Plants

All plants have been upgraded in recent years but some aspects such as membranes require replacement over relatively short time frames.

Some plants also have compliance issues and these are being reviewed and in some cases changes to Resource Consents are being sought.

A brief overview is:

Matamata

Plant upgraded 2010/11 (floating curtains, Aquamats, Membrane filtration)

- Change in requirements for Total Nitrogen have been sought and are subject to monitoring of stream flows which is in hand.
- Plant capacity has been an issue and linked to capacity of membrane filters being below design. Membrane replacement is programmed for 2017/18.
- Aquamats are not performing as designed due to low temperatures in winter.
- Need to de-silt ponds to improve performance.
- Cover required for generator

Morrinsville

The plant has been recently upgraded with the only outstanding issues being the provision of a generator. Treatment staff are currently (May 2017) in the process of sourcing a suitable generator.

There is also a need to follow up on a requirement of the Trade Waste Consents with Fonterra & Greenlea (clause 6.2 Treatment of Historical Bio Mass) “*Within 5 years from effective date, the Council shall commission a report assessing historical sludge levels*” and the effect date means when the plant was commissioned and becomes fully operational, which was 30 April 2013. The report is therefore due 30 April 2018.

Te Aroha

The plant was upgraded in 2011 to provide for nitrification as well as organic degradation and the overall plant consists of a main inlet pump station, screens, membrane bioreactor (MBR) and two ponds. Current issues are

- Need to de-silt ponds – Bio-remediation is being trialled as a method for reducing the amount of silt.
- Potential effects from disposal of leachate from private landfill
- Security issues with proximity of cycleway are being managed by installation of a security gate and cameras.
- The need for a generator – a generator is currently being sourced.
- Need for software upgrade – the upgrade is programmed for 2017-18.

Tahuna

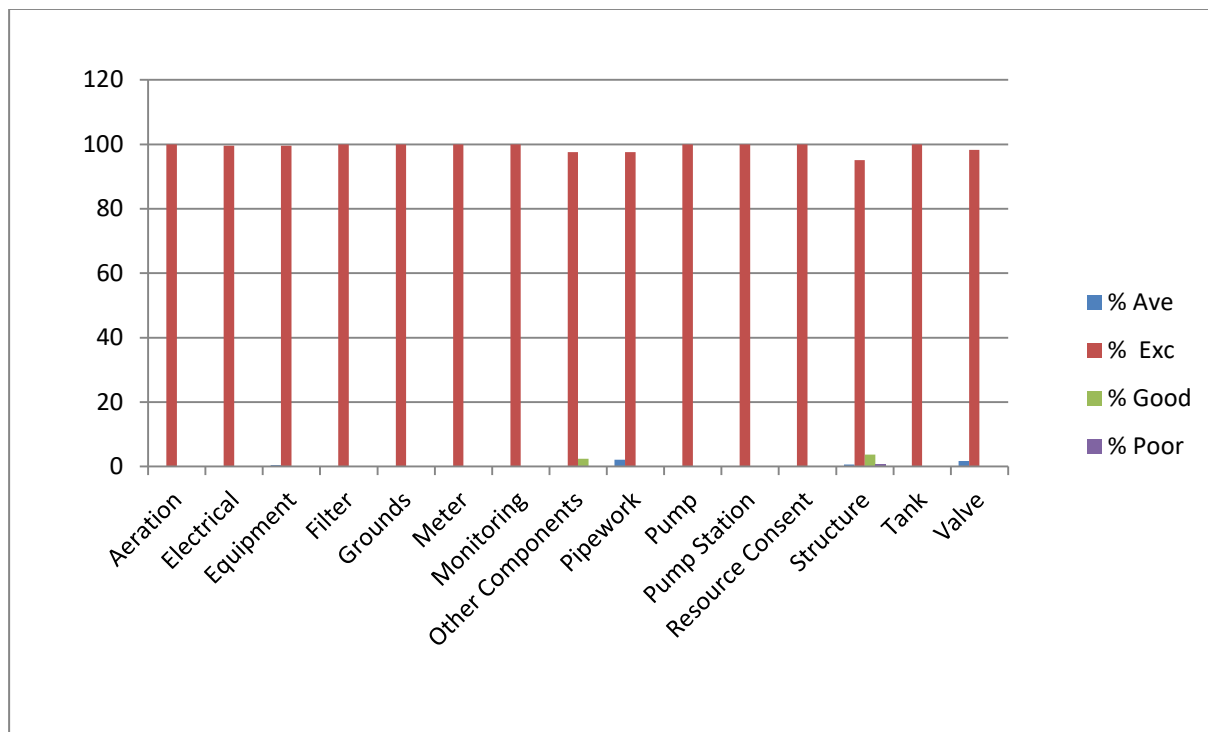
Reasonably new plant with some outstanding issues.

- Security issues with isolation - being managed by installation of a security gate and cameras.
- Lack on monitoring incoming flow rate – propose to install a flow meter and S-can unit 2017-18.
- Need for software upgrade - the upgrade is programmed for 2017-18.

Waihou

This is a reasonably new plant with some outstanding issues relating to performance. The plant does not currently meet resource consent conditions limits for TSS, coliforms and NH₃. The reason for this is attributed to the over-design of the biological trickling filter and the fact that the clarifier is not clarifying because the pond algae is not settling. Options for managing this issue are being developed.

Wastewater Plant Condition as percentage of plant group



6.14.4 Pump Stations

We operate 36 pump stations to pump wastewater from low areas and these range in size from very small stations servicing less than five properties to large stations which are critical and where failure would be significantly detrimental.

These later stations have two or more pumps to provide for both capacities during periods of flows and/or a pump failure but some small pump stations rely on changing the pump rather than duplication.

In many cases there is not the now accepted storage at each pump station for 12 hours at the average daily design flow. This has not led to any overflows and is not considered a significant issue. This issue will be addressed as pump stations are rebuilt.

In two cases (Allen St, Morrinsville and the inlet pump station at Matamata) there are generators which start automatically during power failures. All other stations have plugs to enable the quick connection of a portable generator.

It is proposed to purchase a portable generator as these are not always readily available to hire when needed.

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We also own a large diesel powered stormwater pump normally located in Te Aroha which is only required during high rain events when the Waihou River is at a high level; and this is normally available in emergency situations within the wastewater systems.

6.14.5 Resource Consents

Most resource consents associated with the wastewater activity have been capitalised and provision for their renewal is thus included in the renewal tables and graphs.

However the Tahuna consent was not and this will be added at the next revaluation. However this is a reasonably simple consent and the cost will not be very significant.

The Te Aroha consents have expired but because an application was made for renewal prior to their expiry, the old consents remains in force until the new one are issued.

6.14.6 Plant Asset Replacement Costs (as at December 2017)

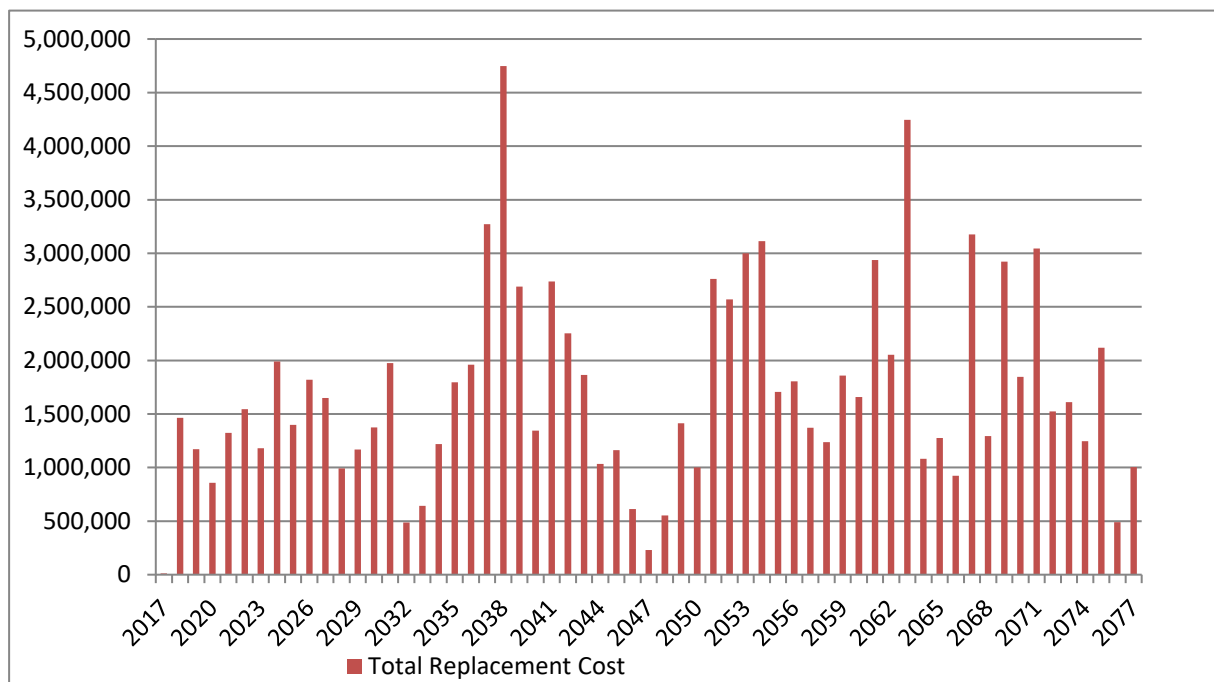
(Source: 1958574)

Year	Total Replacement Cost
2017	13,148
2018	1,462,783
2019	1,172,032
2020	857,402
2021	1,323,346
2022	1,545,425
2023	1,178,746
2024	1,988,586
2025	1,398,781
2026	1,820,403
2027	1,649,799
2028	990,686
2029	1,169,294
2030	1,375,708
2031	1,975,754
2032	486,282
2033	642,791
2034	1,219,223
2035	1,796,783
2036	1,961,467
2037	3,270,801
2038	4,746,876
2039	2,688,984
2040	1,345,734

2041	2,736,032
2042	2,251,814
2043	1,863,568
2044	1,032,876
2045	1,162,814
2046	612,834
2047	229,111
2048	552,111
2049	1,414,626
2050	1,002,149
2051	2,762,105
2052	2,570,779
2053	3,000,092
2054	3,114,347
2055	1,706,446
2056	1,804,362
2057	1,370,217
2058	1,236,312
2059	1,857,609
2060	1,657,391
2061	2,936,790
2062	2,051,505
2063	4,244,480
2064	1,080,438
2065	1,276,269
2066	924,063
2067	3,176,071
2068	1,293,107

2069	2,921,718
2070	1,845,023
2071	3,045,234
2072	1,524,665
2073	1,610,546
2074	1,247,111
2075	2,119,493
2076	491,321
2077	1,004,891

Total Plant Assets
\$40,577,910
(Source: 1960731)



Wastewater Plant Replacement Costs

6.15 Wastewater Reticulation

6.15.1 General

The main purpose of the reticulation system is to take effluent from the customer’s point of discharge (normally property boundary) and transport to treatment plant. The reticulation system is made up of the following components:

- Pipes
- Lateral connections
- Points (Manholes etc)

6.15.2 Wastewater Pipe Materials

The total wastewater reticulation comprises a range of materials with many earlier mains being earthenware with either concrete or rubber ring seals, followed by the use of asbestos cement pipes and more recently by uPVC pipes.

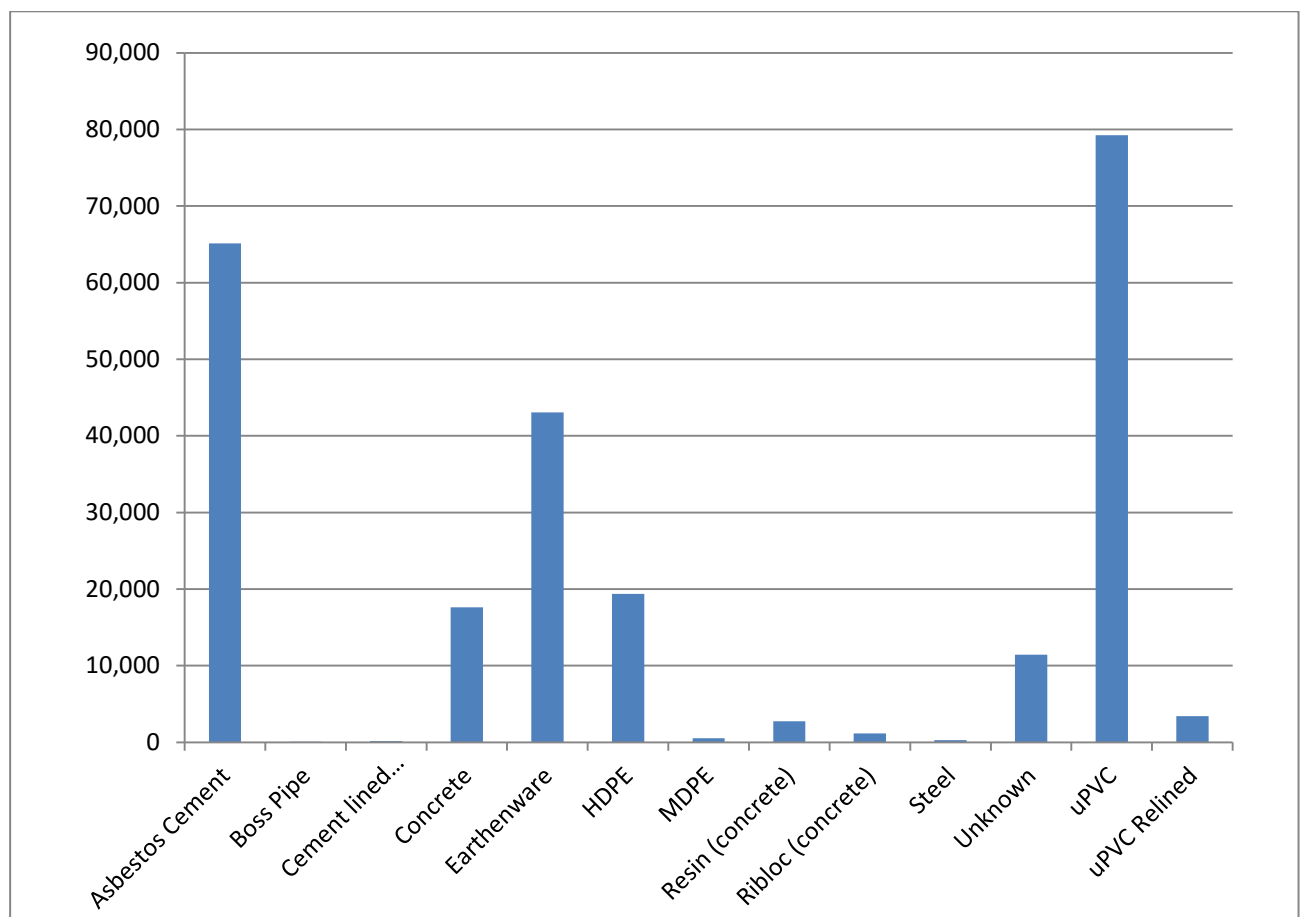
A recent trend has been to line deteriorating earthenware or concrete pipes with a liner of either plastic Ribloc or cured-in-place resin fabric.

Although the material is unknown for 5.0% of the reticulation, this is not considered to be a significant risk as the life of “unknown” pipes are the same as the lowest rated pipe.

Details of the materials in the reticulation are as follows:

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	Length (m)	% of total
Asbestos Cement	65,144	26.7
Boss Pipe	45	0.0
Cement lined steel	133	0.1
Concrete	17,629	7.2
Earthenware	43,078	17.6
HDPE	19,380	7.9
MDPE	515	0.2
Resin (Concrete/Earthenware)	2,749	1.1
Ribloc (Concrete)	1,163	0.5
Steel	275	0.1
Unknown	11,430	4.7
uPVC	79,233	32.4
uPVC Relined	3,427	1.4
Total	244,200	100.0%



Length (m) of various materials in total wastewater reticulation

6.15.3 Wastewater Pipe Remaining Life

We have wastewater pipe assets ranging from new to about 90 years of age.

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Manholes are replaced when the mains are replaced unless they have failed earlier

We have a policy of condition inspection of pipes using both external examination and CCTV prior to confirming the need for renewal.

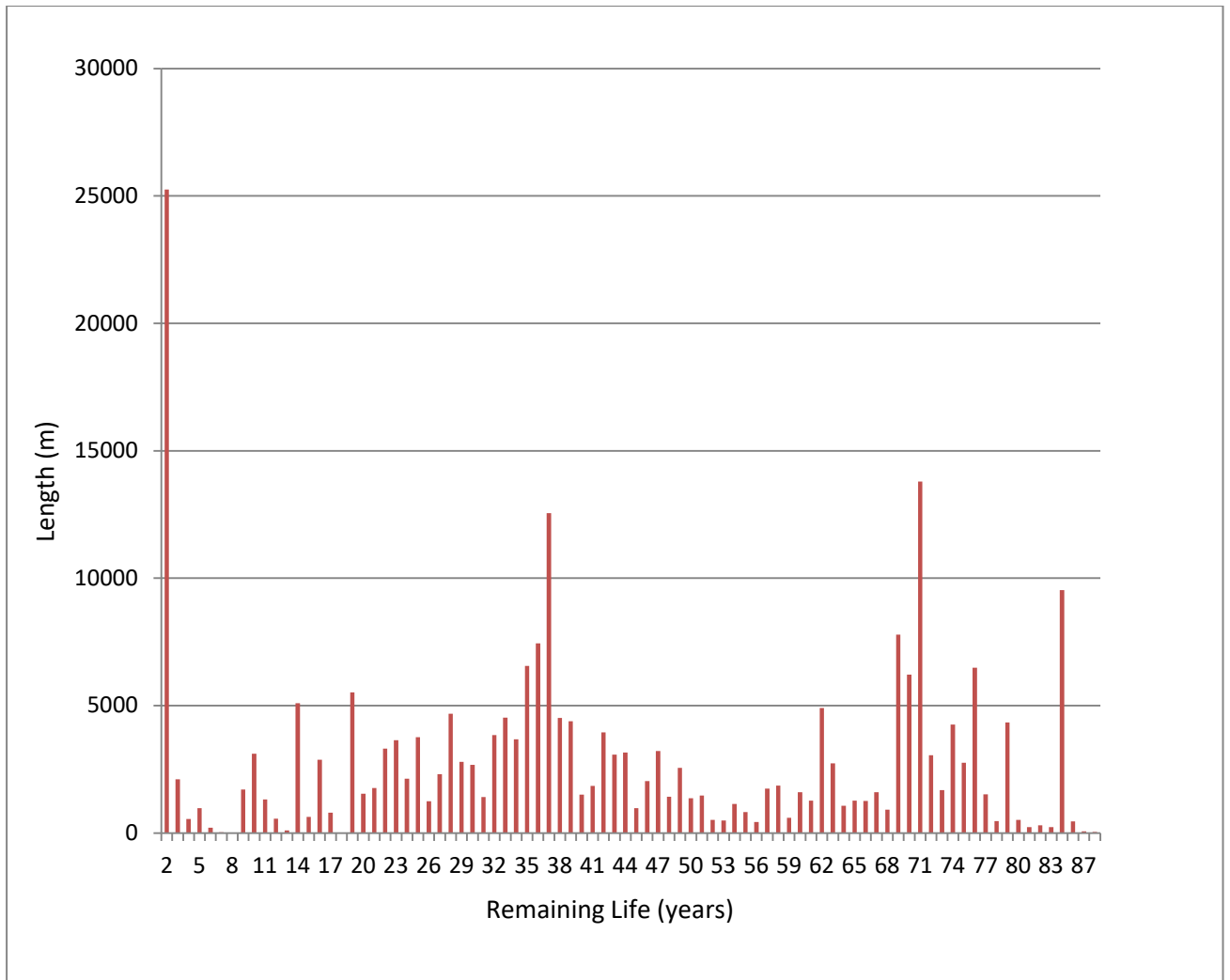
The remaining life of gravity and rising mains as at April 2017 is as follows:

Rem. Life (years)	Length Mains (metres)
1	
2	25256
3	2107
4	555
5	981
6	207
7	32
8	4
9	1705
10	3110
11	1313
12	557
13	101
14	5095
15	631
16	2873
17	803
18	23
19	5523
20	1546
21	1762
22	3310
23	3641
24	2128
25	3755
26	1249
27	2314
28	4684
29	2792

30	2679
31	1415
32	3846
33	4522
34	3681
35	6562
36	7446
37	12555
38	4513
39	4383
40	1510
41	1845
42	3945
43	3072
44	3160
45	969
46	2042
47	3218
48	1425
49	2559
50	1359
51	1472
52	513
53	496
54	1136
55	820
56	428
57	1746
58	1856
59	592
60	1605
61	1269

62	4907
63	2737
64	1066
65	1276
66	1260
67	1605
68	910
69	7786
70	6219
71	13795
72	3056
73	1682
74	4261
75	2757
76	6488
77	1520
78	465
79	4339
80	514
81	231
82	301
83	230
84	9536
85	0
86	452
87	63
88	0
89	0
90	0
91	45

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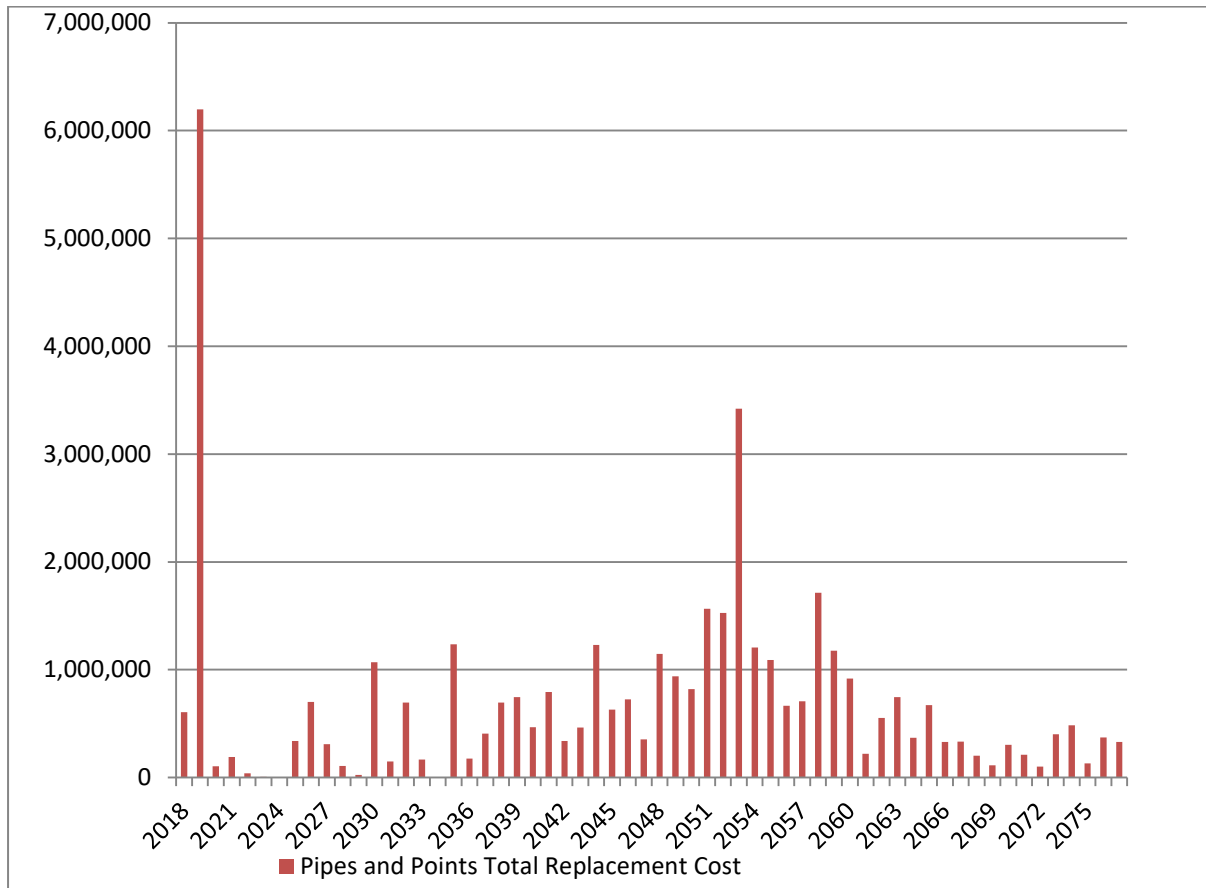
Wastewater Pipes Remaining Life vs Length (metres).

6.15.4 Wastewater Pipe Replacement Cost

Note the replacement cost includes manholes and service lines as these are replaced at the same time as the mains. (Source: RM 1958510)

Year	Pipes and Points Total Replacement Cost
2018	606,703
2019	6,196,743
2020	104,230
2021	191,603
2022	40,421
2023	5,420
2024	798
2025	338,545
2026	702,860
2027	310,081
2028	106,965
2029	24,082
2030	1,068,482
2031	150,409
2032	694,560
2033	167,893
2034	3,874
2035	1,236,712
2036	175,127
2037	406,238
2038	696,488
2039	745,721
2040	467,884
2041	793,532
2042	339,823
2043	463,303
2044	1,230,000
2045	628,820
2046	724,703
2047	353,556
2048	1,147,891
2049	938,173
2050	819,089
2051	1,566,287
2052	1,526,116
2053	3,420,628

2054	1,207,611
2055	1,090,981
2056	666,319
2057	708,798
2058	1,713,179
2059	1,176,059
2060	918,073
2061	220,396
2062	551,819
2063	746,460
2064	368,170
2065	670,794
2066	331,241
2067	331,976
2068	201,550
2069	114,994
2070	303,094
2071	211,918
2072	102,579
2073	402,945
2074	485,439
2075	130,272
2076	371,375
2077	331,637



Pipe System Replacement Costs

Total Replacement cost of pipe assets is \$60,234,582 (Source: RM 1960731)

6.15.5 Condition of Reticulation

The condition of the reticulation system varies with the various schemes. Te Aroha is subject to higher infiltration rates that can indicate a poor condition.

The modelling of the Morrinsville reticulation for dry and wet weather flows indicated that the catchment is generally in poor condition.

However it is believed that much of this infiltration originates within private properties from defective pipes and low gully traps and a programme of testing is dealing with this issue

We are actively undertaking condition assessments of our reticulation using CCTV and especially for assets approaching scheduled renewal. This is resulting in some renewals being deferred and the pipes given an extended life.

6.15.6 Performance of Reticulation

We are maintaining network models of the reticulations in the three main towns and these are updated on a regular basis.

Section 6: Lifecycle Management

All schemes have some issues during high rain events and some flows are diverted to the river in Te Aroha during high rain events under provisions in our stormwater consents. There is also one overflow in Morrinsville.

These overflows are largely stormwater and occur when the receiving waters also have high flows.

The sources of these high flows is largely from three sources – infiltration through faulty joints and damaged pipes; overtopping of low gully traps in high rain events and from owners directing stormwater direct into the wastewater system.

We have a program of inspections using smoke testing and other means to identify these faults and to ensure they are remedied.

A fourth source in Te Aroha results from the periodic discharge of large quantities of backwash water from the water treatment plant. This discharge also causes silting up of a flattish section of pipeline in the vicinity of Herries Park.

This is being addressed by a planned upgrading of backwash treatment at the plant – although from a wastewater treatment perspective this waste is beneficial to treatment process.

6.16 Service Connections (Laterals)

6.16.1 General

We are responsible for the service connection from the wastewater main to the property when the main is within a road reserve. The property owner is responsible for the lateral from the house to the Council main when the main is not on road reserve or Council property.

We have a policy of replacing the laterals when the mains are renewed so that there is less importance on ascertain the installation dates and /or expected life.

6.16.2 Condition

The condition of laterals both within a property and in the road can contribute to major water infiltration that can cause major capacity effects i.e. sewerage overflows and exceeding WWTP capacities.

In particular mortar jointed earthenware pipes are prone to infiltration

6.16.3 Performance and Capacity

Laterals normally perform very well but the earthenware laterals with mortar joints or rubber rings/sleeves are very prone to ingress of tree roots and associated blockage. Property owners are responsible from the connection on their property. Council maintains up to the property boundary.

However when a blockage in the section of lateral maintained by the Council is not caused by the condition of lateral, the property owner is responsible for the cost. This is because the cause of the blockage must originate from the property serviced.

6.17 Wastewater Buildings

The building assets are held in Council's Property Asset Management System which records their depreciation and replacement life.

A brief summary of the wastewater buildings and optimised replacement cost as at December 2017 as valued by SPN Asset Systems is:

Wastewater Buildings	Optimised Replacement Cost
Allen St Pump Station - CCB Shed	\$26,000
Allen St Pump Station - CCB Shed with WC	\$32,500
Matamata T.P. - Main Building - CCB with Office 1st Floor (Refurb 2010)	\$91,000
Matamata T.P. - New Building 2010 Freezer Panel with CC Basement	\$63,000
Morrinsville Wastewater Treatment Plant - Blower Room	\$16,900
Morrinsville Wastewater Treatment Plant - Decant Balance Pond Pump Shed	\$14,700
Morrinsville Wastewater Treatment Plant - Electrical Control Building	\$55,000
Morrinsville Wastewater Treatment Plant - Main Building - CCB rebuilt circa 2006	\$84,500
Morrinsville Wastewater Treatment Plant - Office Building - new 26 July 2013	\$58,500
Morrinsville Wastewater Treatment Plant - Pump House	\$65,000
Morrinsville Wastewater Treatment Plant - Sludge Dewatering System Building	\$136,500
Tahuna Wastewater Treatment Plant - Plant Building	\$13,000
Te Aroha Wastewater Treatment Plant - Control Building on top of Tank Structure	\$39,000
Te Aroha Wastewater Treatment Plant - Soda Ash Building	\$82,939
Te Aroha Wastewater Treatment Plant - Treatment Tank Structure	\$130,000
Waihou Wastewater Treatment Plant - Plant Room	\$5,200
Total	\$913,739

6.18 Trade Waste

The purpose of the Trade Waste Bylaw is to manage the discharge of wastewater (Quantity and Quality) into Council's wastewater system, so that the integrity of the pipe network is protected, the treatment process is not compromised to ensure that the discharge of treated wastewater into the environment complies with its resource consents.

The Trade Waste Bylaw also allows Council to levy additional charges on users where they require additional services such as handling of additional quantity or quality of wastewater.

Most trade waste is discharged through the reticulation system but leachate from the Tirohia Landfill is currently trucked to holding tanks at the Te Aroha WWTP and slowly dispersed into the incoming flows.

The Trade Waste Bylaw (was updated in 2011 and a copy is available on Council's website).

6.19 Septage Disposal

The MPDC operates a Septage disposal system at the Morrinsville WWTP, to manage septic tank and grease trap waste within the district.

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This plant was installed in 2007 and has a design capacity of 60m³/hour. There are a number of issues to be addressed around vehicle access and the ability to handle all incoming septage. The mechanically-ranked bar screen at the plant is nearing the end of useful life (renewal due 2021) and with regular maintenance issues occurring may need to be replaced sooner. The plant is under Health and Safety investigation after recent safety incidents involving operators.

Previously we also accepted septage at Matamata into a dedicated pond but this had to be closed because of consent issues. There are currently on-going discussions with WRC over how to restore the site.

6.20 Biosolids

We generate wastewater sludge (biosolids) at all our treatment plants and currently these are stored in ponds, either as part of the treatment process (Matamata & Waihou) or through the discharge of waste activated sludge (WAS) to ponds (Morrinsville, Te Aroha and Tahuna). The latter is transported to Morrinsville.

There are also large quantities of partially digested sludge in the ponds which will require periodic dredging, dewatering and disposal.

It was intended to upgrade the Morrinsville WWTP to include a sludge dewatering facility but such plants are expensive to operate. We are therefore currently investigating an alternative option of bioremediation and trials are currently in hand.

6.21 Wastewater General

6.21.1 Environmental Monitoring and Reporting

Monitoring requirements associated with our wastewater consents is carried out and provided to Waikato Regional Council as required. Council staff (KVS) undertake the sampling and laboratory work. Hills Laboratory is used for emergencies as required.

This will help to ensure consistent sampling as required for the consent conditions and will enable the Council to identify trends associated with the results

6.21.2 Consent Compliance

We hold a significant number of resource consents to operate our wastewater systems and the details of these are included in the sections on the individual schemes later in this document.

The conditions of these resource consents require us to provide the Waikato Regional Council with detailed information on various aspects of our discharges in particular and these are forwarded monthly in digital form.

Section 6: Lifecycle Management

Annual reports are also required and these are audited by WRC. The reports are prepared by David Ray, Consultant Environmental Engineer. The outcomes for the past two years are as follows:

	2012 - 13	2013 - 14	2014 - 15	2015 - 16
Matamata	Partial compliance			Partial compliance
Morrinsville	High level of compliance			High level of compliance
Te Aroha	Full compliance			Partial compliance
Tahuna	High level of compliance			High level of compliance
Waihou	Partial compliance	Partial compliance		Partial compliance

7. Risk Management

Infrastructure risk management is the process of identifying risks that may affect the ongoing delivery of services from infrastructure.

7.1 Council's Risk Management Policy

Purpose

The purpose of this policy is to support and promote risk management as an integral part of the Council's internal controls and Corporate Governance

Risk Management Standard and Framework

This policy is based on ISO 31000:2009 and is supported by the Risk Management Standard and Framework as applied to Local Government.

Principles

The following principles provide the foundation for Risk Management

Risk Management:

- creates and adds value
- is an integrated part of all organisational processes
- helps good decision making
- explicitly addresses uncertainty
- is systematic, structured and timely
- based on the best available information
- tailored to the MPDC context
- considers human and cultural factors
- is dynamic, iterative and responsive to change
- Supports and contributes to continuous improvement

Roles and Responsibilities

This policy addresses the need to appropriately manage risk at all levels, including the implementation and maintenance processes and ensuring adequacy, effectiveness and efficiency of controls.

Elected Members and Council

Governance is the system of accountability to stakeholders whereby Elected Representatives ensure the principles and policies of the Local Authority are carried out and performance against these is measured. In accordance with this system Council has a significant role to play in ensuring the integrity and transparency of Risk Management and risk auditing at the highest level.

Risk Committee

A Risk Management Committee would provide a Strategic Monitoring role within the Local Authority. The Committee may be freestanding or be combined to form a Risk Management, Internal Audit and Health and Safety Committee.

For the Risk Management functions it would consider:

- Approval of Risk Management policies and programmes as a rolling programme over a period of years.
- Review of Risk Management programme

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- Receiving Risk Management reports on the outcomes of the activities and comparison to the Risk Management programme
- Ensuring that
 - Internal review
 - Risk management strategies
 - Risk Management policies are established, in place and current.

The Chief Executive and Executive Management Team

The Executive Management team:

- review the risk register at quarterly intervals and ensure compliance
- Understand and support Risk Management and risk ownership as it affects their areas of responsibility.
- Ensure compliance with Risk assessment procedures including reviewing of registers, development of risk activities and providing feedback for internal audit processes.
- Annual review the policy for continued relevance and appropriateness.

Management

All managers and team leaders across MPDC are required to understand and apply the risk management framework to their areas of operational responsibility, to ensure that MPDC's objectives are achieved.

Each unit Manager is responsible for:

- Ensuring Risk Management is applied in their environment and maintaining their sections of the risk register accordingly.
- Promoting risk management to their staff
- Appointing risk owners
- Taking the required action to identify and disclose new risks and uncertainties.
- Working with Risk Management Coordinator to monitor, identify and report on risk through the appropriate mechanisms.

Staff

Every staff member has a responsibility to participate in the identification, mitigation and management of risks. All staff are required to understand and apply the risk management framework to their areas of responsibility, to ensure Council's objectives are achieved.

Each staff member is responsible for

- Participating in Risk management through Health & Safety, Asset Management, Civil Defence, Emergency Management and Business Continuity procedures
- Taking prudent action to identify, evaluate, mitigate and manage Risks as appropriate.

Staff will be appointed as Risk Owners for specific risks within their area of responsibility. They will be responsible for ensuring that:

- Risk Information is kept up to date and relevant
- Ensuring mitigating action is carried out
- Reviewing risk and updating the risk registers.

Risk Management Coordinator (*If Appointed*)

This position could be created to support the delivery of Risk Management Services to MPDC from within the Council structure.

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The Risk Management Coordinator will:

- Provide a knowledge base for risk management and identify good practice standards and guidelines.
- Manage the MPDC risk registers and report regularly to Council on the state of the Risk Management processes
- Coordinate the communications, training, education and initiatives for Risk Management across Council
- Facilitate Risk Management in terms of LTP, Annual Plan, Business Plans and programmes of work

It is not the responsibility of the Risk Management Coordinator to identify risks, or to manage mitigation of identified risks but to coordinate the work of those responsible.

Monitoring Risk

Each risk owner is responsible for ensuring that the risks that have been identified and allocated to them are regularly monitored to ensure that they are being managed effectively and adequately. Monitoring of risk will form part of each Managers daily business responsibilities. In addition there will be requirements for Internal Audits and facilitated reviews of Risk associated with the work of the groups.

Reporting on Risk

A report on the overall Risk Profile for MPDC will be provided to the e-team on a quarterly basis and form the base of the report to Council. Other reports on Risk Management will be produced as required.

Link to Other Quality Assurance Programmes

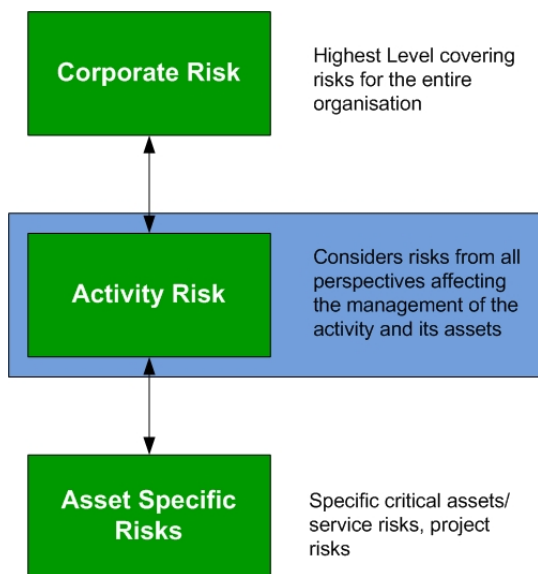
The role of Risk Management falls within a wider model which when applied in an integrated way provides Total Quality Assurance to the e-team and Council. Examples of specific activities that combine aspects of quality assurance and risk management are:

Activity and Asset Management Planning allows for the review of external and internal risks, as incorporated into the Activity Plans.

Internal Audit is responsible for the annual review of the effectiveness of Council's internal control systems. Internal Audit can identify gaps or performance improvement opportunities related to risk mitigation controls and strategies.

Business Continuity is the process whereby systems and procedures are put in place to ensure that if any risk eventuates the Council is able to respond to, and recover in the shortest time possible with minimal disruption to Council services.

Risk Hierarchy Levels



Risk Assessment Matrix

	Consequence				
Likelihood	Minor (1)	Moderate (2)	Significant (3)	Major (4)	Catastrophic (5)
Almost Certain (5)	Significant	Significant	Major	Catastrophic	Catastrophic
Likely (4)	Moderate	Significant	Major	Major	Catastrophic
Moderate (3)	Moderate	Significant	Significant	Major	Catastrophic
Unlikely (2)	Minor	Moderate	Significant	Significant	Major
Rare (1)	Minor	Minor	Moderate	Moderate	Significant

Comparative Levels of Risk

Catastrophic Risk	Risk treatment Strategies to be implemented by the E-team and actions taken, reported to the Risk Coordinator and to Council for their Confirmation
Major Risk	Risk treatment Strategies to be implemented by the E-team and actions taken, reported to the Risk Coordinator and to Council for their Confirmation
Significant Risk	Risk Treatment Strategies to be implemented by the Activity Managers and Departmental Heads and actions reported to the Risk Management team
Moderate Risk	Risks generally acceptable to be managed under the normal risk Identification and Control procedures
Minor Risk	Risks generally acceptable to be managed under the normal risk Identification and Control procedures Examine where un-needed action can be reduced

7.2 Critical Assets

Critical assets are regarded as those assets which have the highest consequences should they fail. Failure of these assets would likely result in a significant disruption in service and financial, environment and social cost in terms of impact on organisational objectives. A simple approach has been taken in this plan applying broad assumptions about the implications of failure using a number of criteria to make an overall assessment of high, medium or low criticality.

The criteria used for assessing criticality for the Wastewater Activity are as follows:

- Number of people adversely affected;
- Significant business activity interrupted;
- Consequential cost of failure; and
- Critical lifeline/disaster recovery asset e.g. wastewater disposal for schools and hospitals.

Critical assets are considered those assets in which failure would result in a major disruption to the wastewater system or levels of service. Critical wastewater activity assets and provisions for resilience are presented below:

Asset	Description	Criticality	Resilience Provision – 30 year horizon
Matamata			
T/P Inlet P/S	Pump station pumps all sewage into T/P	5	Routine inspections and maintenance. Monitoring via SCADA system.
Domain P/S	Pump station services all Waharoa	5	Routine inspections and maintenance. Monitoring via SCADA system.
Waharoa Rd East P/S	Pump station in Matamata receives all Waharoa and services part Matamata	5	Routine inspections and maintenance. Monitoring via SCADA system.
Trunk Main	Waharoa East Rd to Treatment Plant	5	
Morrinsville			
Allen St P/S	Pump station services all of Morrinsville Township	5	Routine inspections and maintenance. Monitoring via SCADA system.
Rising Main	Connects Allen St P/S to T/P under Piako River	5	
Treatment Plant	Less storage capacity than other plants	5	Routine inspections and maintenance. Monitoring via SCADA system.

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Trunk Mains	Golf Course to Allen St P/S; Studholme St to Allen St P/S	5	
Te Aroha			
Terminus P/S	Pump station services East side of Te Aroha	5	Routine inspections and maintenance. Monitoring via SCADA system.
College P/S	Pump station services SW side of Te Aroha	5	Routine inspections and maintenance. Monitoring via SCADA system.
Falling Main	Gravity main along ex railway conveys all sewage to T/P	5	The condition of the trunk main is being evaluated in 2017/18 and renewal is forecast for 2019/20.
Trunk Main	College P/S to falling main as above	5	The section of the main crossing the Waihou River is programmed to be re-aligned under the river in 2018/19. Renewal of the balance of the main is proposed to coincide with this work.

Critical assets as above are identified with a high level of confidence and criticality of all assets is used in the selection of renewal projects

Asset criticality is shown in the Asset Register (Assetfinda) for individual assets and data on these assets can be aggregated or dis-aggregated in the same way as other data. The screen print below shows a section of the asset register with the criticality column highlighted.

#	Asset_ID	Short_ID	Category	Asset_Type	MATERIAL	DIAMETER	HEIGHT	Community	Quantity	Length	Install_Date	Unit_Cost	Base_Life	Condition	Performance	Accuracy	Criticality	US_Invert	DS_Invert	US_Book	DS_Book
	10040	1776	None	Gravity Main	uPVC	150	150	Te Aroha	94.52	1/07/1987		\$191.71	80	Good	Excellent	Excellent	Very High	0.00	0.00	10037	10038
	10041	1777	None	Gravity Main	uPVC	150	150	Te Aroha	38.03	1/07/1987		\$191.71	80	Good	Excellent	Excellent	Very High	0.00	0.00	10038	10039
	10042	1778	None	Gravity Main	uPVC	150	150	Te Aroha	113.43	1/07/1987		\$191.71	80	Good	Excellent	Excellent	Very High	0.00	0.00	10039	10039
	10043	1779	None	Gravity Main	uPVC	150	150	Te Aroha	70.23	1/07/1987		\$191.71	80	Good	Excellent	Excellent	Very High	0.00	0.00	10039	10035
	10044	1780	None	Gravity Main	uPVC	150	150	Te Aroha	90.22	1/07/1987		\$191.71	80	Good	Excellent	Excellent	Very High	0.00	0.00	10034	10035
	10130	1781	None	Gravity Main	Asbestos Cement	100	100	Te Aroha	70.60	1/07/1971		\$167.21	60	Average	Excellent	Excellent	Very High	0.00	0.00	60148	10147
	10131	1782	None	Gravity Main	Asbestos Cement	150	150	Te Aroha	176.04	1/07/1971		\$191.71	60	Average	Excellent	Excellent	Very High	0.00	0.00	10147	10146
	10134	1783	None	Gravity Main	Asbestos Cement	150	150	Te Aroha	75.26	1/07/1971		\$191.71	60	Average	Excellent	Excellent	Very High	0.00	0.00	10146	10152
	10138	1784	None	Gravity Main	Asbestos Cement	150	150	Te Aroha	99.97	1/07/1971		\$191.71	60	Average	Excellent	Excellent	Very High	0.00	0.00	10152	10155
	10139	1785	None	Gravity Main	Unknown	100	100	Te Aroha	45.35	1/07/1959		\$167.21	60	Very Poor	Excellent	Excellent	Very High	0.00	0.00	60146	10140
	10161	1786	None	Gravity Main	Unknown	100	100	Te Aroha	26.06	1/07/1959		\$167.21	60	Very Poor	Excellent	Excellent	Very High	0.00	0.00	60145	10140
	10163	1787	None	Gravity Main	Unknown	150	150	Te Aroha	67.88	1/07/1959		\$191.71	60	Very Poor	Excellent	Excellent	Very High	0.00	0.00	10140	10143
	10164	1788	None	Gravity Main	Unknown	150	150	Te Aroha	23.90	1/07/1959		\$191.71	60	Very Poor	Excellent	Excellent	Very High	0.00	0.00	10143	10144
	10165	1789	None	Gravity Main	Earthenware	150	150	Te Aroha	67.30	1/07/1959		\$191.71	80	Average	Excellent	Excellent	Very High	0.00	0.00	10144	10145
	10166	1790	None	Gravity Main	Earthenware	150	150	Te Aroha	73.69	1/07/1965		\$191.71	80	Average	Excellent	Excellent	Very High	0.00	0.00	10155	10156
	10167	1791	None	Gravity Main	Earthenware	150	150	Te Aroha	114.68	1/07/1965		\$191.71	80	Average	Excellent	Excellent	Very High	0.00	0.00	10156	10157
	10168	1792	None	Gravity Main	Asbestos Cement	150	150	Te Aroha	51.41	1/07/1975		\$191.71	60	Average	Excellent	Excellent	Very High	0.00	0.00	10128	10129

7.3 Insurance

7.3.1 Overview

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Corporate insurance is currently the responsibility of the Kaimai Consultants Manager.

Council currently holds the following types of insurance policy:

- Public liability
- Employer liability
- Business interruption
- Material damage
- Vehicles

MPDC joined the Waikato Local Authority Shared Services (LASS) which engaged the broker services of AON Insurance. AON purchases insurance on behalf of the Waikato LASS. This arrangement has resulted in significant cost savings on premiums.

7.3.2 Legislative Requirements in Relation to Insurance

Clause 31A of Schedule 10 to the Local Government Act 2002 now requires that the Annual Report must state the following, as at the end of the financial year:

- (a) the total value of all assets of the local authority that are covered by insurance contracts, and the maximum amount to which they are insured
- (b) the total value of all assets of the local authority that are covered by financial risk sharing arrangements, and the maximum amount available to the local authority under those arrangements
- (c) the total value of all assets of the local authority that are self-insured, and the value of any fund maintained by the local authority for that purpose.

The asset database (AM) and valuation data hold information on the assets. Section 6.3 explains the asset database and management systems in more detail.

7.3.3 The Effect of Insurance Arrangements on the Activity

The first \$10,000 of any claim is now paid out of the operating budget. Council is therefore essentially self-insured to the value of \$10,000. The LASS is investigating the potential for individual councils to reduce the excess for specified items/activities by paying special premiums.

Buildings and facilities are insured through AON. Riskpool currently insures below ground services.

As from 1 July 2017 Riskpool (which is a mutual fund) will cease to exist. AON (brokers) are currently pursuing market options on behalf of the Waikato LASS for below ground services.

Indications are that as far as earthquake-prone buildings are concerned, insurers will only pay out up to 33%, not total replacement cost. This may have implications for a number of potentially earthquake-prone buildings.

Total value of assets covered by insurance contracts, financial risk sharing arrangements, self-insurance arrangements is presented in the table below.

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The following relates to Council as at 30 June 2016

June 2015		June 2016
\$000		\$000
187,300	The total value of all Council assets covered by insurance contracts	144,814
125,000	- Fire	125,000
150,000	- Other natural disasters	150,000
187,300	The total value of all assets covered by financial risk sharing arrangements	211,309
30,000	Maximum amount available to the Council under financial risk sharing arrangements	30,000

In the event of natural disaster, central government may contribute up to 60% towards the restoration of water, stormwater and wastewater assets, and provide a subsidy towards restoration of roads.

7.4 Risk Register

The Council's Risk Register is currently being set up to cover Corporate, Strategic and Operations Risks.

The top ten risks for the wastewater activity have been identified as:

1. Lack of Skilled Contractor Resources
2. Failure to deliver on projects and programs
3. Non-compliance with legislation and legal requirements
4. Ineffective strategic planning (internal)
5. Inadequate contract management (network maintenance and operations)
6. Wastewater treatment plant failure
7. Moderate Natural Hazards – (minor earthquake/landslips/ major storm event)
Inability to minimize effects
8. Diminishing Funding Allocation
9. Network capacity failure
10. Inadequate contract management (capital works)

7.5 Activity Risk Management

7.5.1 Approach for the Activity

Risk assessments at the activity level focus on risks associated with management of the activity and the enabling infrastructure. Activity risk assessment considers risks identified at both the corporate and the operational level.

Risk management planning has been used to identify the potential and actual business risks associated with the provision and management of the Council's water assets and services. The process has been applied to prioritise mitigation programmes.

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The following are the general risks associated with Corporate, Strategic and Operational aspects of the utility operations:

Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Lack of Skilled Staff Resources</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Inability to attract key staff Inability to retain skilled staff <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Operational loss Financial costs Poor (or no) decision making 	Operational Financial / Economic Reputation / Image	5	4	Catastrophic	<ul style="list-style-type: none"> Proximity of Hamilton, subsidised transport District promotion (Work-life balance) Dedicated HR staff and policies e.g. Personal Development Programmes, Benchmarking) Benchmarked salary levels (low compared to other councils) Annual staff surveys to highlight issues 	Poor	3	5	Major	<ul style="list-style-type: none"> Implementation of training and sharing Further Incorporation of Operations staff into major projects More focus on succession planning
<p>Loss of knowledge (information)</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Inability to retain knowledge Insufficient/inappropriate systems in place to manage data/information, especially regarding asset performance and condition, and consent compliance Loss of institutional knowledge (staff turnover) Loss of knowledge of where to find information <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Operational loss Financial costs 	Financial / Economic Operational Reputation/ Image Legislative	3	5		Significant	<ul style="list-style-type: none"> Asset changes/updates (AssetFinda) – Information currently provided by KVS, contractors, KC, consultants and developers Asset database (AssetFinda) in place (off site) with backups Condition surveys undertaken and some programmed IT practices (backup, virus, security etc.) Plans scanned and microfilmed, filed electronically, but issues with searchability Processes for updating vested assets and new capital works into Asset database in conjunction with KC, consultant via MPDC Regulatory Manager is responsible for debrief of staff (exit process) 	Fair	2		2

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Net Risk			Management Options	
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood		Factor
<p>Failure to deliver on projects and programs</p> <p><i>Caused By:</i></p> <ul style="list-style-type: none"> Lack of training or qualified staff Lack of project planning or systems Projects inadequately scoped, budgeted, managed, documented, and reviewed Insufficient input to LTP (financial) Lack of resources Lack of ownership, change of leadership <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Time & cost blowouts Lack of quality outcomes Loss of service level Over/under spending of budgets 	Operational Reputation /Image Financial / Economic Health and Safety Environmental Legislative	5	5	Catastrophic	<ul style="list-style-type: none"> External consultant manages consenting process at planning stage. Staff experienced in project management Asset Management/Annual Plan/LTP Process defined Corporate processes and systems in place Key / strategic projects are reported to E-Team via Asset manager reports, but not formalised Use of experienced and skilled staff Use of trained external resources / specialists Appropriate resources (e.g. software/information systems) Monitor consultants quality of work, reporting requirements written into some contracts 	Fair to Good	4	3	Major	<ul style="list-style-type: none"> Implement Project Management Training for key staff Review and improve Corporate processes and systems in place Communication Planning – stakeholder and media management Post project debriefs, Post implementation reviews Processes to clearly identify project timeline and timing Reporting procedures for measuring performance External reviews and audits e.g. peer reviews
<p>Inadequate contract management (network maintenance and operations)</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Inadequate documents Inadequate management of contractors <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Poor contractor performance and outputs Interruption to services Failure to meet legislative requirements Additional costs Excessive deterioration of assets 	Operational Financial / Economic Reputation/Image Health and Safety	5	4	Catastrophic	<ul style="list-style-type: none"> Service Level agreement (SLA) in place Contract Procedures Manual Procurement manual KC manage SLA SLA conditions (KPI's, penalties) in place but not fully applied Contractor training and certification Public notification,public feedback (CRM) Financial reporting by Asset Manager and through to E-Team, who provides monthly reporting to Council Procedures for KVS to complete asset update requirements via KC Standard operating procedures and codes of practice 	Good	1	3	Significant	<ul style="list-style-type: none"> Monitor customer feedback and trends Review and improve SLA Review and improve auditing procedures Improved KPIs / performance measures Training staff in SLA management, and subcontract management

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Inadequate contract management (capital works)</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Inadequate documents Inadequate selection, availability of contractor Inadequate management of contractors <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Poor quality assets constructed and/or vested Increased operational expenditure costs Interruption to services Failure to meet legislative requirements Additional costs and time overruns Reduced lifespan (early deterioration) of assets 	Operational Financial / Economic Reputation/ Image Health and Safety	4	4	Major	<ul style="list-style-type: none"> Contract procurement process and manuals (MPDC) - Contractors selected by attributes Contracts managed by MPDC staff and external consultants Contract conditions (KPI's) in documentation Relevant contractor training and certification, built into contract Some staff training in contract management Financial reporting to Council – quarterly (after first 6 months) Asset Manager to CEO monthly Liaison with other utilities (power, telecommunications) B4U Dig Project Management System being introduced 	Fair to Good	4	3	Significant	<ul style="list-style-type: none"> Training staff handling CRM Monitor customer feedback and trends Review and improve Contracts Review and improve auditing procedures Improved KPIs / performance measures Training staff in Contract management
<p>Inadequate asset management – not up to date, or insufficient quality of process and output.</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Lack of AM knowledge and practice Lack of staff knowledge and training Lack of resources Inadequate communication of issues and strategic planning <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Loss of service level - decline in integrity and service capacity of assets Suboptimal lifecycle cost Insufficient depreciation funding Inability to cater for growth Failure to meet LTP commitments and service levels 	Operational Legislative Financial / Economic	4	4	Major	<ul style="list-style-type: none"> Asset Management processes and practices Asset Information Systems (AssetFinda / GIS) – managed by Records Officer LTP, Annual Plan processes Asset Management Plan - Improvement Plan – driven by Utilities Manager Ongoing external review Ongoing budget provision Ongoing input from internal and external consultants 	Good	3	3	Significant	<ul style="list-style-type: none"> Implement actions from Asset Management Appropriate Practice Plan

Section 7: Risk Management

Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies		Net Risk			Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
<p>Non-compliance with legislation and legal requirements</p> <p><i>Caused By:</i></p> <ul style="list-style-type: none"> Lack of awareness e.g. changes in legislation not identified Lack of funding Legislative changes increases statutory obligations Disputes with regulatory authorities <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Compromised health, safety and environment Legal action and resulting costs and consequences Poor public image 	Legislative Financial / Economic Reputation / Image Environmental Public Health	5	5	Catastrophic	<ul style="list-style-type: none"> Council policies and procedures in place New Zealand drinking water standards Water Safety Plans (WSPs) Compliance monitoring Staff training and development (some certification) Use of external advice/resources Standard templates and written Council procedures Management of resource consents Waste management and minimisation plan soon to be adopted 	Fair to Good	3	4	Major	<ul style="list-style-type: none"> Further identification of relevant legislation Implementation of legislative and policy requirements PHRMP improvement actions Further awareness and training in requirements
<p>Natural Hazards –Inability to minimize effects</p> <p><i>Caused By:</i></p> <ul style="list-style-type: none"> Strategic information is inadequately protected Internal and external risks not adequately identified Inadequate understanding of staff of disaster recover procedures Inadequate documentation to support recovery process <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Inability to respond to, or effectively manage and recover from disaster or emergency Compromised ability to operate business under normal conditions Damage to infrastructural assets, loss of service 	Environmental Public Health Operational Financial / Economic	4	4	Major	<ul style="list-style-type: none"> Dedicated Council Emergency Management Manager Council Emergency Response Procedures in place Contingency Plans in Utilities procedures manual Civil Defence organisation in place. Civil Defence, actively involved in Lifelines IT procedures for backup, storage (i.e. water supply customer base) Customer (CRM) feedback SLA / Incident management plans i.e. stock requirements Critical assets identified for networks, maintenance regime based around these. 	Fair	4	4	Major	<ul style="list-style-type: none"> Further involvement of Utilities with Civil Defence and the Lifelines process, Review and update Contingency Plans in procedures manual Investigate communication options Check that critical assets identified for networks, maintenance regime based around these. Utilities and front counter staff training in disaster recovery

Section 7: Risk Management

Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies		Net Risk			Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
<p>Lack of Political Alignment, or inability of elected members to fulfil roles and responsibilities or disregard for community/staff views.</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Lack of communication with elected members Lack of understanding from elected members Undue influence from lobby groups / national politics Politicians with private agenda <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Essential services under-resourced Decisions made on political grounds ahead of defensible decision making 	Operational Reputation/Image	4	3	Major	<ul style="list-style-type: none"> Councillors roles well defined and implemented Legislative requirements/ LTP process Reporting to Council and Community boards Councillor induction/ handbook Councillor briefings / workshops CEO giving advice to Councillors Councillors and community board members on 'Working Parties' 	Good	2	3	Significant	<ul style="list-style-type: none"> Continue to manage process through CEO / workshops
<p>External Economic Influences</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Cost Escalations (e.g. due to oil price increases, economic failures). Uncontrollable movements in economy e.g. exchange rates, prices of local products Local loss of economy (e.g. Silver Fern Farms) <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Financial impact cost of services Inability to provide services, maintain service levels or achieve community outcomes 	Financial / Economic		5	Significant	<ul style="list-style-type: none"> Local government networking. Track national and global trends. Monitor key economic developments and liaise with central government Stockpiling / bulk purchasing 	Poor	2	5	Significant	<ul style="list-style-type: none"> Investigate economic viability of metering Demand reduction measures / Managing LoS expectations Optimise efficiencies Smart procurement practices events Use of materials from local sources Investigating alternative construction / maintenance options

Section 7: Risk Management

Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies		Net Risk			Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
<p>Inability to utilise funding options</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Lack of staff training / resources Lack of awareness of funding sources Slow decision making Organisational or process deficiencies <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Funding not realised Loss of service levels 	Operational Financial / Economic Reputation/ Image	4	4	Major	<ul style="list-style-type: none"> Asset management process, depreciation funding Prioritising projects/ LTP and Annual Plan process Experienced staff managing development contributions, projecting costs, submitting any available external applications and reporting internally to Council. Local industry contributions 	Good	2	2	Moderate	<ul style="list-style-type: none"> Forecast likely scenarios regarding effects of budget changes including deferrals Waste management funding opportunities to be developed
<p>Diminishing Funding Allocation</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Decreased rates, charges, development contribution charges Insufficient external funding secured <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Projects unable to proceed Inability to provide services, maintain service levels or achieve community outcomes 	Operational Financial / Economic	4	4	Major	<ul style="list-style-type: none"> Development contributions policy and enforcement Asset management process, depreciation funding Prioritising projects/ LTP process and Annual Plan process. Current practices and strategies for rates funding through LTP process (funding policy) Experienced staff managing development contributions, projecting costs, submitting any available external applications and reporting internally to Council. Staff Knowledge and awareness 	Good	3	5	Major	<ul style="list-style-type: none"> Forecast likely scenarios regarding effects of budget changes including deferrals Quantifying Levels of Service in LTP Escalate issues to higher levels e.g. Lobbying Central Government
<p>Ineffective strategic planning (internal)</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Lack of integration between the different arms of Council pursuing objectives that are at odds with each other. <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Eventual loss of service levels Funding loss 	Operational Financial / Economic Reputation / Image	5	5	Catastrophic	<ul style="list-style-type: none"> Some communication between Corporate Planning and Utilities. Consultation within organisation on long term planning (improved from previous) Early and ongoing consultation with prospective developers LTP process AMP process and updating Community Boards and Councillors Current organisation wide input to district plan review 	Fair	4	3	Major	<ul style="list-style-type: none"> More inclusive involvement in District Plan changes Improved working relationship with Strategic Planners

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies		Net Risk			Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
<p>Service Level Agreements not met or non-existent – between Utilities and other parties internal or external.</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> lack of monitoring requirements lack of SLA <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Affects timing and quality of delivery of services 	Operational Financial / Economic	2	2	Moderate	<ul style="list-style-type: none"> Interim SLAs with KVS, KC, Planner Intermittent meetings with other Council departments, relationship based (no perceived need for SLA) 	Good	2	2	Moderate	<ul style="list-style-type: none"> Finalise SLAs and improve methods to monitor and manage SLA Better definition of roles and responsibilities within SLAs Review if additional SLA's are required
<p>Inadequate Communications and PR Management</p> <p><i>Caused by:</i></p> <ul style="list-style-type: none"> Poor communication e Inadequate strategic planning Ineffective consultation Historic perception of expectations <p><i>Consequences:</i></p> <ul style="list-style-type: none"> Increased costs Poor relations between council and community Negative publicity and reputation 	Reputation/ Image Operational Financial / Economic	3	2	Significant	<ul style="list-style-type: none"> Established customer driven culture across council Communications plan being developed for key projects Timely communication to affected customers (public/ratepayers, councillors, staff, contractors) Customer service interface (CRM) 	Good	2	2	Moderate	<ul style="list-style-type: none"> Ensure good number of people trained to present at public meetings

7.5.2 Specific Operational Risks to the Wastewater Activity

The following are specific operational risks and mitigation measures associated with our water activity:

Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Network break or blockage</p> <p>Caused by:</p> <ul style="list-style-type: none"> • Lack of maintenance • Third party damage • Inappropriate discharge • Asset deterioration • Poor design and construction • Lack of accessibility • Gas buildup <p>Consequences:</p> <ul style="list-style-type: none"> • Sewage leaks or overflows • Environmental contamination • Potential infection of, or injury to, public • Contamination of water supply 	Operational Environmental Public Health Reputation / Image Economic	3	4	Major	<ul style="list-style-type: none"> • Maintenance contract includes response times (key performance criteria) and carrying of spares, access to GIS data • Preventive maintenance e.g. programmed flushing • Policies – wastewater and trade waste • Inspection work undertaken with aim of developing renewal programme (upgrades, replacement and rehabilitation) • Regular needs-based CCTV inspections and inflow/infiltration inspections and follow up • Use of external professional services and contractors • Public feedback/ monitoring of complaints via CRM • Asset data system, initiated data collection through contractor (AssetFinda) • Some flow monitoring • SCADA, telemetry monitoring (at major pump stations) • Wastewater and tradewaste bylaws/policies - including buildovers • Renewal programme (upgrades, replacement and rehabilitation) • Asset Management Plan • Development contribution policy • Designed overflows in most cases (minimise effects on sensitive receiving environments) 	Good	2	3	Significant	<ul style="list-style-type: none"> • Improve inspection of pipe bridges • Implement MPDC Infrastructure Manual

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Power failure resulting in overflows: Power outage of 3 hours</p> <p>Caused by:</p> <ul style="list-style-type: none"> • Intermittent power supply • Power surges • Vandalism <p>Consequences:</p> <ul style="list-style-type: none"> • Sewage leaks or overflows • Environmental contamination • Potential infection of, or injury to public 	Operational Environmental Public Health Reputation / Image	2	4	Significant	<ul style="list-style-type: none"> • SCADA monitoring, UPS at all pump stations • Maintenance contract with response within service level timeframe. After hours service. • Telemetry indicates phase fail. Battery backup for telemetry to allow response time • Some storage at pump stations, 6 hours for newer/upgraded stations, and reticulation storage • Facility to connect backup generator at all pump stations, some generators, or hired as needed, one fuel tanker available • Availability of sucker trucks • Relationships with power companies (notification of outages and backup options) 	Good	1	2	Minor	<ul style="list-style-type: none"> • Continue current practice • Ensure better access to generators (considering event may result in demand) • Ensure fuel available for generators

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Net Risk			Management Options	
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood		Factor
<p>Wastewater treatment plant failure</p> <p>Caused by:</p> <ul style="list-style-type: none"> Internal biological failure Power failure Incorrect operation, maintenance and monitoring Poor design and construction System shock due to influent Asset deterioration Cliff erosion <p>Consequences:</p> <ul style="list-style-type: none"> Discharge of untreated sewage Sewage leaks or overflows Environmental contamination Potential infection of, or injury to public or staff Discharge conditions breached 	Operational Environmental Public Health Reputation/Image Legislative	4	5	Catastrophic	<ul style="list-style-type: none"> Discharge consents and monitoring Employ qualified WWTP operators (in house) Some operating procedures and practices Electrical maintenance contract including response times (key performance criteria) and carrying of spares Facility to connect backup generator at all WWTPs, some generators, or hired as needed, one fuel tanker available Mechanical maintenance contractors available on request (good industry based personnel) Some preventive maintenance Wastewater and trade waste policies Recent upgrades, reactive renewals, further upgrades planned Public feedback/ monitoring of complaints, CRM SCADA, telemetry monitoring Flow monitoring Overflow storage Asset management process, planned renewals and upgrades Conduct HAZOPS with wide variety of inputs 	Good	3	2	Significant	<ul style="list-style-type: none"> Improvements to Tahuna WWTP, and other upgrades Ensure better access to generators (considering event may result in demand) Ensure fuel available for generators Implement preventive maintenance programme More real time monitoring of biological plant Continued monitoring of trade waste

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Pump station failure</p> <p>Caused by:</p> <ul style="list-style-type: none"> • Failure of pumps, pipework or structure • Lack of maintenance • Inadequate operation • Asset deterioration • Lack of capacity • Poor design and construction • Vandalism <p>Consequences:</p> <ul style="list-style-type: none"> • Sewage leaks or overflows • Environmental contamination • Potential infection of, or injury to public and staff • Network consent conditions breached 	Operational Environmental Public Health Reputation/Image Legislative	2	4	Significant	<ul style="list-style-type: none"> • SCADA monitoring, UPS at all pump stations • Maintenance contract with response within service level timeframe. After hours service. • Telemetry indicates phase fail. Battery backup for telemetry to allow response time • Some storage at pump stations, 6 hours for newer/upgraded stations, and reticulation storage • Facility to connect backup generator at all pump stations, some generators, or hired as needed, one fuel tanker available • Availability of sucker trucks • Relationships with power companies (notification of outages and backup options) • Duty and standby (alternate)/ backup pumps at most stations • Inspection programme (in house) • Incident Action Plan • Operations manuals for some stations (not up-to-date) • Reactive preventive maintenance, asset management planning for renewal programme (upgrades, replacement and rehabilitation) • Wastewater and trade waste policies • Public feedback/ monitoring of complaints, CRM • Draft Infrastructure Code of Practice and consent processes for new / vested assets. Standardised pumps and components • Conduct HAZOPS with wide variety of inputs 	Good	1	2	Minor	<ul style="list-style-type: none"> • Continue to review need to upgrade to duty / standby (some will only need duty only) • Review operations manuals for availability, currency, and develop system for continual update • Complete upgrade of switchboards, pumps etc. • Review increase of onsite storage

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Risk Descriptor	Risk Type	Gross Risk			Current Practices/Strategies	Effectiveness	Net Risk			Management Options
		Consequence	Likelihood	Factor	Description		Consequence	Likelihood	Factor	
<p>Odours from system</p> <p>Caused by:</p> <ul style="list-style-type: none"> Inability to contain or treat odours Inadequate operation Unforeseen loading or conditions Poor planning, location, design or construction <p>Consequences:</p> <ul style="list-style-type: none"> Complaints Negative public image Network consent conditions breached (WWTP) 	Environmental/ Reputation/ Image Legislative	1	5	Significant	<ul style="list-style-type: none"> Air discharge consents for treatment plants Chemical treatment if plant fails Operating procedures and practices Maintenance staff respond within specified timeframe Professional services Public complaints/ feedback, CRM, consultation Upgrades to WWTPs and network e.g. upgrade of biofilters (Morrinsville) for inlet works and dewatering Often placed in isolated locations 	Fair	1	2	Minor	<ul style="list-style-type: none"> Improve some vents where corrosion is resulting Consider buffer zones around treatment plants Implement wind monitoring at WWTPs
<p>Network capacity failure</p> <p>Caused by:</p> <ul style="list-style-type: none"> Failure of network to cope with capacity from flows (sewage, inflow and infiltration) Poor design and construction Lack of planning Location <p>Consequences:</p> <ul style="list-style-type: none"> Sewage leaks or overflows Environmental contamination Potential infection of, or injury to public Network consent conditions breached Inability to treat volume / type of wastes 	Operational Environmental Public Health Reputation / Image Financial / Economic	3	5	Major	<ul style="list-style-type: none"> Awareness of problem area Inflow/Infiltration investigations, direct inflow (private drainage) survey – dedicated contractor Network modelling Professional services (KC and external) MPDC Planning managing development, subdivision control Maintenance staff to respond within specified timeframes to minimise consequences e.g. overflows Regular needs-based CCTV inspections and inflow/infiltration inspections and follow up Wastewater and trade waste policy e.g. volumetric charges – financial incentives to reduce capacity requirement Minimal Utilities Involvement in Strategic District Planning Development contributions policy 	Fair	3	4	Major	<ul style="list-style-type: none"> Influence and improve communication and process for development control with MPDC Planning Increase Utilities Involvement in Strategic District Planning Step up I/I investigation and remediation

7.6 Resilience of Infrastructure to Natural Disaster

7.6.1 Introduction

The NZ LGA requires Councils to provide for the resilience of infrastructure assets. 'High-impact, low probability' disaster events are occurring more often, with 2011 being the most expensive year in history in terms of economic losses.

7.6.2 Resilience

The National Infrastructure Unit defines resilient infrastructure as infrastructure that is able to deal with significant disruption and changing circumstances. This may be due to natural hazards and shock events or events which evolve over time such as changing demographics. However, this plan is largely focussed on being able to provide essential services following a high consequence event such as a natural disaster. Resilience of critical assets is particularly important for continuation of service delivery. Both technical and organisational aspects of resilience have been considered in this plan as summarised in the table below:

Dimension	Attribute	Definition
Technical	Robustness/ Resistance	The strength, or the ability of elements, systems, and systems, and other units of analysis, to withstand a given level of stress or demand without suffering degradation or loss of function.
	Redundancy	The extent to which elements, system, or other infrastructure units exist that are substitutable, i.e. capable of satisfying functional requirements in the event of disruption, degradation, or loss of functionality.
	Reliability	The extent to which the infrastructure components are inherently designed to operate under a range of conditions and hence mitigate damage or loss from an event
Organisational	Preparedness ,Response and Recovery	The capacity to mobilize resources when conditions exist that threaten to disrupt some element or system to maintain service and enable a fast and effective response to and recovery from disruptive events.

7.6.3 Infrastructure Strategy

Section 101B of the Local Government Act 2002 Amendment Act 2014 outlines the requirements of the Infrastructure Strategy. In particular the following requirements are observed:

The infrastructure strategy must outline how the local authority intends to manage its infrastructure assets including providing for the resilience of infrastructure assets by identifying and managing risks relating to natural hazards and by making appropriate financial provision for those risks.

7.7 The Role of the activity as a Lifeline Utility

Lifelines are the essential 'utility' services which support the life of our community and are defined in Schedule one of the Civil Defence Emergency Management Act 2002. These services include Wastewater, Stormwater, Water, Power, Gas, Telecommunications and Transportation networks.

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The CDEM Act requires all lifeline utility operators to ensure they are able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency. This is best achieved through the formation of lifeline utility projects - voluntary groups of 'lifeline utility' organisations with representatives from territorial authorities, major utility and transportation sector organisations.

The Waikato Lifelines Utilities Group (WLUG) which Matamata-Piako DC is a member of is a voluntary group of engineering lifelines organisations. It has representatives from the Waikato region's territorial authorities and major energy, telecommunications, and transportation sector organisations.

Its mission statement is “*Enhancing the connectivity of lifeline utility organisations across agency and sector boundaries in order to improve infrastructure resilience*”.

The WLUG aims to:

- encourage and support the work of all participants in identifying and mitigating the effects of hazards on lifeline utility assets and business operations
- facilitate communication between all participants in order to increase awareness and understanding of each organisations' interdependencies
- create and maintain awareness of the role and importance of lifeline utilities within the Waikato region
- promote ongoing research and technology transfer aimed at protecting and preserving lifeline utilities of the Waikato region
- develop best approaches to mitigation, preparedness and recovery measures for lifeline utilities.

7.8 Civil Defence Emergency Management

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups.

Matamata-Piako District is part of a Waikato Region-wide Civil Defence Emergency Management Group, (EMG). Hamilton City Council staff administers this group with the main Group Emergency Operating Centre also based in Hamilton. The three territorial Authorities of Thames-Coromandel, Hauraki and Matamata-Piako have agreed to unite for the purposes of maintaining an emergency operating area.

The Waikato EMG is responsible for all matters involving staff training, general Civil Defence public awareness and maintaining contact lists for schools, pre-schools, rest-homes and the like. Each Local Authority maintains its own contacts for local resources.

Matamata-Piako District is generally sheltered from most natural disasters, although there is an ever-present risk of flooding given its proximity to the Waitoa and Waihou Rivers. Wind, is another danger for Matamata-Piako District with several high wind events hitting the area in recent years.

7.9 Procedures in Place for Rapid and Structured Response to Emergency Failures

We have emergency response plans in place for the major treatment plants and plans are being prepared for the smaller plants. The requirements for these plans are under the HSNO Act which sets the requirement trigger points on the basis of the chemicals stored and used. Emergency Response Plans are still being developed for the smaller treatment plants.

We are consistently testing and refining these plans, and intended to augment our planning by putting in place emergency response plans to manage the effects of significant infrastructure failure.

Emergency Action Plans are kept at all Council water facilities and cover procedures for:

- Water Contamination Incident;
- Fire, Police and Ambulance;
- Emergency Evacuation;
- Fire/Gas leak/ Chemical spill;
- Aggressive/ threatening behaviour;
- Bomb threat; and
- Natural disaster.

In the unlikely event of a natural disaster that could affect both the networks and water treatment plant our first priority is to protect the health and safety of the community. We will then restore the service (albeit limited), where possible protect the environment and then source long term infrastructure solutions to return to a normal level of service.

7.10 Business Continuity

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning after (and ideally, during) a disaster, rather than simply being able to recover after a disaster.

Business Continuity Plans have been completed for the water, wastewater and solid waste activities.

7.11 Succession Planning

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on, and assists in ensuring continuity of organisational culture.

Council has set up processes to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

Staff retention still remains a key issue due to a technical/professional shortage worldwide, a methodology for managing this risk has yet to be resolved formally but the following steps have been implemented in the interim:

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- Regular reviews of pay parity
- Management of individual professional development
- Work enjoyment and flexibility
- Management of individual workloads

7.12 Health and Safety

The Health and Safety Team ensures the responsibilities under the Health and Safety at Work Act 2015 (HSWA) are met. Regular safety training is provided to staff and induction processes have been established for contractors and consultants working on Council sites. Council contracts and tenders require HSWA compliance.

Under the HSW Act 2015 everybody is responsible for their own actions including safety, and the safety of others, and that their action or inaction does not cause any harm. Council is serious about its responsibilities for the health and safety of all Contractors while on any Council work site. We aim to keep people free from harm and we expect all Contractors to take the necessary precautions to ensure all work is carried out safely.

The underlying principles to working on site are:

- Avoidance of workplace accidents and illnesses
- Incidents, injuries, occupational illnesses and environmental damage are unacceptable
- Employees have the right to stop their own work and that of others if they believe it is unsafe to continue
- The establishment of active site health and safety committees is promoted

All Contractors must pre-qualify with regard to health and safety prior to being engaged for any work. The Waikato and Bay of Plenty Councils have teamed up with SHE Software NZ Ltd to develop a new streamlined pre-qualification procedure. The system is made available to all councils throughout NZ to pre-qualify contractors. This will ensure councils are using contractors who operate with effective health and safety management systems and are holding current and relevant insurances. A contractor's approval status is valid for two years and they are then required to provide updated copies of the documentation to ensure ongoing maintenance of their Health and Safety systems.

Community groups doing voluntary work for the council also have to be approved and have undergone a briefing of the health and safety information. Volunteers are required to undergo volunteer induction training before doing volunteer work such as track maintenance.

8. Financials

8.1 Overview

Our financial policies ensure our activities are managed prudently and promote transparency and certainty for the community. The policies and financial planning are intended to help achieve the Community outcomes.

The Local Government Act 2002 (Part 6 Subpart 3) requires local authorities to manage their finances “prudently and in a manner that promotes the current and future interests of the community. This implies compliance with applicable Financial Reporting Standards, which include New Zealand equivalents to International Financial reporting Standards (NZ IFRS).

In determining how activities will be funded local authorities are required to take the following into consideration:

- The contribution to the achievement of Community Outcomes (strategic alignment)
- Beneficiaries of each activity (beneficiary/user pays principles)
- The period over which benefits from the activity will occur (intergenerational equity issues)
- The extent to which identifiable individuals contribute to the need to incur expenditure (exacerbator and user pays principles)
- The costs and benefits of funding the activity compared to other activities (cost/benefit, prioritisation principles)
- The impact of funding the activity on the wellbeing of the community (ability to pay principles)

This Activity Plan provides the basis for meeting these requirements.

8.2 How We Fund Our Activities

Council’s Revenue and Financing Policy states the basis on which it will fund all activities

Operations

Operations will be funded from targeted rates

Capital

Capital and Renewals expenditure will be funded from the following sources

- Depreciation
- Loans (either internal or external)
- Development/Financial contributions
- Private or Community contributions
- Government Subsidies (where applicable);

8.2.1 Processes to Enable Depreciation Calculation

The depreciation calculation requires knowledge of the useful life of the asset and the cost of renewing the asset. Useful life is determined through considering the accepted industry lifespan for that type of asset (e.g AC pipe) and factoring in any observed deterioration (through repairs or sampling) or new connections.

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The condition of above ground assets is regularly monitored and below ground assets are checked whenever they are uncovered for repairs or new connections; and also when they are forecast for replacement. If it is considered they still have remaining life, the new life is entered into the AssetFinda. An AC pipe sampling programme is proposed starting in 2018 to allow more accurate assessment of remaining life.

8.3 Financial Statements and Projections

8.3.1 Cash Flow Forecasts

The renewals and capital expenditure financial summaries in this Asset Management Plan cover a 30-year planning horizon and are based on financial projections covering the lifecycles of the assets.

The following graphs summarise the financial forecast for the Wastewater Activity under the following headings:

- Operational Expenditure
- Renewals
- Capital
- Asset Management Costs

8.3.2 Projected Operational Costs (no allowance for inflation)

The graph shows our projected operating cost of the wastewater activity (excluding asset management costs) for the next 10 years. This is based on the assumption that our levels of service will not change.

(Source: 1960609)

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Operations	2016-17 Actual	2017-18 Annual Plan	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
District Non Routine Costs	\$65,796	164,788	164,788	164,788	164,788	164,788	164,788	164,788	164,788	164,788	164,788	164,788
District Wastewater Suspense	\$9,845	100,000	190,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
	\$75,641	264,788	354,788	264,788	264,788	264,788	264,788	264,788	264,788	264,788	264,788	264,788
Matamata Pump Station Operating Cost	\$63,206	59,995	61,995	61,995	61,995	61,995	61,995	61,995	61,995	61,995	61,995	61,995
Matamata Retic Costs	\$41,285	45,840	45,840	45,840	45,840	45,840	45,840	45,840	45,840	45,840	45,840	45,840
Matamata WWTP Costs	\$561,620	535,303	535,303	535,303	535,303	535,303	535,303	535,303	535,303	535,303	535,303	535,303
	\$666,112	641,138	643,138	643,138	643,138	643,138	643,138	643,138	643,138	643,138	643,138	643,138
Morrinsville Pump Station Operating Cost	\$72,984	75,820	75,820	75,820	83,820	83,820	83,820	83,820	83,820	83,820	83,820	83,820
Morrinsville Retic Costs	\$57,275	46,866	46,866	46,866	46,866	46,866	46,866	46,866	46,866	46,866	46,866	46,866
Morrinsville WWTP Costs	\$1,091,439	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802	1,113,802
	\$1,221,697	1,236,488	1,236,488	1,236,488	1,244,488	1,244,488	1,244,488	1,244,488	1,244,488	1,244,488	1,244,488	1,244,488
Tahuna Retic Costs	\$194	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Tahuna WWTP Costs	\$107,683	98,329	98,329	98,329	98,329	98,329	98,329	98,329	98,329	98,329	98,329	98,329
	\$107,877	100,829	100,829	100,829	100,829	100,829	100,829	100,829	100,829	100,829	100,829	100,829
Te Aroha WWTP Costs (Non WO)	\$0	440	440	440	440	440	440	440	440	440	440	440

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Te Aroha Pumpstation Operating Expenses	\$86,578	76,300	76,300	76,300	81,300	81,300	81,300	81,300	81,300	81,300	81,300	81,300
Te Aroha Retic Costs	\$65,087	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500
Te Aroha WWTP Costs	\$687,447	603,199	748,199	748,199	748,199	818,199	748,199	748,199	748,199	748,199	748,199	748,199
	\$839,113	727,439	872,439	872,439	877,439	947,439	877,439	877,439	877,439	877,439	877,439	877,439
Waihou Pumpstation Operating Cost	\$8,396	15,180	15,180	15,180	15,180	15,180	15,180	15,180	15,180	15,180	15,180	15,180
Waihou Retic Costs	\$0	1,895	1,895	1,895	1,895	1,895	1,895	1,895	1,895	1,895	1,895	1,895
Waihou Treatment Plant Costs	\$93,757	80,824	130,824	80,824	80,824	80,824	130,824	80,824	80,824	80,824	80,824	80,824
	\$102,153	97,899	147,899	97,899	97,899	97,899	147,899	97,899	97,899	97,899	97,899	97,899
	\$3,012,592	3,068,581	3,355,581	3,215,581	3,228,581	3,298,581	3,278,581	3,228,581	3,228,581	3,228,581	3,228,581	3,228,581

(Source: RM 1960609)

Section 8: Financials

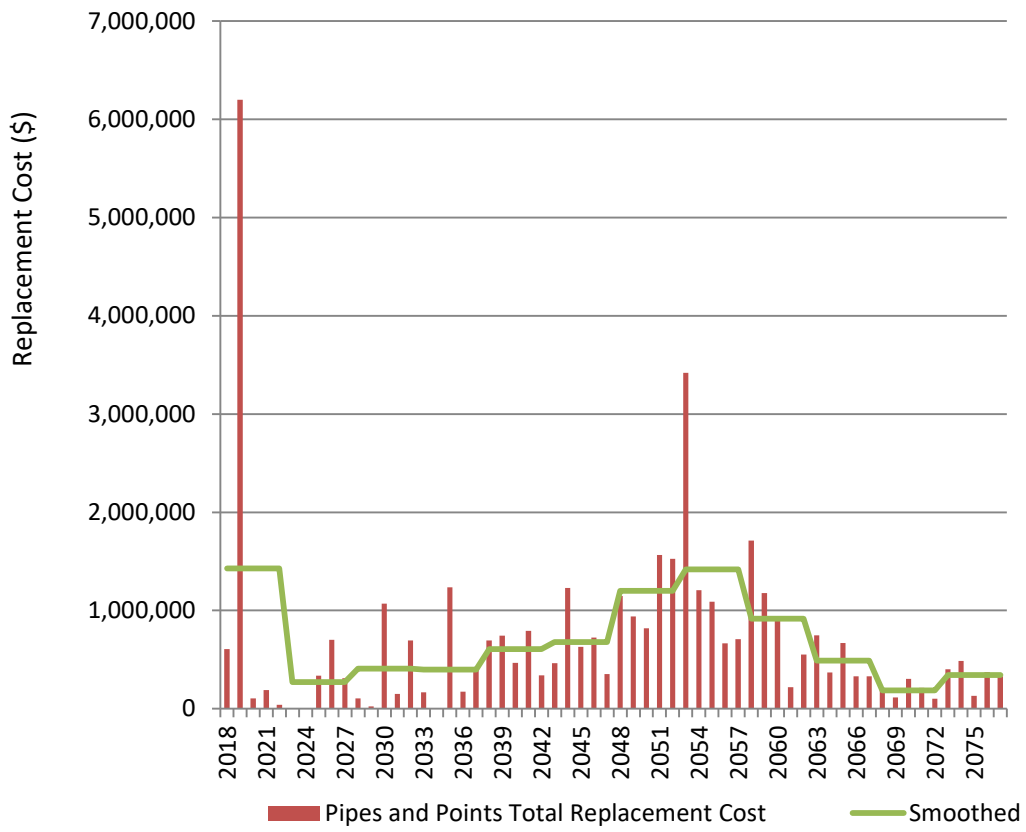
8.3.3 Projected Line and Points (Reticulation) Renewal Costs (no allowance for inflation)

(Source: RM1958510)

Year	Pipes and Points Total Replacement Cost	Smoothed
2018	606,703	1,427,940
2019	6,196,743	1,427,940
2020	104,230	1,427,940
2021	191,603	1,427,940
2022	40,421	1,427,940
2023	5,420	271,541
2024	798	271,541
2025	338,545	271,541
2026	702,860	271,541
2027	310,081	271,541
2028	106,965	408,900
2029	24,082	408,900
2030	1,068,482	408,900
2031	150,409	408,900
2032	694,560	408,900
2033	167,893	397,969
2034	3,874	397,969
2035	1,236,712	397,969
2036	175,127	397,969
2037	406,238	397,969
2038	696,488	608,690
2039	745,721	608,690
2040	467,884	608,690
2041	793,532	608,690
2042	339,823	608,690
2043	463,303	680,076
2044	1,230,000	680,076
2045	628,820	680,076
2046	724,703	680,076

2047	353,556	680,076
2048	1,147,891	1,199,511
2049	938,173	1,199,511
2050	819,089	1,199,511
2051	1,566,287	1,199,511
2052	1,526,116	1,199,511
2053	3,420,628	1,418,868
2054	1,207,611	1,418,868
2055	1,090,981	1,418,868
2056	666,319	1,418,868
2057	708,798	1,418,868
2058	1,713,179	915,905
2059	1,176,059	915,905
2060	918,073	915,905
2061	220,396	915,905
2062	551,819	915,905
2063	746,460	489,728
2064	368,170	489,728
2065	670,794	489,728
2066	331,241	489,728
2067	331,976	489,728
2068	201,550	186,827
2069	114,994	186,827
2070	303,094	186,827
2071	211,918	186,827
2072	102,579	186,827
2073	402,945	344,334
2074	485,439	344,334
2075	130,272	344,334
2076	371,375	344,334
2077	331,637	344,334

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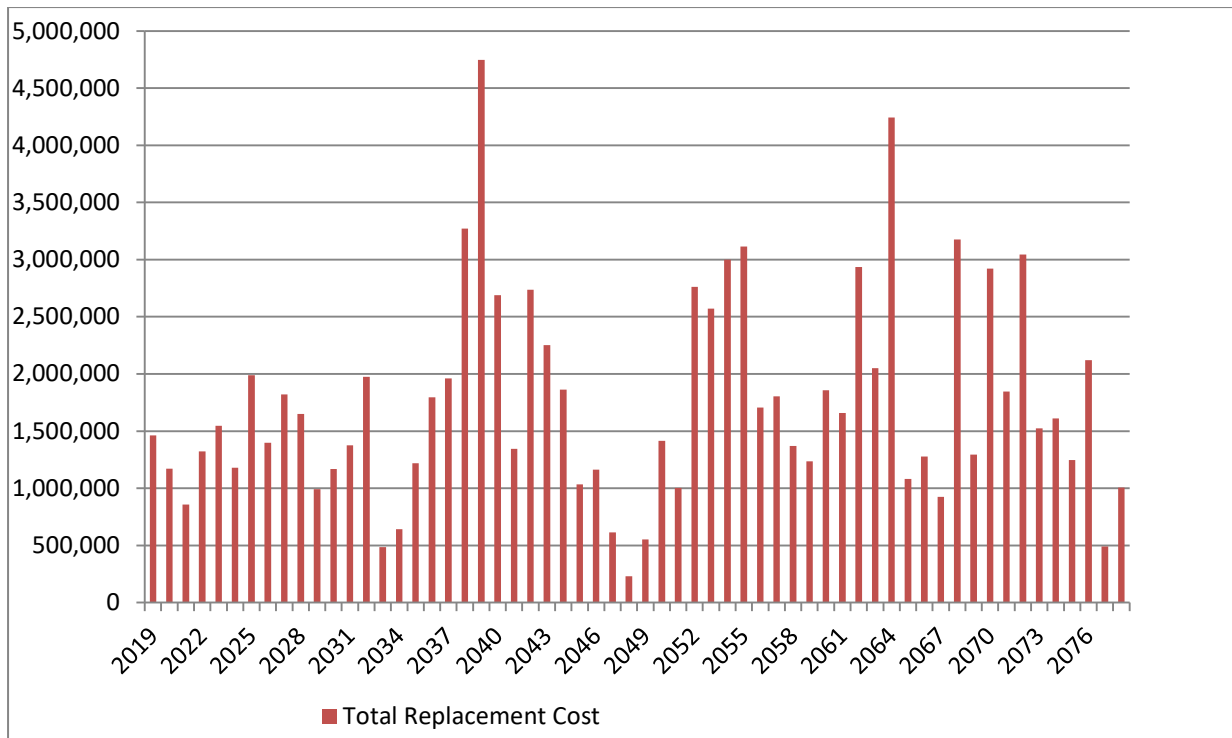
8.3.4 Projected Plant Renewal Costs (no allowance for inflation)

(Source: 1958574)

Year	Total Replacement Cost
2019	1,462,783
2020	1,172,032
2021	857,402
2022	1,323,346
2023	1,545,425
2024	1,178,746
2025	1,988,586
2026	1,398,781
2027	1,820,403
2028	1,649,799
2029	990,686
2030	1,169,294
2031	1,375,708
2032	1,975,754
2033	486,282
2034	642,791
2035	1,219,223
2036	1,796,783
2037	1,961,467
2038	3,270,801
2039	4,746,876
2040	2,688,984
2041	1,345,734
2042	2,736,032
2043	2,251,814
2044	1,863,568
2045	1,032,876
2046	1,162,814
2047	612,834

2048	229,111
2049	552,111
2050	1,414,626
2051	1,002,149
2052	2,762,105
2053	2,570,779
2054	3,000,092
2055	3,114,347
2056	1,706,446
2057	1,804,362
2058	1,370,217
2059	1,236,312
2060	1,857,609
2061	1,657,391
2062	2,936,790
2063	2,051,505
2064	4,244,480
2065	1,080,438
2066	1,276,269
2067	924,063
2068	3,176,071
2069	1,293,107
2070	2,921,718
2071	1,845,023
2072	3,045,234
2073	1,524,665
2074	1,610,546
2075	1,247,111
2076	2,119,493
2077	491,321
2078	1,004,891

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8.3.5 Projected Capital Projects for Next 30 years

The projected capital projects for the next 30 years are presented in the table below:

G = Growth. Funded from Financial Contributions under the Resource Management Act 1991

LoS = Increased Level of Service. New work resulting in improved service, e.g. increased water pressure on flows

R = Renewal

E = External funding

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Project	Description	Strategic context/Reasons	Timing	Costs	Driver (%)			
					G	LoS	R	E
North Morrinsville Trunk Sewer Main	Upgrade existing 300/375mm RCRRJ pipes from Allen st PS to Seales Rd	Insufficient capacity to cope with peak wet weather flows	2019/20	\$1,400,000		50	50	
Burwood Rd Bulk sewer	Install 300mm trunk sewer from Beatty Street under SH27 and railway along Burwood Road, Tower Road to Pump station and rising falling main to WWTP	Existing sewer not able to cope with proposed growth - Precinct F and Tower Rd	2022/23	\$2,400,000	80	20		
Tower Road P/s and new rising main to TP		As above	2022/23	\$1,600,000	80	20		
Main sewer from west side of Te Aroha	Remove pipe bridge across Waihou River below Shakespeare Street & replace with pipe under river	Represents a high maintenance item	2018/19	\$150,000			100	
Upgrade of Te Aroha bulk sewer main.	450mm bulk sewer main from Shakespeare to Treatment Plant and then 375mm for rest - approx. 2.4km	Provides for increased flows in the future. Design sublet to outcome of investigation.	2019/20	\$3,000,000		50	50	
Upgrade Terminus Street pump station	Upgrade associated with upgrade of TA bulk sewer (above)	as above	2019/20	\$150,000		50	50	
Feed forward Systems	Using specialised systems to analyse and automate the plant demand (loads)	*Optimise power usage *Operators have more information to make informed decisions *Provides a tool for analysing effects of incoming loads on plant performance	2018/19	\$60,000 plus annual lease from opex		100		
Remote control of Pump stations	Remote controlling the pump stations	To allow real time control and feedback of key parameters to reduce operator time.	2018-21	\$50,000 per year for 3 years		100		
MVWWTP Contingency pond Lining	Lining the pond with concrete layer	The pond is utilized for storage for excess and out of specification flows: in its current state it is unsuitable for this due to the inability to clean it (resulting in odours) and scouring occurring of the clay liner (impacting the integrity of the liner).	2020/21	\$1.4m		100		
Miscellaneous treatment plant upgrades	Funding to allow for upgrades associated with resource consents, legislation, Havelock North outcomes, automation (SCADA)	Risk mitigation approach to allow funding for minor plant upgrades as a result of the Havelock North inquiry, resource consent reviews, other legislation such as healthy rivers and automation (SCADA)	2020/21	\$350k every 3 years		100		
MV consent upgrade			2026/27	\$15million *			60	40
MV mixer reconfiguration	Replace mixers in SBR2 to reduce risks of breaching the PE liner	Recent problems with mixer blades breaking and tearing the PE liner have highlighted the need to reassess what type of mixer is suitable for the tank.	2018/19	\$500,000 *			100	
Allen Street odour	Odour mitigation	Pump station subject to odour issues that can affect nearby residents and staff.	2019/20	\$70,000		100		

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MM WWTP compliance upgrade works – stage 3	Works required to achieve compliance in nitrogen discharge	Plant has unable to achieve compliance with nitrogen parameter consistently. Continued non-compliances will result in an abatement notice	2020/22	\$5m		100		
TA WWTP Desludging	Removal and disposal of accumulated sludge from the ponds using the methodology recommended in the Options report.	The options report will include an assessment of the current sludge level and the recommended time for sludge removal.	2020/21					
MV WWTP: Separate pond C and leachate pipeline	Install new pipe for Pond C return flow to the SBR	New consent has little room for any discharges from Pond C. The flow from this pond is shared with the landfill leachate pump, and shuts off when it is on. This reduces the volume per day from Pond C, and increases the risk of pond overflows.	2020/21	\$200,000				
Lengthen 225 s'west along Ritchie St to Stanley Ave. Divert Aroha View Ave rising main directly into new Ritchie St 225 line.	Reduce double pumping from Aroha View PS into Mount Ave PS.	* Do nothing * Investigations as above	2018/19	\$300,000				
Upgrades associated with renewals	Leave at \$50,000 annual	This does not refer to specific pipes this just refers to pipe replacement in general. Increasing sizes of pipes as they are replaced	Annual	\$50,000	50	50		
Upgrade associated with subdivisions	Increase to \$50,000 annual	This does not refer to specific pipes this just refers to pipe replacement in general. Increasing sizes of pipes as subdivisions install new pipes	Annual	\$50,000	50	50		
Equipment for chemical dosing at Te Aroha plant		Compliance	2018/19	\$100,000		100		
Telemetry system upgrade	Upgrade system as per Telemetry system assessment report recommendations	System effective operation	2021/22				100	

(Source: RM1889951)

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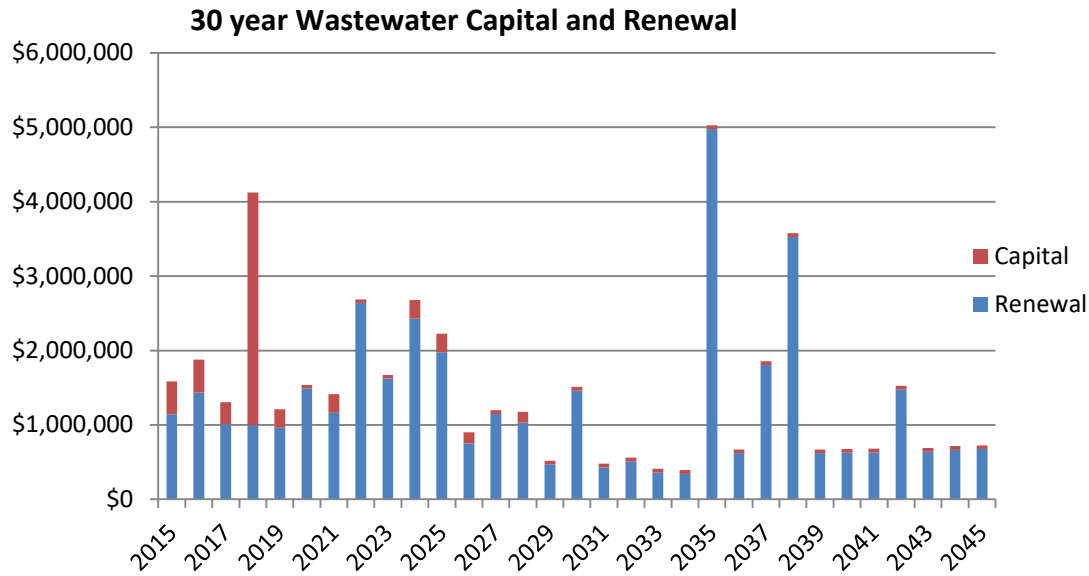
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
North Morrinsville Trunk Sewer		\$1.4m				-	-	-	-	-
Burwood Rd Bulk sewer					\$2.4m	-	-	-	-	-
Tower Rd SPS and new rising main to TP	-	-	-	-	\$1.6m	-	-	-	-	-
Main sewer from west side of TA	\$150,000	-	-	-	-	-	-	-	-	-
Upgrade of TA bulk sewer main		\$3m	-	-	-	-	-	-	-	-
Upgrade Terminus St SPS		\$150,000	-	-	-	-	-	-	-	-
Feed forward systems	\$60,000	-	-	-	-	-	-	-	-	-
Remote control of Pump stations	\$50,000	\$50,000	\$50,000	-	-	-	-	-	-	-
MVWWTP Contingency pond lining	-	-	\$1.4m	-	-	-	-	-	-	-
Miscellaneous treatment plant upgrades	-	-	\$350,000	-	-	-	\$350,000	-	-	\$350,000
MV consent upgrade	-	-	-	-	-	-	-	-	\$7.5m	\$7.5m
MV mixer reconfiguration	\$500,000	-	-	-	-	-	-	-	-	-
Allen St SPS odour	-	\$70,000	-	-	-	-	-	-	-	-
MM WWTP compliance upgrade works	-	-	-	-	-	-	-	-	-	-
MVWWTP separate pond C and leachate pipeline	-	-	\$200,000	-	-	-	-	-	-	-
Lengthen 225 s'west along Ritchie St to Stanley. Divert Aroha View RM to Ritchie St 225mm main.	\$300,000	-	-	-	-	-	-	-	-	-
Upgrades associated with renewals	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Upgrades associated with subdivisions	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Equipment for chemical dosing at Te Aroha plant	\$100,000									
Telemetry system upgrade				\$100,000						
	\$1,260,000	\$4,770,000	\$2,100,000	\$200,000	\$4,100,000	\$100,000	\$450,000	\$100,000	\$7,600,000	\$7,950,000

	2028 - 29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38
Upgrade associated with renewals	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Upgrades associated with subdivisions	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48
Upgrade associated with renewals	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Upgrades associated with subdivisions	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

8.3.6 Projected Capital and Renewal Costs (no allowance for inflation)

The graph below shows the actual cost of wastewater capital works combined with all renewals over the 30 years of this strategy.



8.3.7 Projected Financial Costs (no allowance for inflation)

These tables contain the information used in the preceding graphs for 10 years for operations and asset management and 30 years for renewal and capital. It should be noted that we have not smoothed out our plant renewals as the individual assets vary so much in cost and criticality.

Also note as stated in section 3, the figures for plant replacement in this section takes into account the early replacement of membranes in the Te Aroha and Matamata WWTP's. Thus there is significant variation for the years highlighted in yellow compared to those in section 3 which are the raw data from the Asset Register.

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Capital and Renewals

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Retic Renewals	1,427,940	1,427,940	1,427,940	1,427,940	271,541	271,541	271,541	271,541	271,541	408,900
Plant Renewals	1172032	857,402	1,323,346	1,545,425	1,178,746	1,988,586	1,398,781	1,820,403	1,649,799	990,686
Total Renewals	2,599,972	2,285,342	2,751,286	2,973,365	1,450,287	2,260,127	1,670,322	2,091,944	1,921,340	1,399,586
Capital	1,260,000	4,770,000	2,100,000	200,000	4,100,000	100,000	450,000	100,000	7,600,000	7,950,000

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Retic renewals	408,900	408,900	408,900	408,900	397,969	397,969	397,969	397,969	397,969	608,690
Plant Renewals	1,169,294	1,375,708	1,975,754	486,282	642,791	1,219,223	1,796,783	1,961,467	3,270,801	4,746,876
Total Renewals	1,578,194	1,784,608	2,384,654	895,182	1,040,760	1,617,192	2,194,752	2,359,436	3,668,770	5,355,566
Capital	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Retic renewals	608,690	608,690	608,690	608,690	680,076	680,076	680,076	680,076	680,076	1,199,511
Plant Renewals	2,688,984	1,345,734	2,736,032	2,251,814	1,863,568	1,032,876	1,162,814	612,834	229,111	552,111
Total Renewals	3,297,674	1,954,424	3,344,722	2,860,504	2,543,644	1,712,952	1,842,890	1,292,910	909,187	1,751,622
Capital	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

Operations and Asset Management

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Operations	\$3,012,592	3,068,581	3,355,581	3,215,581	3,228,581	3,298,581	3,278,581	3,228,581	3,228,581	3,228,581
Asset Management	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000	288,000

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8.3.8 Key Operational (Asset Management) Projects

Project Name	Description	Timing	Costs
Investigate increasing capacity and security of Te Aroha falling main to TP		2018/19	\$50k
Update Biosolids Strategy		2020/21	\$30k
MV consent investigation		2024/25	\$200k
Te Aroha Membrane investigation		2018/19	\$50k
Te Aroha WWTP Options Report	Report to investigate options around future sludge management, membrane type and pond management	2020/21	\$70k
Disposal to land investigation		2024/25	\$20k
MMWWTP compliance investigation		2018/19	\$100k
Pond C Dam investigation.	Do we need to keep it as a dam classification or can we reduce the dam height.	2020/21	\$10k
Undertake an Assessment of Effects on the Environment over a summer and winter period.	Determine a representative picture of the effects that the plant discharge has on the Waihou River and compare this also with an earlier assessment carried out for the Te Aroha plant discharge.	2017/18 – 2018/19	\$75k over two financial years
Undertake an Options Assessment .	Determine the options available to achieve consent compliance and renewal of the consent in 2024.	2018/19	\$150k
Investigate capacity issues Aroha View P/S	May require larger pumps & also possibly rising main	2018/19	\$25k
Complete sewer pump station condition assessments	Carry out condition assessment of sewer pump stations in the district. Use data to update AssetFinda and renewal programme.	2018/19	in-house
Develop a strategy to improve asset condition and remaining life data for wastewater plant assets.	Incorporate failure records and actual condition inspections.		in-house
Update Asset Finda with existing CCTV assessment data.	Review CCTV data being stored and enter onto AssetFinda	2018/19	in-house
Update network hydraulic models for the three main systems.	Update with new asset data arising from subdivision development, capital works and renewals		
Develop an Inflow and infiltration strategy		2020/21	

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Develop a renewals strategy based on pipe age, criticality, condition and hydraulic performance Complete asset criticality assessment and update AssetFinda. Develop a long-term inspection and a proactive scheduled maintenance plan based on asset criticality	Refer to methodology used by Waipa DC and developed by Beca (Shaun Hodson).	2018/19	In-house in-house in-house
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8.4 Borrowing Needs

8.4.1 Key Financial Forecast Assumptions

The cost figures arrived at are the best possible estimates at the time of preparation. More accurate figures will be prepared during each year's annual plan preparation. Some of the works in the plan need more investigation and therefore the works may vary depending on the options available.

The assumptions made in the preparation of the plan are:

- Council is committed to sustain the current levels of service to the community
- Growth projections are based on Statistics New Zealand forecasts
- There will be no sudden changes of demand due to growth
- Renewal is funded through the depreciation charges
- Growth related expenditure is charged through development contribution
- Demand may change as a result of rural/residential zoning revisions
- Gifted assets are recognised at standard industry costs, as per unit rates in the valuation immediately preceding the asset being acquired

Growth predictions used in the Demand section of this plan play an important part in the calculation of development contributions

Where possible inflation factors have been calculated based on individual trends faced by Council. Otherwise reference has been made to national inflation trends using financial indicators published by BERL, Capital Goods Pricing Indices and Consumer Price Indices.

The range of inflation rates used to calculate operating costs has also been applied to revenue. The subsidy has been calculated at present levels and on the basis that eligibility criteria will remain unchanged

Useful lives have been ascribed to the assets and provide information to support replacement plans. The useful lives are used in the calculation of depreciation

9. Improvement Plan

9.1 Proposed Actions

Matamata-Piako District Council is committed to ongoing improvement in the quality of its Water Services management practices. This is reflected in the risk based strategic management approach that has been adopted to determining priorities for improvement.

Being able to implement (in terms of cost and technical implementation issues) actions to enhance business practices for each of the criteria has also been assessed.

This has enabled both the highest overall risk areas and the business improvements, which will deliver the highest relative payback to be identified.

This Improvement Plan is integral to that approach, quantifying current business practice and measuring progress toward an identified future position.

The purpose of the Improvement Plan is to:

- Identify, develop and implement AM planning processes
- Identify and prioritise ways to cost-effectively improve the quality of the AM plan
- Identify indicative time-scales, priorities, and human and financial resources required to achieve AM planning objectives

The Improvement Plan is subject to constant reappraisal and change. While reappraisal is an on-going process, the Improvement Plan will form the basis of the Water Service annual business planning.

Section 9: Improvement Plan

9.2 Improvement Projects

1 AM Policy Development				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
1 AM Policy Development	Corporate expectations expressed informally and simply, e.g. "all departments must update AM Plans every three years".	<p>Defined policy statements for all significant activities.</p> <p>Clear linkage to corporate goals.</p> <p>Policy supported by high-level action plans with defined responsibilities for delivery.</p>	<p>AM Policy and Strategy reviewed and adopted by Executive Team each year</p> <p>Expectations of each activity area defined with detailed action plans, resources, responsibilities and timeframes.</p>	AM Policy and Strategy fully integrated into the organisations business processes and subject to defined audit, review and updating procedures
Current Status	Core-Intermediate	<p>Current status</p> <ul style="list-style-type: none"> • Council has implemented a restructure to allow a high focus on AM • AM Policy and Strategy reviewed and adopted by Executive Team each year • Expectations defined for activity areas with action plans, resources, responsibilities and timeframes • Processes are in place though not necessarily able to deliver on all expectations 		
Appropriate Target	Intermediate	<p>Future status</p> <ul style="list-style-type: none"> • All processes in place, aligned and consistent • Related policies and strategies revised and aligned for consistency • AM practices/processes are embedded and part of 'business as usual' 		

Section 9: Improvement Plan

Levels of Service and Performance Management				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
2 Levels of Service and Performance Management	Asset contribution to organisations objectives and some basic levels of service have been defined.	Customer Groups defined and requirements informally understood. Levels of service and performance measures in place covering a range of service attributes. Annual reporting against performance targets.	Customer Group needs analysed. Costs to deliver alternate key levels of service are assessed. Customers are consulted on significant service levels and options.	Levels of service consultation strategy developed and implemented. Technical and customer levels of service are integral to decision making and business planning.
Current Status	Core	<ul style="list-style-type: none"> • Annual Customer Survey • Customer request management module (CRM) • Response times reported for some activities • LoS costs are known to some extent but there are gaps and alternative options are seldom analysed • Key stakeholders are known and needs are generally understood • LTP consultation process includes pre-consultation on LoS options 		
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Measurable technical performance measures that provide useful information for decision-making • User intercept surveys to gather more detailed data on stakeholder needs and expectations • Minimum specifications to clarify expectations around service delivery outcomes • Key LoS options are cost analysed 		

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
3	Investigate increasing capacity and security of Te Aroha falling main to Treatment Plant	Level of Service and Performance Management		2018-19	\$50k
3	Develop an Inflow and infiltration strategy	Level of Service and Performance Management		2019-20	

Section 9: Improvement Plan

Demand Forecasting				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
3 Demand Forecasting	Demand forecasts based on experienced staff predictions, with consideration of known past demand trends and likely future growth patterns.	Demand forecasts based on robust projection of a primary demand factor (e.g. population growth) and extrapolation of historic trends. Risk associated with demand change broadly understood and documented.	Demand forecasts based on mathematical analysis of past trends and primary demand factors. A range of demand scenarios is developed (e.g. high/medium/low).	As for 'intermediate' plus risk assessment of different demand scenarios with mitigation actions identified.
Current Status	Core	<ul style="list-style-type: none"> • Understanding of aging population • District Plan changes at hearing stage • Recent Population Growth Scenario Projections (2017) 		
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Period review of demographic, economic and recreation trend assumptions • Periodically review strategies • Feasibility studies with a range of demand scenarios for major projects 		

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
3	Investigate increasing capacity and security of Te Aroha falling main to Treatment Plant	Demand Forecasting		2018-19	\$50k
3	Investigate capacity issues at Aroha View pump station	Demand Forecasting		2018-19	\$25k
3	Update network hydraulic models for the three main systems.	Demand Forecasting		2018 -	\$20k/year

Section 9: Improvement Plan

Asset Register Data				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
4 Asset Register Data	Basic physical information recorded in a spreadsheet or similar (e.g. location, size, type) but may be based on broad assumptions or not complete.	Sufficient information to complete asset valuation – as for ‘minimum’ plus replacement cost and asset age/life. Asset hierarchy, asset identification and asset attribute systems documented.	A reliable register of physical and financial attributes recorded in an information system with data analysis and reporting functionality. Systematic and documented data collection process in place. High level of confidence in critical asset data.	Information on work history type and cost, condition, performance, etc recorded as asset component level. Systematic and fully optimised data collection programme. Complete data base for critical assets; minimal assumptions for non-critical assets.
Current Status	Intermediate	Data largely complete except for a number of unknown material/ages. Documented processes are in the QA system and audited as part of the corporate QA		
Appropriate Target	Intermediate	Accurate asset data for vested assets, received and inputted in a timely manner Accurate asset data for capital and renewal received and captured in a timely manner All critical assets captured and flagged in database High confidence in critical asset data Systematic asset data capture and verification programmes in place Improved alignment with new LTP categories		

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
1	Complete asset criticality assessment and update AssetFinda.	Asset Register Data		2018-19	In-house
2	Update Asset Finda with existing CCTV assessment data.	Asset Register Data		2018-19	In-house

Section 9: Improvement Plan

Asset Condition Data				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
5 Asset Condition	<p>Condition assessment at asset group level (top down).</p> <p>Supports minimum requirements for managing critical assets and statutory requirements (e.g. safety)</p>	<p>Condition assessment programme in place of major asset types, prioritised based on asset risk. Data supports asset life assessment. Data management standards and processes documented. Programme for data improvement developed.</p>	<p>Condition assessment programme used to derive benefit cost analysis of options. A good range of condition data for all asset types (may be sampling based). Data management processes fully integrated into business processes. Data validation process in place.</p>	<p>The quality and completeness of condition information supports risk management, lifecycle decision making and financial/performance reporting. Periodic reviews of programme suitability carried out.</p>

Current Status	Intermediate	<ul style="list-style-type: none"> • Still lagging behind in assessing condition of some assets • The condition rating used for assets due for replacement • Renewal profiles available for most assets
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Systematic condition-rating programmes in place for assets including critical plant • Condition rating information used to update asset lives and produce renewal profiles

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
1	Te Aroha WTP Membrane investigation	Asset Condition		2018-19	\$50k
2	Carry out condition assessment of sewer pump stations in the district. Use data to update AssetFinda and renewal programme.	Asset Condition		2018-19	In-house
2	Develop a strategy to improve asset condition and remaining life data for wastewater plant assets.	Asset Condition		2019-20	In-house

Section 9: Improvement Plan

Risk Management				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
6 Risk Management	Critical assets understood by staff involved in maintenance/renewal decisions.	Risk framework developed. Critical assets and high risks identified. Documented risk management strategies for critical assets and high risks.	Systematic risk analysis to assist key decision-making. Risk register regularly monitored and reported. Risk managed consistently across the organisation.	Formal risk management policy in place. Risk is quantified & mitigation options evaluated. Risk integrated into all aspects of decision making.
Current Status	Core	<ul style="list-style-type: none"> • Risk matrix developed • Critical assets identified 		
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Corporate risk framework implemented • Risk register regularly monitored and reported • Risk action plans for critical assets • Business continuity plans 		

Section 9: Improvement Plan

Decision-making				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
7 Decision Making	AM decisions based largely on staff judgement and agreed corporate priorities.	Formal decision making techniques (MCA/BCA) are applied to major projects and programmes.	Formal decision making and prioritisation techniques are applied to all operational and capital asset programmes within each main budget category. Critical assumptions and estimates are tested for sensitivity to results.	As for 'intermediate' plus.... The framework enables projects and programmes to be optimised across all activity areas. Formal risk based sensitivity analysis is carried out.

Current Status	Core	<ul style="list-style-type: none"> Capital and renewal - prioritisation techniques applied to Bulk Funded items Strategies and LoS do not necessarily always drive decision making
Appropriate Target	Core	<ul style="list-style-type: none"> LoS, Strategies, and Risk, to have greater influence on prioritisation Renewal profiles to aid decision making More systematic approach to operations and maintenance tasks

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	Morrinsville WTP Pond C dam investigation – do we need to keep it as a dam or can we reduce the height of the dam.	Decision making		2020-21	\$10k
2	Update Biosolids Strategy	Decision making		2020-21	\$30k
2	Disposal to land investigation	Decision making		2020-21	\$20k

Section 9: Improvement Plan

Renewal Planning				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
8 Renewal Planning	There is a schedule of proposed renewal projects and associated costs, based on staff judgement of future requirements.	Projects have been collated from a wide range of sources such as operational staff and risk processes. Renewal projects for the next three years are fully scoped and estimated.	As for "core" plus formal options analysis and business case development has been completed for major projects in the 3-5 year period. Major renewal projects for the next 10-20 years are conceptually identified and broad cost estimates are available.	Long term renewal investment programmes are developed using advanced decision techniques such as predictive renewal modelling
Current Status	Intermediate	<ul style="list-style-type: none"> • Renewals based on age profile, condition, maintenance demand, customer service issues • Expenditure spread out over period to manage effect on rates 		
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Greater use of renewal profiles and asset data to set budgets • Condition-rating programmes to feed into renewal planning 		

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	Develop a renewals strategy based on pipe age, criticality, condition and hydraulic performance.	Maintenance Planning		2018-19	\$???

Section 9: Improvement Plan

Maintenance Planning				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
9 Maintenance Planning	<p>Organisational objectives and how asset functions support these are understood.</p> <p>Compliant with legislation and regulations.</p> <p>Maintenance records maintained.</p>	<p>Asset criticality considered in response processes.</p> <p>Fault tracing and closure process.</p> <p>Strategy for prescriptive versus performance-based maintenance developed.</p> <p>Key maintenance objectives established and measured.</p>	<p>Contingency plans for all maintenance activities.</p> <p>Asset failure modes understood.</p> <p>Frequency of major preventative maintenance optimised using benefit-cost analysis.</p> <p>Maintenance management software implemented.</p>	<p>Forensic root cause analysis for major faults.</p> <p>Optimisation of all reactive and planning programmes alongside renewal planning.</p> <p>Procurement models fully explored.</p>

Current Status	Core	<ul style="list-style-type: none"> • CRM system • Asset failures investigated and identified • Preventative maintenance undertaken
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Performance measures based on response times • Maintenance schedules implemented for routine and critical tasks • Asset condition data used for maintenance planning • Key objectives established and measured

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	Develop a long-term inspection and a proactive scheduled maintenance plan based on asset criticality	Maintenance Planning		2018-19	In-house

Section 9: Improvement Plan

Capital Works Planning				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
10 Capital Works Planning	There is a schedule of proposed capital projects and associated costs, based on staff judgement of future requirements.	Projects have been collated from a wide range of sources such as operational staff and risk processes. Capital projects for the next three years are fully scoped and estimated.	As for “core” plus formal options and business case analysis Development has been completed for major projects in the 3-5 year period. Major capital projects for the next 10-20 are conceptually identified and broad cost estimates are available.	Long term capital investment programmes are developed using advanced decision techniques such as predictive renewal modelling (refer section 3.1)

Current Status	Intermediate	<ul style="list-style-type: none"> Projects collated through activity groups comprising policy, engineering & operations staff. Planning in hand for next 30 years of capital works
Appropriate Target	Intermediate	<ul style="list-style-type: none"> Improved criteria for assessing proposed Bulk Fund projects LoS, Strategies, and Risk, to have greater influence on prioritisation Strategies used more to guide capital works planning

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	MMWWTP compliance investigation	Capital Works Planning		2018-19	\$100k
2	Morrinsville WWTP Consent investigation	Capital Works Planning		2024-25	\$200k

Section 9: Improvement Plan

Financial and Funding Strategies				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
11 Financial and Funding Strategies	Financial forecasts are based on extrapolation of past trends and broad assumptions about the future. Assets are re-valued in accordance with International Financial Reporting Standards (IFRS).	Ten year+ financial forecasts based on current AMP outputs. The quality of forecasts meets IFRS requirements. Significant assumptions are specific and well-reasoned. Expenditure captured at a level useful for AM analysis.	Ten year+ financial forecasts are based on current and comprehensive AMPs with detailed supporting assumptions / reliability factors. Asset expenditure information is linked with asset performance information.	The business unit publishes reliable ten year+ financial forecasts based on comprehensive, advanced AMPs with detailed underlying assumptions and high confidence in accuracy. Advanced financial modelling provides sensitivity analysis, evidence-based whole of life costs and cost analysis for level of service options.

Current Status	Core	<ul style="list-style-type: none"> • Funding Policy • Ten year financial forecast in AMP and LTP • Maintenance & Operations – based on historical expenditure • Renewal profiles available for most assets
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Renewals – based on asset performance and condition information • Optimised trade-off between maintenance and renewals in line with budget constraints

See: 'Renewal Planning', 'Capital Planning', 'Maintenance Planning' and 'Asset Condition' sections.

Section 9: Improvement Plan

Asset Management Teams				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
12 AM Teams	AM allocated primarily to one or two people who have AM experience.	<p>Cross-Council coordination occurs through a Steering Group or Committee,</p> <p>AM training occurs for primary staff.</p> <p>The executive team have considered options for AM functions and structures.</p>	<p>All staff in the organisation understand their role in AM, it is defined in their job descriptions, and they receive supporting training aligned to that role.</p> <p>A person on the Executive Team has responsibility for delivery the AM Policy/Strategy.</p>	<p>A formal AM capability building programme is in place and routinely monitored.</p> <p>The AM structure has been formally reviewed with consideration of the benefits and cost of options.</p>

Current Status	Intermediate	<ul style="list-style-type: none"> All relevant staff now in activity groups to strengthen AM planning AM training needs identified as required A person on the Executive Team has responsibility for delivery the AM Policy/Strategy
Appropriate Target	Intermediate	<ul style="list-style-type: none"> All appropriate staff in the organisation understand their role in AM, it is defined in their job descriptions, and they receive training aligned to that role

Section 9: Improvement Plan

Asset Management Plans				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
13 AM Plans	Plan contains basic information on assets, service levels, planned works and financial forecasts (5-10 years) and future improvements.	As for 'Minimum' plus executive summary, description of services and key/critical assets, top down condition and performance description, future demand forecasts, description of supporting AM processes, 10 year financial forecasts, 3 year AM improvement plan.	As for 'Core' plus analysis of asset condition and performance trends (past/future), effective customer engagement in setting LoS, ODM/risk techniques applied to major programmes.	As for 'Intermediate' plus evidence of programmes driven by comprehensive ODM techniques, risk management programmes and level of service/cost trade-off analysis. Improvement programmes largely complete with focus on ongoing maintenance of current practice.

Current Status	Intermediate	<ul style="list-style-type: none"> • All levels largely achieved • 10 year financial programme • 3 year improvement programme
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Intermediate status for all AMPs

See: Remainder of Improvement Plan

Section 9: Improvement Plan

Information Systems				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
14 Information Systems	<p>Asset register can record core asset attributes – size, material, etc.</p> <p>Asset information reports can be manually generated for AMP input.</p>	<p>Asset register enables hierarchical reporting (at component to facility level).</p> <p>Customer request tracing and planned maintenance functionality enabled.</p> <p>System enables manual reports to be generated for valuation, renewal forecasting.</p>	<p>More automated analysis reporting on a wider range of information.</p> <p>Key operations, unplanned maintenance and condition and performance information held.</p>	<p>Financial, asset and customer service systems are integrated and all advanced AM functions are enabled.</p>

Current Status	Core	<ul style="list-style-type: none"> • AssetFinda and Authority AM • Currently in the process of implementing Infrastructure data - replacing Outlook • Data considered 80% reliable • Condition data for buildings and plant is recent and fairly comprehensive • Performance data for pipes available through hydraulic model • Planned maintenance functionality is available but not implemented yet • CRM • GIS
Appropriate Target	Intermediate	<ul style="list-style-type: none"> • Data systematically captured and updated to improve functionality of systems • Planned maintenance functionality implemented • Condition and performance information held for critical assets, buildings, pools, spas

See: 'Asset Register Data' and 'Levels of Service and Performance Measures' sections

Section 9: Improvement Plan

Service Delivery Mechanisms				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
15 Service Delivery Mechanisms	Service delivery roles clearly allocated (internal and external), generally following historic approaches.	Contracts in place for external service provision. Core functions defined.	Internal service level agreements in place with internal service providers. Contracting approaches reviewed to identify best delivery mechanism. Tendering/contracting policy in place. Competitive tendering practices applied.	All potential service delivery mechanisms reviewed and formal analysis carried out. Risks, benefits and costs of various outsourcing options are considered.
Current Status	Core		<ul style="list-style-type: none"> • Internal service level agreements with internal service providers not in place or out of date • Internal service delivery approaches not reviewed for some time • Tendering policies in place • Internal procedures in Promapp • Procurement Strategy • Approved contractors • Contracts Procedures Manual 	
Appropriate Target	Intermediate		<ul style="list-style-type: none"> • Minimum service delivery standards for internal providers that are outcome based 	

See: 'Quality Management' and 'Levels of Service and Performance Measures' sections.

Section 9: Improvement Plan

Quality Management				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
16 Quality Management	Simple process documentation in place for service-critical activities.	Defined quality policy and basic Quality Management System. All critical activity processes documented.	Process documentation implemented in accordance with the Quality Management System plan. All processes documented to appropriate level of details.	ISO 9001 certification achieved and surveillance audits demonstrate the satisfactory operation of the Quality Management System.

Current Status	Intermediate	<ul style="list-style-type: none"> • ISO 9001 accredited • Internal & external auditing • Corporate quality systems in Promapp
Appropriate Target	Advanced	<ul style="list-style-type: none"> • Minimum specifications for service delivery • Improved quality procedures and documentation at operational level

Improvement Number	Priority	Improvement	Element	Action Officer	Target completion	Projected cost
	1	There is a need for a quality assurance review on the complaints process to ensure that all data is recorded and linked to Specific asset records	Quality Management		On-going	In-house

Section 9: Improvement Plan

Improvement Planning				
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100
17 Improvement Planning	Improvement actions identified and allocated to appropriate staff.	Current and future AM performance assessed and gaps used to drive the improvement actions. Improvement plans identify objectives, timeframes, deliverables, resource requirements and responsibilities.	Formal monitoring and reporting on the improvement programme to Executive Team. Project briefs developed for all key improvement actions.	Improvement plans specify key performance indicators (KPIs) for monitoring AM improvement and these are routinely reported.

Current Status	Intermediate	<ul style="list-style-type: none"> Improvement plan identifies objectives, timeframes, deliverables, resource requirements and responsibilities
Appropriate Target	Intermediate	<ul style="list-style-type: none"> Project briefs developed for major improvement actions

See: All sections of Improvement Plan

Section 9: Improvement Plan