



Stormwater Activity Management Plan 2021 Version 3



Stormwater Activity Management Plan

Quality Information

Document	Stormwater Activity Management Plan
Ref	Version 3
Date	5 March 2021
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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

Stormwater systems safely and efficiently drain surface water to minimise flooding in our communities.

We aim to ensure stormwater is well managed, and work with property owners to improve stormwater and reduce flooding.

What we do now

We currently have stormwater drainage systems in Matamata, Morrinsville, Te Aroha, Waharoa and a limited system in Hinuera. These systems include a mix of pipes, open channels and drains.

We work to ensure there are adequate services and staff to respond to storm events, and implement maintenance programs to ensure our systems remain in good condition. We also work collaboratively with Waikato Regional Council as they also own, manage and maintain parts of the drainage system (streams and rivers).

Maintaining all of our assets involves undertaking scheduled and unscheduled maintenance and repair work. We have renewal strategies to allow for the progressive replacement of assets as required.

Assessment of the stormwater system

The Local Government Act 2002 requires Councils to complete an assessment of their water, wastewater and stormwater services and include a summary of the significant variations to this assessment in the Long Term Plan. Council last completed this assessment in 2005 and while there is no requirement in legislation to review the assessment, the assessment review has been completed in 2017.

The management of stormwater was assessed as a lower risk to public health than water and wastewater, and was not a focus for the assessment.

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 survey showed 45% of respondents were either very satisfied or satisfied with the service provided by Council; 8% were dis-satisfied or very dis-satisfied and 25% were neither. The balance of the people surveyed did not know or use the stormwater system.

Thirty residents are dissatisfied with Council's management of flooding within urban areas. The reasons for dissatisfaction are shown below:

Theme	Proportion
Flooding with heavy rains	53%
Drains blocked, not cleared	30%
Leaves not cleared	10%
Council unhelpful	13%
No stormwater from houses	12%
Ongoing issue, takes a long time to resolve	6.7%
Gutter blocked, not cleared	6.7%

Looking ahead

The Strategic Priorities relating to the Stormwater Activity are:

- Meet Environmental standards
- Minimisation of flooding in urban areas
- Economic Growth and productivity

Our vision

- Infrastructure and services fit for purpose and affordable now and in the future.
- Quality infrastructure is provided to support community well-being;
- We have positive partnerships with external providers of infrastructure

Growth and demand

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

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

As a result of the projected population increase we will need to ensure that the stormwater system can meet the increased demand, particularly within existing and proposed growth areas. Council has noted that the existing stormwater systems were designed to earlier standards and that to upgrade the systems to current standards is uneconomical in most cases.

As a result it will be necessary to accept ponding of water will occur for limited period during heavy rain events and that disposal of stormwater for new developments will generally be by soakage

Legislation and environmental standards are also key drivers of stormwater and focus on improving water quality and reducing the effects of run-off.

In 2010 we completed a community stormwater questionnaire to learn more about community expectations and have also noted the results of customer surveys. These highlight the need for a better understanding of what is reasonable and affordable in respect of stormwater disposal.

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

- Encouraging greater use of localised stormwater management systems to minimise the rate of stormwater discharge in rivers and streams (which could increase flooding)
- Delivering on community expectations at an affordable level
- Managing the high cost of the stormwater activity as a low return service

Assumptions

The current services and how we provide them will continue won't change

Uncertainties

- Climate change is likely to have a significant impact on Stormwater
- Managing higher stormwater discharge rates from growth and urbanisation
- Ensuring the income from development contributions meets our rate of expenditure on Stormwater

Resource Consents from Waikato Regional Council

We hold four comprehensive consents for stormwater discharge for each of the four urban areas where stormwater reticulation is provided, one consent for the retention dam at Tawari St in Matamata and four consents for individual structures installed in the Te Aroha area since the comprehensive consents were issued. It is expected the structure consents will be included in the comprehensive consents when they are renewed.

The comprehensive discharge consents and the Tawari Dam consent expire in August 2024 and the structure consents expire in the period 2035 - 2040

These consents are important as they give us permission to discharge stormwater from the urban area in to nearby streams and rivers. They also set the environmental standards that we need to meet when we carry out this activity.

In particular additional water can only be discharged if there are no detrimental effects downstream and the discharged water must meet specified standards.

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.

Levels of service

The performance measures as set by Central Government are presented below. The table show the targets for each measure and the achievement for 2016/17.

Section 1: Executive Summary

Stormwater		2/4
The number of flooding events that occur in our district:		
For each flooding event, the number of habitable floors affected (expressed per 1,000 properties connected to our stormwater system).		
The affected habitable floors were a garage underneath a house and a basement, neither of these areas had people living in them. Performance measure criteria define these as being habitable floors. The two habitable floors both flooded during the Cyclone Cook flooding event. The events that occurred in April were extraordinary - two ex-tropical cyclones and a low pressure system, (Ex-Tropical Cyclone Debbie, Tasman low, and Ex-Tropical Cyclone Cook) made landfall in New Zealand on 4 April, 11 April, and 13 April respectively. These events followed an earlier period of intense rainfall in parts of the Walkato region during March 2017. The effects of the events were felt across the Walkato Region with the Walhou River, Plako River and lower Walkato River systems being the worst affected. Ex- cyclone Cook has been identified as a greater than 1 in 200 return period event.	O flooding events O habitable floors affected	1 flooding events 2 habitable floors affected
Compliance with our resource consents for discharge from our stormwater system, (measured by the number of: abatements notices, infringement notices, enforcement orders, and convictions, received in relation to those resource consents).	0 received	O received
The median response time to attend a flooding event, measured from the time that we receive notification to the time that the service personnel reach the site.	Median: 24 hours	Median 1 hour, 13.5 minutes
The number of complaints we received about the performance of our stormwater system, (expressed per 1,000 properties connected to our stormwater system).		
We received a total of 102 complaints about our stormwater system, 57 complaints related to heavy rain and stormwater drain flooding, 36 of these complaints were during Cyclone Cook. This unusually high amount can be directly related to the weather events we experienced this year, with 3 flooding events, including Cyclone Cook.	4 complaints per 1,000 connections per year (32 in total)	101 complaints

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 Stormwater are identified below, along with how we plan to manage them.

	_	
Table 1-1	: Significant	Effects

Significant negative effects of this activity					
	Affected well-beings			ings	How we will mitigate the effects
	S	С	EC	EN	How we will mitigate the effects
Poor management of the stormwater system will lead to flooding, which can affect life and property	~		~	~	Continually monitor the effects of every flood and assess the practicalities of mitigating it efficiently and effectively Have emergency plans in place to respond to flooding.
Discharge of contaminated stormwater into waterways and lakes without treatment can pollute our environment		~		~	Comply with Waikato Regional Council consent conditions Environmental monitoring programme Long term reduction of stormwater through the use of onsite storage and disposal
Significant positive effects of this activity					

	Affected well-beings			ings	How we will maintain the offecte	
	S	С	EC	EN	now we will maintain the effects	
A well-managed stormwater network will mitigate a large portion of flooding and protect people and property	1		~	~	Provide regular proactive maintenance to the stormwater network maintaining it fully operational	

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

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 stormwater includes:

- Providing drainage to help protect buildings from flooding, manage low lying areas, and keep our roads passable during storms
- Helping protect the environment by maintaining a high level of compliance resource consent conditions
- Reducing the amount of stormwater through onsite management
- Efficient management of the stormwater 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.

Projected Financial Costs (no allowance for inflation)

					-			
Year	Retic Renewals	Plant Renewals	Capital	Total Capital and Renewal	Operations & Maintenance	Asset M'ment	Total Opex	Total Cap, Ren and O & M
2022	769	135,499	200,000	336,268	219,482	26,125	245,607	581,875
2023	769	135,499	600,000	736,268	219,482	26,125	245,607	981,875
2024	769	135,499	300,000	436,268	224,482	26,125	250,607	686,875
2025	769	135,499	100,000	236,268	229,482	26,125	255,607	491,875
2026	769	135,499	100,000	236,268	229,482	26,125	255,607	491,875
2027	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2028	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2029	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2030	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2031	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2032	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2033	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2034	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2035	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2036	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2037	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2038	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2039	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2040	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2041	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2042	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2043	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2044	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2045	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2046	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2047	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2048	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2049	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2050	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2051	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338

Table 1-2: Total Projected Renewal, Capital and O & M Costs (CM 2396617)

2 Introduction

2.1 Purpose of the Plan

The purpose of this Stormwater Activity Management Plan (SWAMP) is to ensure that assets are operated and maintained in a sustainable and costs effective manner, so that they provide the required level of service for present and future customers.

The Stormwater Activity Management Plan supports the purpose by:

- Demonstrating responsible management and operation of Stormwater 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 SWAMP 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 SWAMP 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 SWAMP provides the detail required to support the financial forecast.

Annual Plan: Detailed action plan on Council's projects and finances for each particular year. The works identified in the SWAMP 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 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. The 2017 Assessment of Water Services is being carried out separately to the Sanitary Assessment.

Contracts: The service levels, strategies and information requirements contained in SWAMP's are 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 SWAMP 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 SWAMP tactics and delivery of service.

Stormwater Management Plans (SMP): SMP are a resource consent requirement by Environment Waikato and document MPDC management objectives and procedures along with ensuring that stormwater is managed in accordance with consent requirements.

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, 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 covers a 30 year period and is updated every 3 years as part of the LTP.

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.

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.

Waikato Regional Plan: The Waikato Regional Plan has been developed by the Waikato Regional Council under the Resource Management Act 1991, and is intended to provide direction regarding the use, development and protection of natural and physical resources in the Waikato region. The proposed Plan contains modules covering Matters of Significance to Maori, Water, River and Lake Beds, Land and Soil, Air, and Geothermal Resources

2.3 Key Stakeholders

This plan recognises the following Key Stakeholders:

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).

2.4.1 Asset Management Process



2.4.2 The Stormwater 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	Description of Activity	Describes the activity				
4	Levels of Service	Defines current & proposed levels of service				
5	Growth & Demand Management	Details growth forecasts & effect on demand				
6	Sustainable Development	Outlines the approach used for sustainable management				
7	Risk Management	Outlines Council's risk management processes				
8	Financials	Identifies the funding requirements needed				
9	Lifecycle Management	Sets out the strategies & programs to achieve the goals				
10	Process & Asset Management Practices	Outlines the systems & processes used to manage the assets				
11	Improvement Plan	Details improvements to increase confidence in AM systems				

2.5 Description of Activity

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 175,300 hectares.

We have stormwater systems in the townships of Te Aroha, Morrinsville, Matamata, Waharoa and Hinuera. However the Hinuera system is very small and is not included as a rating district. These systems are a mixture of pipes, open channels, ponds, wetlands and drains.



2.6 Brief Description of Assets

The purpose of the reticulation system is to minimise nuisance flooding by collecting and discharging stormwater, resulting from moderate rainfall, into streams and other watercourses and prevent damage to or loss of property or amenity.

The reticulation system is made up of the following components:

- Lines (Mains, Service Connections Open Drains)
- Plant (SW Pumps etc)
- Points (Manholes etc)

Detailed descriptions and a summary of the assets are provide 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 public stormwater systems and provides information on private land drainage systems.

Issues and Options for Stormwater Management identified as part of the assessment are:

	Recommended Improvements
1	Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability
2	In consultation with KVS personnel prepare a pre-storm asset maintenance schedule
3	Ensure maintenance management plans for detention ponds and rain gardens are provided by developers and include in the maintenance programme and associated budget
4	Continue with regular community surveys to clarify what the community expectations are with regard to the management of stormwater
5	Commission catchment studies, specifically catchment modelling and soakage testing of growth areas e.g. Lockerbie (MV north), Bolton Rd area and Mount Ave. Assess the suitability of the growth areas with regard to stormwater management and identify areas susceptible to flooding and liquefaction
6	Develop and commit to a programme of improvements to address impacts from growth using funds collected through developer contributions

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

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 2015 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.

2.8.3 '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 Assessing Asset Management Practice

Information regarding the methodology used to assess the current progress of the AMP against the agreed level of intermediate (from the International Infrastructure Management Manual (IIMM) is presented in the Improvement section.

An external assessment of the AMP was undertaken in May 2015 by Waugh Consultants which reassessed the situation since their first assessment in December 2014



The outcome is set in a graphical manner below.

The report has been referred to in the writing of this AMP. Additional and longer-term work has been included in the Improvement Plans.

2.10 Renewal/Replacement Policy

The following sets out renewal/replacement policy for utility assts 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

2.10.1 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.. 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.

2.10.2 Deferred Maintenance/Renewals

Deferred maintenance/renewals for the stormwater activity are an outcome of the smoothing out of the projected renewal costs over a number of years. Approximately 50% of SW has an unknown install date so was assigned the same lifespan maturity date. It is expected that as

CCTV assessment progresses and more accurate lifespans can be determined the level of deferred renewals will decrease.

2.11 Stormwater Bylaw

The Stormwater Management Bylaw (2009) has been updated in 2017 and sets out the responsibilities of both Council and landowners is respect to the management of stormwater. The intention of this Bylaw is to manage Stormwater within the Matamata-Piako District so as to protect people, property and the environment by minimising the impact of flooding, erosion and environmental pollution.

This Bylaw is in addition to controls on Stormwater imposed by Waikato Regional Council and the Matamata-Piako District Council under the Resource Management Act 1991, the Building Act 2004, or any other Act, Regulation or Bylaw.

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 Activity 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 stormwater includes the following:

- The provision of drainage to help protect buildings from flooding, managing low lying areas, and keeping our roads passable during storms. This contributes to the social and economic wellbeing of the district.
- The efficient use of energy, contributing to economic and environmental wellbeing
- Maintaining a high level of resource consent compliance, contributing to environmental wellbeing
- Efficient operation of stormwater systems through fit for purpose asset management plans that provide for the depreciation of assets
- Achieving a reduction in stormwater quantities through onsite management
- Optimisation in the initiation of major capital development and renewal projects.
- Efficient management of the stormwater systems to ensure they provide value for money
- Developing strategies to manage climate change

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

The Three Waters uses 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 High Level of Resource Consent Compliance

We aim to achieve a high level of compliance with our Comprehensive Discharge Consents to ensure that the environment is safeguarded.

The Audit reports from Waikato Regional Council show full compliance with all discharge consents in recent years.

3.7 Significant Effects

The significant effects for the Matamata-Piako Community that the stormwater activity may have on the social, economic, environmental or cultural well-being of the community are listed below. It indicates how the existing approach or proposed action to address these in future. There are no significant negative effects that are likely to occur as shown.

Significant negative effects of this activity							
	Affe	cted v	vellbei	ngs	How we will mitigate the offects		
	S C EC EN		EN	How we will miligate the enects			
Poor management of the stormwater system will lead to flooding, which can affect life and property					Continually monitor the effects of every flood and assess the practicalities of mitigating it efficiently and effectively		
	 ✓ 		 ✓ 		Have emergency plans in place to respond to flooding.		
					CMPs/Modelling of growth areas to avoid future issues		
Discharge of contaminated stormwater into waterways and lakes without					Comply with Waikato Regional Council consent conditions		
treatment can pollute our environment				1	Environmental monitoring programme		
					CMPs/Modelling of growth areas to avoid future issues		

Significant positive effects of this activity								
Affected wellbeings								
	How we will maintain the effects							
A well-managed stormwater network will mitigate a large portion of flooding and protect people and property	~		~	~	Provide regular proactive maintenance to the stormwater network maintaining it fully operational			

4 Levels of Service

4.1 Background

The levels of service for the stormwater activity are defined in this section along with the performance measures adopted by the Council by which the levels of service will be assessed. An assessment of the Council's performance as measured against the current levels of service and independent research findings is presented below.

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

The Community Outcomes that the stormwater 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.

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.



The Strategic Priorities relating to the Stormwater Activity are:

- Meet Environmental standards
- Minimisation of flooding in urban areas
- Economic Growth and productivity

4.3 Legislative Requirements

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

The Local Government Act 2002: 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 stormwater services if they do so already.

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.

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

The Local Government Act 1974 (and 2002) provides the authority for Matamata-Piako District Council to construct, operate and maintain the Water, Stormwater and Wastewater systems.

The Resource Management Act 1991: governs all water discharges. Discharges to waterways and land occur through stormwater discharge. Resource consents obtained for discharge activities require parameters such as quality to be monitored as well as taking steps to mitigate any adverse effects that may occur through the activity.

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

Fire & Emergency New Zealand Act 2017

Worksafe Act 2013

Utilities Access Act 2010

Taumata Arowai – Water Services Bill.

Heritage New Zealand Taonga Act 2014

National Policy Statement for Freshwater Management 2020

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

4.4 Why is Council Involved in this Activity

Council has a statutory obligation for the delivery of the Stormwater service. The Health Act 1956 places an obligation on Council to improve, promote and protect public health within the District.

The provision of Stormwater systems helps to promote and improve public health. The Local Government Act 1974 provides the authority for the Council to own and operate the Stormwater service.

4.5 Levels of Service

The current Levels of Service for the Stormwater activity are:

- We will have an effective stormwater system that provides an appropriate level of protection to minimise harm.
- We will protect the environment from stormwater contaminates discharging into waterways.
- We will have reliable stormwater systems and will respond to requests for service from our residents in a timely manner.
- Residents will be satisfied with the overall performance of the stormwater system.

There are no proposed changes to the levels of service.

4.6 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 August 2017. The Water assets identified as 'strategic assets' in the Significance and Engagement Policy 2017 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		

4.7 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).

4.8 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 Community Facilities and Buildings 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.

	Business Services Group	Service Delivery Group					
Asset Area	Assets Strategy & Policy	Water & Wastewater Services	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			

4.9 Asset Management Structure

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

Section 4: Levels of Service





4.10 Performance Measures

4.10.1 Background

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.

4.10.2 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:

Level of service	How we measure performance	2012/13	2013/14	2014/15	2015/16	Achieved	Additional information	
			Actual		Target	1		
We will have an	The number of flooding events" that occur in our district.			O flooding events O habitable floors affected		Our stormwater network helps to prevent flooding		
effective stormwater system that provides	For each flooding	Ň	ew measi	ure	Actual		in our urban areas. This is measured by our Customer	
of protection to minimise harm.	habitable floors affected. (Expressed per 1,000 properties connected to our stormwater system.)**				0 flooding events 0 habitable floors affected		Request Management system. There has been zero flooding events in our district in 2015/16.	
We will protect	Compliance with our resource consents for discharge from our stormwater system	New measure		Zero	-	Our stormwater system discharges treated		
from stormwater	(measured by the number of: abatement notices, infringement notices, enforcement orders, and convictions, received in relation to those resource consents).**			Actual		stormwater into the environment. The quality and quantity must meet the appropriate standard. This is measured by our internal records.		
discharging into waterways.				Zero				
We will have reliable stormwater systems	The median response time to attend a flooding	New measure			Median: 24 hours			
and will respond to requests for service	the time that we receive			ure	Actual		People have the right to	
from our residents in a timely manner.	that service personnel reach the site.**			0 hours	-	expect that their property will be safe from flooding (and its potential health and social wellbeing impacts) when it rains. This is measured by our Customer Request		
Residents will be satisfied with the	The number of complaints we received about the performance of our	14-14-12 2010 2014		4 complaints per 1,000 connections per year (32 in total)				
of the stormwater	(expressed per 1,000	N	ew measi	JIE	Actual		management system.	
system.	properties connected to our stormwater system).**				Total of 9 complaints			

* A flooding event is defined as an overflow of stormwater from Council's stormwater system that enters a habitable floor (the floor of a building including a basement, but does not include ancillary structure such as standalone garden sheds or garages).

** These are mandatory performance measures that have been introduced for all councils around New Zealand.

The performance measure results for 2016/17 are;

Stormwater		2/4
The number of flooding events that occur in our district:		
For each flooding event, the number of habitable floors affected (expressed per 1,000 properties connected to our stormwater system).		
The affected habitable floors were a garage underneath a house and a basement, neither of these areas had people living in them. Performance measure criteria define these as being habitable floors. The two habitable floors both flooded during the Cyclone Cook flooding event. The events that occurred in April were extraordinary - two ex-tropical cyclones and a low pressure system, (Ex-Tropical Cyclone Debbie, Tasman low, and Ex-Tropical Cyclone Cook) made landfall in New Zealand on 4 April, 11 April, and 13 April respectively. These events followed an earlier period of intense rainfall in parts of the Waikato region during March 2017. The effects of the events were felt across the Waikato Region with the Waihou River, Plako River and lower Waikato River systems being the worst affected. Ex- curcione Cook has been identified as a creater than Lin 200 return period event	O flooding events O habitable floors affected	1 flooding events 2 habitable floors affected
Compliance with our resource consents for discharge from our stormwater system, (measured by the number of: abatements notices, infringement notices, enforcement orders, and convictions, received in relation to those resource consents).	0 received	O received
The median response time to attend a flooding event, measured from the time that we receive notification to the time that the service personnel reach the site.	Median: 24 hours	Median 1 hour, 13.5 minutes
The number of complaints we received about the performance of our stormwater system, (expressed per 1,000 properties connected to our stormwater system).		A
We received a total of 102 complaints about our stormwater system, 57 complaints related to heavy rain and stormwater drain flooding, 36 of these complaints were during Cyclone Cook. This unusually high amount can be directly related to the weather events we experienced this year, with 3 flooding events, including Cyclone Cook.	4 complaints per 1,000 connections per year (32 in total)	101 complaints

4.10.3 Performance Measures 2018/28

The performance measures approved by Council for 2018/28 are set out in the table below.

Measure	Target
The number of flooding events* that occur in our district.	0 Flooding events
For each flooding event, the number of habitable floors	0 habitable floors affected
affected. (Expressed per 1,000 properties connected to	
our stormwater system.)**	
The median response time to attend a flooding event*,	4 hours
measured from the time that we receive notification to	
the time that service personnel reach the site	
The number of complaints we received about the	4 complaints per 1,000
performance of our stormwater system, (expressed per	connections per year (32 in total)
1,000 properties connected to our stormwater system).**	
Compliance with our resource consents for discharge	Zero
from our stormwater system, (measured by the number	
of: abatement notices, infringement notices, enforcement	
orders, and convictions, received in relation to those	
resource consents).	
We will have sufficient trained staff within the Thames	2018/19 45%; 2019/20 55%;
Valley Emergency Management Operating Area.	2020/21 65%; 2021-28 75%

4.11 Customer Research and Expectations

4.11.1 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.

4.11.2 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.



Thirty residents are dissatisfied with Council's management of flooding within urban areas. The reasons for dissatisfaction are shown below:

Theme	Proportion
Flooding with heavy rains	53%
Drains blocked, not cleared	30%
Leaves not cleared	10%
Council unhelpful	13%
No stormwater from houses	12%
Ongoing issue, takes a long time to resolve	6.7%
Gutter blocked, not cleared	6.7%

Some concerns relate to the flow of stormwater from higher properties but it is well accepted common law that a lower property must receive the <u>natural</u> runoff from higher land. This is generally the flow in its natural (grassed) state.

It is also not generally understood that it is normally the property owner who is responsible for maintenance of watercourses including open drains and not Council.

Other concerns relate to water running off the road channel and into properties and in particular basement garages but there are generally two issues here.

Section 4: Levels of Service

- The way vehicles crossings have been constructed which allows water to flow to the boundary at a level lower than the top of the kerb;
- The fact the New Zealand Building Code does not require non-habitable rooms to be above flooding level.

Council has taken on some responsibility for some watercourses as listed in its Stormwater Bylaw – however this is only for the removal of obstructions and not for the control of erosion.

The cost to upgrade Council's existing pipe systems to the current standard would be in the order of \$150 million – and an increase in capacity may not be practical in all cases due to grade restraints and the width of the easements.

This does not include the cost to provide an outlet to a suitable watercourse and in Matamata this is calculated as an additional \$100 million as the only watercourse able to accept additional flow is the Waitoa River or the Mangawhero Stream.

There is a similar situation in Morrinsville where most of the stormwater discharges to the Morrinsville Stream – and its capacity is limited by both road culverts and channel size.

Likewise in Te Aroha many discharges are to quite small watercourses – some of which have been piped to older standards.

It is therefore considered that an education program is required to make residents aware of what is reasonable and affordable in respect of stormwater disposal.

5 Growth and Demand Management

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 flowon 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.

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 & Dwelling Profile for towns with stormwater facilities (Estimated 2017)

Section 5: Growth and Demand

Town		P	opulation	Dwellings					
	2018	2021	2031	2041	2051	2018	2031	2041	2051
Matam ata ¹	8,100	8,385	8,852	<mark>9,106</mark>	9,354	3, <mark>4</mark> 15	3,682	3,756	3,882
Waharoa ¹	620	620	621	597	527	224	247	243	225
Raungaiti	106	106	85	59	31	36	36	36	36
Morrins ville ¹	7,980	8,281	<mark>8,851</mark>	9,205	9,420	3,167	3,557	3,714	3,858
Rukumoana	68	68	59	47	34	23	23	23	23
Te Aroha ¹	4,680	4,888	5,261	5,388	5,400	1,961	2,209	2,268	2,302
Tahuna	130	130	130	130	130	72	83	84	84
Hinuera	116	116	126	129	132	47	55	57	60
Te Poi	138	138	150	158	171	59	69	73	81
Total*	21,938	22,733	24,134	24,820	25,198	9,003	9,961	10,254	10,551
¹ Figures from CM 2283973									

Figure 5-1: Projected Population and Dwellings (CM 2283973).

Note: The population and dwelling projections for Tahuna, Hinuera and 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 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.

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	Tower Road
Waste-water	1,870	2,123
Water	660	425
SW	100	400
Roading	1,440	330
Total	4,070	3,278

Data source: RM 1864486

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

Capital works schedules for the each structure plan area are:

Eldonwood south

Service	Infrastructure Project	Year	Estimate \$000s
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			
Service	Infrastructure Project	Year	Estimate \$000s
Wastewater	Tower Road Pump stations (3 pumps)	2022/23	880

	300mm Rising falling main WWPS to WWTP WWTP capacity upgrade		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

5.2 Stormwater Trends

There are significant challenges for the future management of stormwater and it is likely that additional stormwater management techniques will need to be adopted other than discharging directly to receiving waters due to capacity constraints. These additional management options will rely on:

- Soak pits
- Private property Onsite stormwater detention including rainwater collection tanks
- Offsite stormwater detention and storage
- Eco friendly urban development to reduce the effects of runoff

Council has identified growth areas within its District Plan and these are included in Plan Change 47. In selecting these areas consideration has been given to locating in areas with good soakage or easy access to larger water courses

Contamination of stormwater may become an issue in future and may require the retrofitting of treatment devices or further control on stormwater discharged to the Council's stormwater system from industrial or high risk sites.

5.2.1 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.

Section 5: Growth and Demand

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 stormwater, we require that developers apply the 16.8% increase in rainfall into the design of their stormwater infrastructure, the longer dry spells and higher temperatures is likely to lead to an increasing demand for water for irrigation and consumption.

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

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

Stormwater management techniques (Demand Management) can be divided into practices that may be referred to as "structural" or "non-structural" practices (sometimes referred to as asset or non-asset solutions).

Structural practices are those that reduce or mitigate changes to stormwater (that have already occurred) using constructed treatment devices.

Non-structural practices are those that prevent changes to the quantity or quality of stormwater (before it can occur) using "low impact designs", management practices, or planning regulations. Non-structural practices can be subdivided into design practices that:

- Reduce the quantity of stormwater runoff from a Catchment
- Reduce or minimize the risk of contaminants coming into contact with stormwater

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

Strategy	Objective/ Description
Operations	Develop and manage a programme for regular maintenance of stormwater outlets, drains and other infrastructure including pre-storm inspections. Increase responsiveness to flooding complaints
	Minimising Increased Urban Run-off effects. Increased run-off may also come

Strategy	Objective/ Description							
	from the possible increases in housing density and sealed or hardstand areas.							
	 The instigation of an integrated renewals strategy associated with the stormwater system that considers the effects and consequence of: Use of modelling of the appropriate catchments to ascertain effects and constraints within the systems Identification of the extent of the problems and prioritising them, along with defining the design standard and costing options. Reviewing the design standards to manage flooding and including in Councils Development Manual or Regional Infrastructure Technical Standards 							
	The use of the District Plan to control the areas in which development can occur and the associated density that is permitted							
	Adopt and enforce appropriate regulations:							
Regulation	 Protect property from flood damage and the environment from illegal discharges by adopting and enforcing appropriate regulations for housing and subdivision development, and for commercial/industrial operations Flood protection measures include that use of regulations to set minimum floor levels for buildings and standards to ensure adequate secondary flow paths and detention areas 							
	 Use of stormwater control measures that retain the pre-development catchment characteristics for ground soakage and runoff 							
	 Introduction of techniques such as on site detention and increased onsite rain water storage and usage 							
Education	Implementation of Stormwater awareness programmes aimed at increasing community awareness of the benefits of reducing direct stormwater disposal into the wastewater system and litter contamination and control.							

5.4 Modelling

Network and catchment modelling will be used as part of any catchment upgrades in conjunction with the stormwater catchment studies. The catchments programmed for modelling will be assessed by a risk based assessment using Council staff knowledge and property owners concerns via validated Stormwater/Wastewater Questionnaire results.

The network modelling will provide staff with:

- Assist developing a targeted Capital Works programme and will improve confidence in the capital works programmes
- Determine 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

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. This information also provides a more robust system to calculate and validate development contributions.

6 Lifecycle Management Plan

6.1 Description of Stormwater Activity

This section of the plan covers the rationale for ownership of the Stormwater assets and 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 Stormwater Activity

We have stormwater systems in the townships of Matamata (including Waharoa), Morrinsville, Te Aroha and Hinuera. Refer to the map below:



6.2.1 Summary of Stormwater Assets

This summary of Assets Table was updated from AssetFinda information in May 2017.

	Plant Assets			Point Assets			Line Assets						
	Overland Flow Paths	Detention Ponds	Pump Stations	Inspection Chambers	Manholes	Wingwalls	Gravity Mains (m)	Channel (m)	Culverts (m)	Open Drain (m)	Other (m)	Service (m)	Soakage Trench (m)
Matamata	1	1		3	623	17	37,486			79	29	2,800	521
Waharoa		1		2	43	50	4,039			823		145	
Morrinsville		3		2	625	32	33,410		86	2,397	193	3,140	
Te Aroha		1	1	20	335	67	23,324	2,294	811	6,971	28	890	
Hinuera					6		181		7		29		
Total	1	6	1	27	1,623	172	98,441	2,294	903	10,271	279	6,975	521

This Activity Plan excludes Stormwater Roading Assets, some of which are still included in the Stormwater register (e.g. catchpit leads and soak holes).

The Stormwater system is made up of the following components:

- Gravity Mains
- Service Lines (Property connections)
- Channels, culverts, open drains and soakage trenches
- Inspections chambers, manholes and wingwalls
- Pump stations, detention ponds and overland flow paths.

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.

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.

Asset Data – Confidence Grades

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

Overall Confidence Data

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain	Source
Overland Flow Path		√			Asset Finda
Detention Pond		1			~
Pumping Stations		1			~
Inspection Chamber			1		~
Manholes		√			~
Wingwalls		√			~
Gravity Mains		√			~
Channels		√			~
Culverts		1			~
Open drains		√			~
Service Lines (kms)		√			~
Soakhole or trench			√		~

Section 6: Lifecycle Management

Asset Type	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Overland Flow Path										\checkmark
Detention Pond										\checkmark
Pumping Stations										\checkmark
Inspection Chamber							\checkmark			
Manholes										\checkmark
Wingwalls								\checkmark		
Gravity Mains								\checkmark		
Channels								\checkmark		
Culverts									\checkmark	
Open drains								\checkmark		
Service Lines (kms)								\checkmark		
Soakhole or trench							\checkmark			

Overall Data Completeness

Condition & Performance for Critical and Non Critical Assets

Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain
Overland Flow Path		\checkmark		
Detention Pond		\checkmark		
Pumping Stations		\checkmark		
Inspection Chamber			\checkmark	
Manholes		\checkmark		
Wingwalls			\checkmark	
Gravity Mains			\checkmark	
Channels		\checkmark		
Culverts		\checkmark		
Open drains			\checkmark	
Service Lines (kms)			\checkmark	
Soakhole or trench			\checkmark	

Further information is as follows:

:

- **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.

• **Performance:** The performance of assets is regularly monitored via Council's telemetry system, plant operating systems and by reports from its Complaints Register. Performance data is not currently recorded in AssetFinda.

Council is in the process of moving most monitoring records to Infrastructure Data which 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 the 2012/13 financial year and the proposals peer reviewed by Neville West of Waugh Infrastructure Management Ltd. AssetFinda was updated in 1 July 2014 with the new data.

• Valuation: The valuations of all reticulation assets (except buildings) were revised towards the end of the 2017/18 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.

6.3 Matamata Stormwater Scheme

6.3.1 Scheme Overview

Matamata stormwater scheme services the township of Matamata with the reticulation shown below. The reticulated system is not in all streets with a number of properties using on site soakage.

The reticulation consists of a variety of pipes and drains all installed at different times, the majority of pipe material is concrete. Stormwater is discharged directly into the Mangawhero Stream, Waihekau Drain and the Peria Drain.



System Information – Matamata

Stormwater reticulation		Lines	Length (m)
Number of manholes	623	Gravity Main	37,418
Retention Ponds	2	Open Drain	79
Replacement Cost		Other	29
Total Scheme	\$26,540,119	Service	2800
Stormwater mains	\$16,363,447	Soakage Trench	521

6.3.2 Catchments

Matamata Township is located on the flat topography of the Matamata Piako plains. It is predominantly residential with a commercial area and a light industrial area towards the eastern boundary along Tauranga Road. Matamata has three principle catchments, as identified below.

Central Catchment

The central catchment covers approximately 268 ha and incorporates the commercial zoned areas of Matamata as well as the adjacent urban residential land. Approximately 198 ha of this catchment are serviced by on-site Stormwater soakage systems. The remaining 70 ha drains via Stormwater catch pits and pipes to the Tawari detention pond before discharging to the Waihekau Drain.

Tauranga Road Catchment

The Tauranga Road catchment covers approximately 145 ha and is located at the eastern corner of Matamata. It contains a variety of land uses covering urban residential, rural and industrial uses, and drains via Stormwater catch pits and pipes to the Mangawhero Stream. Catchment topography is generally flat. The Mangawhero Stream is a substantial stream of rural origin and flows to the east of Matamata Township.

Western Drain Catchment

The Western Drain Catchment comprises three small sub-catchments of approximately 30 ha total area, and these drain via Stormwater catchpits and pipes to the Peria Drain on the western edge of Matamata. The Western Drain Catchment is made up of predominantly urban residential land uses and has a generally flat topography. Similar to the Central Catchment, some residential properties are serviced by onsite Stormwater soakage systems, and are not connected to the municipal reticulation system.

6.3.3 Reticulation

Due to lack of plans for assessing installation dates (plans were destroyed as considered not pertinent) 24% of stormwater pipe length has no known install date. Mains age used for the asset register where not known has been averaged i.e. date of about 1977 (average date) has been used.

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

Diameter	Catchpit	Gravity Main	Open Drain	Other	Service	Soakage	Grand Total
1	Lead					Trench	
100	86	36			1,648		1,770
150	175	203			902		1,280
175	78						78
200	6	178					184
225	4,021	5,615		29	140		9,804
250		140					140
255		3					3
275	2						2
300	1,235	11,322			370		12,928
325		46					46
375	1,721	5,935	79		99		7,834
450		4,096					4,096
475		43					43
520		95					95
525		1,076					1,076
600		2,948					2,948
675		530					530
700		162					162
750		1,963					1,963
825		438					438
900		2,175					2,175
1050		216					216
1200		930					930
1350		108					108
1370		595					595
2000		361					361
3000						1,035	1,035
Grand Total	7,323	39,214	79	29	3,159	1,035	50,840

Table 6-1: Lengths of Pipe Materials within Matamata Reticulation (CM2399860)

6.3.4 Retention Ponds

There are two retention ponds in Matamata as below:

- Tawari Pond (behind the Tawari Water Treatment Plant) which receives the flows from the reticulation system within the central catchment and discharges into the Waihekau Drain which in turn discharges into the Waitoa River north of SH 26 at Waitoa. This is covered by its own resource consent.
- Rockford Street Pond which receives the flows from the recent extension of the industrial area before discharging into the adjacent pipeline which in turn discharges to the Mangawhero Stream.

6.3.5 Overland Flow Path

An overland flow path was constructed in 2009 along the reserve between Matipo St and the Industrial Area and through land owned by Council to meet up with a drain that connected to the Managawhero Stream. This overland flow path takes the flow not able to be handled in the existing pipe through the industrial area and conveys it overland to the Mangawhero Stream.

6.3.6 System Capacity

The discharge of stormwater in Matamata has been of concern for many years. Matamata is generally flat with very little or no natural water courses in the township. The nearest significant natural water courses are the Mangawhero Stream to the east and the Waitoa River to the west.

In additions there are two land drainage systems on the boundaries; the Waihekau Drain on the northern side which is the point of discharge for the Tawari Retention Pond and the Peria Drain along the western boundary. Both these appear to have been constructed to drain farm land and lack capacity for urban development.

A report commissioned in 1964 by the Matamata Borough Council looked at options to service the Burwood Road area and to divert the flow from the Waihekau Drain. This proposed an outlet to the Mangawhero stream by either gravity or a mixture of gravity and pump stations.

A further report in 1972 by the Thames Valley Drainage Board addressed the problem of stormwater disposal from Matamata and the effect on Board drains, and recommended that stormwater from the Matamata Township and Peria Drain catchment be discharged into the Mangawhero Stream and Waitoa River respectively.

A further report was commissioned in 1974 by the Matamata Borough Council to look at the disposal stormwater into the Waihekau Drain in particular.

It is clear from these reports and others prepared since amalgamation (particularly in 1993-94 and in 1996) that the effective capacity of stormwater systems in Matamata is generally for storms with a return period of one year only. Consequently runoff from longer return period storms will pond in roadways and in some cases on private property.

The problem is compounded by the lack of suitable over land flow paths which means that stormwater must remain ponded until the limited capacity pipes systems (or soakage) can remove the water.

All future drainage is likely to have to be by soakage systems due to the cost of providing outlets to a suitable watercourse

6.3.7 Resource Consents

Number	Description	Issued	Expires
105061	Divert & discharge urban stormwater runoff, and associated contaminants, at multiple locations to land, the Western Drain, Waihekau Drain, Mangawhero Stream, and use discharge structures within the vicinity of Matamata urban area	21/01/2005	31/08/2024
108780	Dam water and use a dam structure on the bed of the Waihekau Drain for stormwater control and detention purposes in the vicinity of Tawari St Matamata	21/01/2005	31/08/2024

6.4 Morrinsville Stormwater Scheme

6.4.1 Scheme Overview

Morrinsville Stormwater Scheme services the township and community of Morrinsville with the reticulation shown in Figure 28 below. The reticulated system is not in all streets with large number of properties relying on site soakage and discharges to the kerb and channel.

The reticulation consists of a variety of pipes and drains all installed at different times, the majority of pipe material is concrete. Stormwater is discharged directly into the Morrinsville and Waitakaruru Streams, and other small tributaries of the Piako River.



System Information – Morrinsville

Stormwater reticulation		Lines	Length (m)
Number of Manholes	625	Gravity Main	33,394
Retention Ponds	2	Open Drain	2,397
Replacement Cost		Other	
Total Scheme	\$14,412,244	Service	3,008
Stormwater Mains	\$12,342,165		

6.4.2 Catchments

Morrinsville is located on the Matamata Piako Plains approximately 25 km northeast of Hamilton. The township is a typical agricultural centre, comprising rural, residential, commercial and light industrial land use activities.

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The municipal stormwater system comprises a reticulated catchpit and pipe system which drains stormwater to the Morrinsville and Waitakaruru Streams, and other small tributaries of the Piako River. Morrinsville has four principle catchments and seven minor catchments, as identified below.

Western Catchment

The Western Catchment comprises approximately 405 ha and contains much of central and western Morrinsville. It can be further divided into three sub-catchments and these are identified as W1, W2, and W3. Sub-catchment W1 contains the northern and central parts of Morrinsville and is predominantly used for residential purposes. W2 contains the northwestern areas of Morrinsville and is predominantly rural with some residential development. W2 includes the upper reaches of the Morrinsville Stream. Sub-catchment W3 contains the southern area of Morrinsville and includes a mixture of rural, residential, commercial and industrial activities, W3 drains to the confluence of the Morrinsville/Waitakaruru Streams.

Northeast Catchment

The Northeast Catchment comprises approximately 65 ha of rural, residential and reserve land. It has typically undulating contour and stormwater drains to a small unnamed tributary of the Piako River, north of State Highway 26.

East Catchment

The East Catchment comprises approximately 23 ha of rural and residential land which is currently undergoing further development. The topography is steep and drains to the Piako River in the east.

Southeast Catchment

The Southeast Catchment comprises approximately 21 ha of residential land, and drains to the Piako River in the southeast.

6.4.3 Reticulation

Due to lack of plans for assessing installation dates (plans were destroyed as considered not pertinent) 61% of stormwater pipe length has no known install date. Mains age used for the asset register where not known has been averaged i.e. date of about 1977 (average date) has been used.

Dia.	Catchpit	Culvert	Gravity Main	Open Drain	Service	Soakage	Subsoil	Grand Total
Ψ ¹	Lead					Irench	Drains	
100	293		253		4,401		2,235	7,182
150	233		1,145		330			1,707
200	141		550					692
225	6,007		6,448		35			12,490
250	24		474					498
255	15							15
300	1,533	6	10,815	2,170				14,524
350			92					92
375	75	20	4,629					4,724
400			170					170
450	10		2,670					2,680
475			47					47
500	13		133					146
525			2,389					2,389
550			147					147
600			1,706	227				1,933
675			471					471
700			94					94
750			1.351					1.351
800			305					305
825		43	507					550
875			109					109
900		16	1.033					1.049
1050			400					400
1200			279					279
1350			137					137
3000			157			170		170
Grand						170		1/0
Total	8,343	86	36,352	2,397	4,765	170	2,235	54,349
Total								

Table 6-2: Lengths of Pipe Materials within Morrinsville Reticulation (CM2399860)

6.4.4 Retention Ponds

There are three retention ponds in the Morrinsville Area that were constructed as part of subdivisions and which do not appear to be covered by resource consents, as follows:

- Holmewood Park which receives the flows from the Homewood subdivision and discharges into the Piako River.
- Golf Course Road which lies in a tributary of the Piako River and detains the flow from the upstream subdivision.
- Sunridge Park which receives the flows off the Sunridge Park subdivision and discharges into the Morrinsville Stream.

6.4.5 Overland Flow Paths

There is one small overland flow path constructed as part of a subdivision through 14 Burmester Place. However no provision was made in the kerb or footpath for the flow off the road to reach the OFP and the owner has filled it in.

6.4.6 Resource Consents

Number	Description	Issued	Expires
105063	Divert and discharge urban stormwater runoff, and associated contaminants, at multiple locations to land, the Morrinsville Stream, the Waitakaruru Stream, Piako River and unnamed tributaries, and use discharge structures within the vicinity of Morrinsville urban area that is reticulated by the Morrinsville municipal stormwater system	21/01/2005	31/08/2024

6.5 Te Aroha Water Scheme

6.5.1 Scheme Overview

Te Aroha Stormwater Scheme services the township of Te Aroha with the reticulation shown below.

The reticulation consists of a variety of pipes and drains all installed at different times, the majority of pipe material is concrete. There is one pump station located in the reticulation. Stormwater is discharged directly into the Tunakohoia, Tutumangoa Streams and the Waihou River or its flood plain.



System Information – Te Aroha

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System Information – Te Aroha

Number of manholes	335	Gravity Main	25,362
Number of pump stations	1	Open Drain	6,971
Replacement Cost		Other	28
Total Scheme	\$12,748,660	Service	890
Stormwater mains	\$11,139,127	Soakage Trench	

6.5.2 Catchments

Central Catchment

Te Aroha's Central Business District is located within the Central Catchment which makes up a total land area of approximately 74 ha. Five piped stormwater discharge outlets discharge from this catchment to the Waihou River.

Southern Catchment

The Southern Catchment comprises approximately 56 ha of residential and rural/residential land. Six stormwater discharge outlets discharge to the Tutumangoa Stream/Rewi Street Drain and the Waihou River. The Tutumangoa Stream/Rewi Street Drain is characterised by a highly modified concrete lined channel through its urban reach, reverting to a less modified stream channel in its lower reaches. This channel is maintained by the Regional Council as part of the Waihou Valley Scheme.

Western Catchment

The Western Catchment includes all the area of Te Aroha on the western side of the Waihou River, and comprises approximately 119 ha of residential and rural land. Some of the existing rural land is zoned for residential land use purposes, with the view of providing for future urban development in this catchment. The Western Catchment has four stormwater discharge outlets that discharge to the Waihou River.

6.5.3 Historic Influences

On 16-17 February 1985, heavy rain fell in the Te Aroha area. A huge jam of debris built up at the top of several streams high on Mt Te Aroha behind the town. On the 17th, the debris dams gave way, sending an avalanche of water, mud, boulders and logs through the centre of town. The flood killed three people. Most shops in town were damaged and more than 50 homes were hit.

In 1988 Council commissioned a flood hazard assessment of Te Aroha which made a number of suggestions for reducing the flood hazard risk. Significant flood control structures were installed (and are maintained) by the Regional Council on the Tunakohoia Stream that included concrete floodway's and debris traps.

The other flooding issue for Te Aroha was in the Aroha View area. An investigation showed that although this area was largely drained to the north via the Suburban Outlet, it was affected by the backing up of the Waihou River from the south during high flows. In 2007 larger pipes were installed to redirect all the flows to the south and a flood gate was installed at the discharge alongside Stanley Road South. A pump station was installed to drain the area when the flood gate closes.

6.5.4 Reticulation

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Due to lack of plans for assessing installation dates (plans were destroyed as considered not pertinent) 75% of stormwater pipe length has no known install date. Mains age used for the asset register where not known has been averaged i.e. date of about 1977 (average date) has been used.

Dia.	Catchpit	Channel	Culvert	Gravity Main	Open Drain	Other	Service	Grand Total
-T	Lead							
100	49			299	79		1,074	1,500
150	229			814		24	3	1,069
180				4				4
200	852		26	2,077			5	2,960
220				6				6
225	1,015	50	18	2,943			8	4,035
250	124			1,257				1,382
260	10							10
275				45				45
300	689	1,938	344	7,000	6,363			16,334
325				11				11
335				151				151
350		48	18	177				242
375	46			1,205	494			1,746
380				27				27
390				50				50
400	14			619				633
450				2,675				2,675
475				23				23
500	5		29	98	40			171
525				565				565
550				116				116
575				30				30
600	8		112	800		3		923
675			13	97				110
700			41					41
750				405				405
800				14				14
825			17	262				278
900				708				708
1000		76	103					179
1050			81	904				984
1200				105				105
1300			23					23
1350				198				198
3000		184	20					204
Grand Total	3,042	2,295	844	23,684	6,975	28	1,090	37,958

Table 6-3: Lengths of Pipe Materials within Te Aroha Reticulation (CM2399860)

6.5.5 Pump Station

Te Aroha has one pump station located at the intersection of Stanley Ave and Spur St. This pump station has a Sykes CP 200 pump powdered by a John Deere Diesel Motor and pumps the water from the drainage south of Aroha View Ave into the Spur St drain when the river levels are high.

The pump is portable and is able to be removed for other uses as it is expected to be required only every few years.

A floodgate at the south end of this line prevents the river water from back flowing into the pump station.

Number	Description	Issued	Expires
105062	Divert and discharge urban stormwater runoff, and associated contaminants, at multiple locations to land, the Tunakohoia Stream, Rewi Street Drain, Waihou River, and use discharge structures within the vicinity of Te Aroha urban area that is reticulated by the Te Aroha municipal stormwater system	21/01/2005	31/08/2024
112499	Land use Consent - Construct a stormwater outfall and bank stabilisation works on the bank of the Waihou River near Lawrence Ave, Te Aroha	13/05/2005	15/04/2040
112530	To construct a stormwater discharge outlet within the bank of the Waihou River for subdivision development purposes in the vicinity of Stanley Ave Te Aroha	27/06/2006	18/04/2035
112754	Land use Consent - To construct a stormwater discharge structure on the bank of the Waihou River for subdivision development purposes in the vicinity of Ritchie St Te Aroha	12/07/2005	14/06/2035

6.5.6 Resource Consents

6.6 Waharoa Stormwater Scheme

6.6.1 Scheme Overview

Waharoa Stormwater Scheme services the township of Waharoa with the reticulation shown below. The reticulation consists of a variety of pipes and drains all installed at different times, the majority of pipe material is concrete. Stormwater is discharged into an open drain tributary of the Waihekau Stream.



System Information – Waharoa

Stormwater reticulation		Lines	Length (m)
Number of manholes	43	Gravity Main	4,024
Retention Ponds	1	Open Drain	823
Replacement Cost		Other	
Total Scheme	\$1,486,528	Service	145
Stormwater mains	\$1,165,111	Soakage Trench	

6.6.2 Catchments

Waharoa is a very small township that is bisected by a railway line and located approximately five kilometres north of Matamata. A disused dairy factory that is now being used as a transport centre dominates the western half of the township. This site has its own stormwater discharge consent.

Eastern Catchment

The eastern half of the township comprises two catchments (North and South Catchments) which have a combined area of approximately 87 ha. Both catchments drain via stormwater catchpit and pipe systems to the same open drain tributary of the Waihekau Stream.

Western Catchment

The western area is not currently included in the stormwater rating area or the comprehensive discharge consent. A development along Dunlop Road has resulted in a

Section 6: Lifecycle Management Plan

stormwater system that Council has taken over. This discharges via a retention pond to the Waitoa River and currently this is maintained by the developer but reverts to Council in due course at which time an extension of the rating area is required

6.6.3 Reticulation

Diameter	Catchpit	Gravity Main	Open Drain	Service	Grand Total
-T	Lead				
100		32			32
150	2	58			61
200		12			12
225	79	1,321	79		1,479
300	149	828	197		1,173
375		791	31	34	857
400		38			38
450		221	82	110	413
525		142			142
600		435	434		869
675		192			192
1250		22			22
Grand Total	230	4,092	823	145	5,290

Table 6-4: Lengths of Pipe Materials within Waharoa Reticulation (CM2399860)

6.6.4 Resource Consents

Number	Description	Issued	Expires
105064	Divert and discharge urban stormwater runoff, and associated contaminants, at multiple locations to land, the Waihekau Stream, and use discharge structures within the vicinity of Eastern Waharoa urban area that is reticulated by the Waharoa municipal stormwater system	21/01/2005	31/08/2024

Note – when the western retention pond and outlet transfers to Council the resource consent issued to the developer will also transfer to Council.

6.7 Hinuera Stormwater

6.7.1 Overview

There is a limited stormwater system in Hinuera which appears to have drained the stormwater from the now former Dairy Factory and piped it north-west along the State Highway and under the railway to a point on Hinuera Road. The system is recorded as a roading asset.

Council would have taken over this when it took over the former Dairy Factory water supply.



System Information – Information

Stormwater reticulation		Lines	Length (m)
Number of manholes	6	Gravity Main	181
Replacement Cost		Open Drain	
Total Scheme	\$76,537	Other	
Stormwater mains	\$43,926	Service	

6.7.2 Reticulation

Table 6-5: Lengths of Pipe Materials within Hinuera Reticulation (CM2399860)

Diameter 🚅	Culvert	Gravity Main	Other	Grand Total
375		182		182
438			29	29
900	7			7
Grand Total	7	182	29	218

6.7.3 Resource Consents

There are no resource consents covering this system

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 Stormwater 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

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

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

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 Stormwater 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 Stormwater services 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 Stormwater effectively and processes for the analysis and interpretation of this data support all management activities.

6.9.2 Management Strategies

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

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

Strategy	Objective/ Description		
Strategic Planning			
Human Resources	Develop the professional skills of the staff through adequate training and experience 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		

Strategy	Objective/ Description
Strategic Alignment	This Activity Plan will support the achievement of relevant Community Outcomes for Matamata-Piako District
	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 Stormwater to the achievement of Community Outcomes is shown in this Activity Plan
Service Levels	A clear statement of Stormwater services provided and standards to be achieved that directly link to and support the stated community outcomes are shown within this AP
	performance management framework for the Stormwater activity and will be used for performance and monitoring purposes
	demonstrate how the activity supports those 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
Sustainable	community Ensure all planning for the management, operation, maintenance, renewal
Management	and development of the Stormwater activity is compatible with sustainable management principles
	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
Data Managem	nent and Utilisation
Network and flood hazard Modelling	Instigate the development of computer-based hydraulic models of the Stormwater system. Computer models of the Stormwater reticulation are required to enable Matamata-Piako District Council to:
	 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 entions for upgrading the Stormwater system
Data	Data collection programmes (condition, performance, asset registers) closely
Collection	aligned with business needs will be implemented in accordance with documented quality processes
	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:
	 Asset attribute information Asset performance data
	 Asset condition data
GIS Data	GIS data will continue to be the subject of defined quality assurance

Strategy	Objective/ Description
	processes 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 Support the progressive and systematic review of existing data on the GIS system
Business Proc	resses
Activity Plan Updates	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) The scope of the review will be influenced by changes in Community Outcomes for Matamata-Piako District, service standards, improved
	corporate strategy/ policy and process
Risk Management	Risk Management is an essential part of Asset Management. Stormwater activity risks will be managed by implementing a Risk Management Plan for the Stormwater activity and the implementation of risk mitigation measures to maintain risk exposure at agreed levels
	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
Infrastructure Asset Valuation	Perform valuations in a manner that is consistent with national guidelines and Matamata-Piako District Council corporate policy for valuation cycles which current are yearly aligned with LTP requirements
	Asset valuations are the basis for several key asset management processes including asset renewal modelling and financial risk assessments. Valuations of the Stormwater system will be carried out based on data from the AMS system to ensure auditability and alignment with other processes
Statutory Compliance	Implement quality plans that identify legal obligations and processes adopted to achieve statutory compliance
Quality Assurance	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
Monitoring	
Level of Service Standards	Establish monitoring procedures to ensure stormwater 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 Stormwater activity and monitor achievement of these standards
Asset Performance	Matamata-Piako District Council will establish a framework to enable the performance of the stormwater assets to be monitored as an input to asset renewal and asset development programmes. The Monitoring includes: – Customer service requests

Strategy	Objective/ Description
	 Asset failure records Asset Maintenance records Compliance with Resource Consents Critical asset audits Legislative compliance
Financial Mana	agement
Budgeting	Prepare all expenditure programmes for the stormwater activity in accordance with Council funding and budget preparation policies and procedures for 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 Stormwater activity budget in accordance with statutes and corporate policy This will involve: 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 Stormwater activity is managed in a financially sustainable manner over the long term. The financial requirements for the provision of the Stormwater activity sustainably and to acceptable standards over the long term will be identified and provided for in draft budgets. These requirements include: Management of the Stormwater activity Operation and maintenance of the Stormwater systems Asset replacement Asset development to ensure that the ability of the Stormwater 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.

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

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

A Stormwater Activity Group (SWAG) 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 stormwater 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 Stormwater 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 stormwater system

- **Condition Maintenance** Maintenance actioned as a result of condition or performance evaluations of components of the Stormwater 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 Stormwater 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 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.

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۹,												
		Asset ID	Short ID	Category 🕎	Status 🕎	Asset Type 🛛 🔻	Material 🔻	Diameter 🔻	Height 🔻	Quantity Length	US Invert	DS Invert
10		Q	Q	۹	۹	۹	٩	۹	۹	Q	Q	Q
*		51588	6	None	Existing	Water Main	Asbestos Cement	100	100	135.9	0	0
ñ		51589	7	None	Existing	Water Main	Asbestos Cement	100	100	81.97	0	0
		51593	8	None	Existing	Water Main	Asbestos Cement	100	100	13.5	0	0
ň.		51594	9	None	Existing	Rider Main	Galvanised	50	50	142.73	0	0
ni		51596	10	None	Existing	Water Main	Asbestos	100	100	14.85	0	0
•		51608	11	None	Existing	Water Main	Cast Iron	100	100	10.47	0	0
Ð		51609	12	None	Existing	Water Main	Cast Iron	100	100	123.04	0	0
		51613	13	None	Existing	Water Main	Asbestos Cement	100	100	247.61	0	0
2		51614	14	None	Existing	Water Main	Steel	100	100	138.86	0	0
2		51621	15	None	Existing	Water Main	Asbestos Cement	100	100	61.36	0	0
		51622	16	None	Existing	Water Main	Asbestos	100	100	77.87	0	0

A screen shot of the AssetFinda data is presented below.

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6.10.4 Service Delivery Structure

6.10.5 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 Stormwater 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 Stormwater Services 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;
- 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 Water and Wastewater Services as a whole, including projects and delivery of the water safety plan. The management of stormwater system will remain the responsibility of Kaimai Valley Services (KVS).

6.10.6 Operations and Maintenance Standards

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

- The Matamata-Piako District Council Development Manual and the Regional Infrastructure Technical Standard.
- The Matamata-Piako District Council Infrastructure Code of Practice which provides standards for materials and construction of piped Stormwater systems
- Relevant Resource Consents and the Resource Management Act 1991
- Transit New Zealand 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 Stormwater infrastructure is maintained.

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

- 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 Log Term Plan. This provides more consistency for ratepayers and time to plan budgets.

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

The renewal/replacement of Stormwater assets is undertaken in accordance with the Matamata-Piako District Council Infrastructure Code of Practise. This code is to be replaced in the near future by the Regional Infrastructure Technical Specifications (RITS). The RITS presents a more comprehensive coverage of the standards than the MPDC document.

For the purpose of developing asset renewal programmes the stormwater 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 stormwater outlets and pump stations, which are separately identifiable, generally above ground and which can readily be inspected.

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. A CCTV assessment programme is proposed starting in 2018 to allow more accurate assessment of pipe condition and 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.

6.12 Capital Improvement

Capital improvement provides for an increase in the service capability of the stormwater system. Many of the existing pipe systems were designed for the 2 year return period storm and to upgrade to the present 10 year return period storm is estimated to be in the order of \$150 million. This does not take into account that many systems were designed to take the flow from the road only and not from private property.

An increase in the capacity of many systems may not be feasible due to grade and easement constraints as well as restrictions of capacity in the receiving water.

In Matamata it has been previously estimated it would cost \$100 million to provide outlets to the river systems capable of receiving an increase in flow

Our present policy is for new developments to be drained to soakage unless there is spare capacity in the relevant stormwater system.

Capital improvements and asset renewal can occur simultaneously. The purpose of asset renewal is to prevent a decline in the service potential of the assets whereas capital improvements are concerned with the service improvements measured by asset performance.

6.13 Asset Disposal Strategies

Assets, which are disposed of, have generally reached the end of their useful lives and have minimal or no residual value. When a stormwater asset is abandoned or replaced the Geographic Information System and fixed asset register are updated. A system of job number creation and asset identification is used to document this process.
Redundant pipes are removed where their alignment clashes with replacement pipelines or where their existence is considered dangerous. Abandoned stormwater pipelines have possible future value for other purposes (such as ducting for cabling). As the extent of this value (if any) is uncertain it is not recognised in the asset valuation.

In some situations there can be revenue resulting from asset disposal.

6.14 Data Systems

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



6.14.1 AssetFinda

The AssetFinda (formerly called BIZEASSET) Asset Management system 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) and exporting the asset data to a XLSX file and then using pivot tables to aggregate or disaggregate data.

6.14.2 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.

6.14.3 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.

6.14.4 Network Modelling

Only limited network modelling has been undertaken as the invert levels of the pipes systems are not readily available and will have to be field surveyed.

6.14.5 CIVICA

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. TRIM documents can also be linked to assets.

6.14.6 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.

6.15 Stormwater Plant Assets

6.15.1 Treatment

The treatment of stormwater discharges is currently limited to the capture of sediment and litter at sumps/catch pits and to the limited use of swales drains and the like.

6.15.2 Detention Ponds

We have a small number of detention ponds which are to reduce the peak discharge into rivers and streams to avoid any additional flooding. They have a secondary effect of retaining some sediment.

6.15.3 Soak pits

Our stormwater discharge consents restrict the discharge of stormwater into the existing reticulation and into watercourses to levels that do not have a detrimental effect downstream to control the level of flooding.

Soakpits are increasingly the only option left for the disposal of stormwater from growth areas or land being subdivided but this requires the existence of sufficient soakage available on site.

6.15.4 Outlet Structures

Outlet structures discharge stormwater to earth drainage channels, natural watercourses or onto land. They include but are not limited to concrete headwall structures, gabion baskets filled with rock as scour protection, flumes, energy dissipation structures and devices for anchoring pipes on steep slopes. The maintenance of these is an important aspect to the management of the stormwater reticulation.

6.15.5 Street Sumps

These are used to drain water from roads and other formed areas. Road sumps are technically not part of the stormwater system but are roading assets. The regular removal of

sediment from street sumps is a requirement of Council's stormwater discharge consents as this prevents the material entering watercourses. They are included in the stormwater asset base at no value for convenience but valued in the roading database.

The ownership and maintenance of road drainage assets is set by NZTA and was clarified in a MPDC policy document in Feb 1998 titled "Stormwater Disposal - Criteria for Apportionment of Maintenance Charges".

6.15.6 Open Drains

Open drains are legally the responsibility of the property owner to maintain.

The details of the drains within the four stormwater schemes are limited to length. Drains are scheduled for cleaning (where required) twice a year. Drains are not depreciated as they are maintained in perpetuity.

6.15.7 Stormwater Plant

These items comprise the Spur St pump station in Te Aroha, the Detention Ponds in Matamata, Waharoa and Te Aroha (Millar St 2017), and the Overland Flow Path in Matamata.

The earthworks associated with detention ponds and overland flow paths cannot be capitalised so it is only other items associated with these items that are included. Resource consents associated with the stormwater activity can be capitalised and added at the next revaluation. Replacement consents can then be funded from the renewal account.

The present consents do not expire until 2024 and other associated consents for structures expire between 2036 and 2040. These later consents are for structures installed since the current consents were issued and can be included in the comprehensive consents when they are renewed so these do not need to be capitalised.

The remaining life and replacement cost of the existing items as at 1 June 2017 is as follows.

Rem Life	Electrical	Landscaping	Other Components	Pump	Structure	Grand Total
2020		84,765				84,765
2021	5,021			143,425		148,446
2024			8,768			8,768
2046	11,325					11,325
2060		88,044				88,044
2065					6,385	6,385
2086					61,031	61,031

Section 6: Lifecycle Management Plan

2089					11,398	11,398
2090					69,946	69,946
2109					182,483	182,483
Total	16,346	172,809	8,768	143,425	331,243	



Stormwater Plant Renewal Costs versus Years

The significant items over the next 30 years are the landscaping at the Matamata Overland Flow Path and the diesel stormwater pump at Spur Street in Te Aroha.

The renewal profile includes the resource consents which these all expire in 2024. Total replacement cost SW plant is \$585,506

6.16 Stormwater Reticulation

6.16.1 Stormwater Pipe Materials

The total stormwater reticulation comprises a range of materials but predominantly concrete. Quite a high proportion is listed as "unknown" which relates to the difficulty of locating asbuilt records.

However these are given the same life as the worst case type of pipe material so that the renewal funding is not at risk.

Material	Length (m),	Length (m),	% Total
	2018 AMP	Current	
Acuflo	189	190	0.1%
Aluminium	57	57	0.0%
Aquatunnel	520	1,205	0.8%
Asbestos Cement	5,033	5,097	3.4%
Boss Pipe	18	18	0.0%
Concrete	86,505	91,148	61.2%
Corogated Steel	30	30	0.0%
Earthenware	1,204	1,197	0.8%
HDPE	51	51	0.0%
Novaflow	378	2,613	1.8%
PVC	6,744	7,633	5.1%
Steel	69	98	0.1%
Unknown	21,095	31,293	21.0%
uPVC	3,666	8,217	5.5%
Grand Total	125,559	148,846	100%





Figure 6-1: Pipe Material Lengths (CM 2399860)

6.16.2 Stormwater Pipe Remaining Life

Section 6: Lifecycle Management Plan

We have stormwater pipe assets ranging from new to about 70 years of age. Pipelines where the installation date could not be established (about 50%) were given a nominal date of 1977).

Stormwater Pipes (length in metres) against Remaining Life expiry years (in years)

6.16.3 Stormwater Pipe and Point Assets Replacement Costs

The estimated replacement costs of the stormwater pipes and point assets are as follows:

Year	Smoothed (5 Years)	Total Retic (Lines and Points)
2022	769	0
2023	769	0
2024	769	252
2025	769	3,593
2026	769	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	0	0
2034	0	0
2035	0	0
2036	0	0
2037	28,871	0
2038	28,871	144,356
2039	28,871	0
2040	28,871	0
2041	28,871	0
2042	2,315	0
2043	2,315	8,960
2044	2,315	2,618
2045	2,315	0
2046	2,315	0
2047	300,346	1,056
2048	300,346	1,164,352
2049	300,346	0
2050	300,346	28,290

Figure 6-2: Projected Reticulation Renewal Costs (CM 2396627)

	1	1
2051	300,346	308,030
2052	212,774	0
2053	212,774	1,004,705
2054	212,774	17,085
2055	212,774	0
2056	212,774	42,078
2057	168,699	18,158
2058	168,699	452,445
2059	168,699	0
2060	168,699	30,764
2061	168,699	342,129
2062	477,551	17,377
2063	477,551	141,452
2064	477,551	1,449,200
2065	477,551	617,258
2066	477,551	162,466
2067	488,488	614,407
2068	488,488	434,358
2069	488,488	448,448
2070	488,488	433,756
2071	488,488	511,470
2072	589,204	825,765
2073	589,204	781,688
2074	589,204	135,307
2075	589,204	901,471
2076	589,204	301,787
2077	4,349,362	214,154
2078	4,349,362	20,470,726
2079	4,349,362	63,313
2080	4,349,362	0
2081	4,349,362	998,618

Stormwater Activity Management Plan 2015-2025 (updated 2017)



Figure 6-3: Reticulation Renewal Trend (CM 2396627)

Only minimal replacement of stormwater pipes is expected until the end of the 30 year strategy period. The spike in 45 years time is due to the assumed date of installation of about 50% of the pipes and it is anticipated that condition rating these pipes closer to this date will spread the actual replacement dates.

Total replacement cost of SW pipes and points is \$55,456,532 (Source: RM 1960803)

Plant Renewals



(Source: RM1958600)

Total replacement cost of SW plant is \$682,651 (Source: RM 1960803)

6.17 Stormwater General

6.17.1 Design Standards

The existing stormwater system is mainly intended to prevent flooding of house as they are designed to earlier standards. It is not designed to eliminate ponding within the catchment.

The following standards are applicable to the provision of new stormwater assets:

- MPDC Development Manual 2010
- MPDC Infrastructure Code of Practice which provides standards for materials and construction of piped Stormwater systems

There is also document available on the MPDC website, 'MPDC Stormwater Requirements' that summarises the stormwater management requirements. A copy of this document is attached in Appendix 1.

Most of the Council's stormwater systems were constructed when the design standard was for a 1 in 2 year (50% AEP) storm from the road only.

The general standard between 1990 and 2010 was for a 1 in 5 year storm (20% AEP) generally over the total catchment.

The current MPDC Design Manual requires that the primary system is designed to handle the following storm:

Rural:	1 in 5 years (20% AEP)
Residential & rural residential:	1 in 10 years (10% AEP)
Industrial areas:	1 in 10 year (10% AEP)
Business areas:	1 in 10 year (10% AEP)
All areas where no secondary flow path is available:	1 in 100 years (1% AEP)
Secondary systems:	1 in 100 years (1% AEP)

The Building Code has a requirement that habitable dwellings are not flooded in a 50 year storm so that subdivisions are also required to take this into account.

Note that the term AEP refers to the "Annual Exceedance Probability" which is the percentage chance that a flood of a certain volume will be exceeded in any given year. For instance a 1 in 5 year (20% AEP) storm is not an event that only occurs once in 5 years but is one that has a <u>20% chance of occurring every year</u>.

It should also be noted that the volume of stormwater does not increase on a straight line basis for the various storm design periods. In general in this district a 10 year storm over 24 hours has a volume 20% greater than a 5 year storm; a 50 year storm is 50% greater than a 10 year storm; and a 100 year storm is 20% greater than a 50 year storm.

This is illustrated on the following graph which also shows the various historical design standards. The volume is relative to the 5 year flow being assumed as 100.



The cost of upgrading the stormwater reticulation to modern standards is considered to be uneconomic and has been assessed as likely to be in the order of \$150 million.

However in many cases an increase in capacity may not be feasible due to grade and easement constraints etc and also due to discharge consents requirements.

This is a particular problem in Matamata which is sited a considerable distance from any sizable waterway. It has been estimated it would cost \$100 million to provide outlets to the waterways capable of receiving an increase in flow.

6.17.2 Managing SW Runoff

An integrated combination of measures is used to manage the effects of stormwater runoff.

These include:

A Primary Stormwater System - the Primary Stormwater System is designed to minimise nuisance flooding by collecting and discharging stormwater, resulting from moderate rainfall into streams and other watercourses. The Primary Stormwater System comprises of pipes, culverts, open drains, channels and soakage systems

A Secondary Stormwater System - the Secondary Stormwater System generally comprises overland flowpaths through private property and along roadways designed to convey excess floodwater with a minimum of damage when the Primary Stormwater System is overloaded.

The provision of secondary flowpaths recognises that it is impractical to provide a Primary system which can cope with extreme rainfall events. The Secondary System is designed to carry a 1 in 100-year storm.

The provision of designed Secondary Stormwater Systems is a comparatively recent practice in New Zealand and in most areas served by a stormwater system in this district there were no secondary flowpaths provided when the areas were developed.

We have investigated the feasibility of retrofitting secondary flowpaths but the difficulty is that very few roads (if any) can be used as the low points are adjacent to developed private land, and the use of reserve land is generally not practical because of relative land levels.

Planning and building controls such as restrictions on building in high flood risk areas and minimum floor heights for residential buildings. Planning and building controls play an essential part of stormwater management by ensuring an adequate level of stormwater protection is able to be practically, reliably and affordably be provided to new developments.

6.17.3 Environmental Effects

The Assessment of Environmental Effects for the four stormwater schemes consent application in March 2001 concluded that:

The Morrinsville Stream was the only watercourse that showed evidence of deterioration in water quality that could be attributed to water quality changes originating from an urban area. It cannot be concluded that the water quality problem is caused by contaminants from the stormwater network, an authorised or unauthorised discharge of wastewater, or contaminated groundwater entering the stream. The current survey has indicated that an investigation of potential contamination sources (and the reason for a decline in dissolved oxygen) may be required.

Inspections over the years have not found any deterioration linked to the limited number of discharge points that we have along this watercourse. It is noted that property owners along the watercourse have the right under the Regional Plan to discharge stormwater to the stream without requiring any approvals from this Council.

6.17.4 Stormwater Management Plans

Stormwater Management Plans (SMP) have been prepared for the communities of Matamata, Morrinsville, Te Aroha and Waharoa for the primary purpose of:

- Complying with conditions of Resource Consents 105460 to 105464 issued by Waikato Regional Council to divert and discharge urban stormwater runoff and its associated contaminants at multiple locations
- Document the management objectives and procedures used by MPDCC
- To ensure that stormwater is managed in accordance with MPDC's requirements

The SMP have the secondary purpose of:

- Assisting Council Officers in their assessment of compliance with the Resource Management Act and the Building Act and giving approvals for future developments
- Provide background information for public records, project memoranda and planning, design and construction
- Provide recommendations on Council Policy where stormwater issues may affect it

6.17.5 Environmental Monitoring and Reporting

Monitoring requirements associated with stormwater consents is carried out and provided to Waikato Regional Council as required. However the monitoring has been significantly and involves a bi-annual walkover of a limited length of watercourses and 5 yearly sediment monitoring

6.17.6 Consent Compliance

Recent audits of our stormwater consents have shown full compliance. A few years ago the Waikato Regional Council downgraded our compliance due to the state of the Morrinsville Stream and wanted us to be responsible for the maintenance of all waterways through our urban areas.

These waterways are by law the responsibility of the landowner although Council has taken over the responsibilities of the property owner with respect to a limited number and/or lengths of some smaller watercourses. These are now scheduled in our Stormwater Bylaw. These responsibilities are limited to the removal of obstructions and do not include the control of bank erosion – unless this is caused by our stormwater discharges.

7 Risk Management

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
- 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.

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 Risk Management Update

The Audit and Risk Committee reviewed the state of Risk Management in the organisation in December 2016. Conclusions reached were

- There is considerable activity in risk management occurring in the organisation.
- There are numerous gaps and opportunities for improvement
- Risk management across the organisation or at an enterprise level, is not operating to the level and standard we desire.

The December review introduced the concept of an Enterprise Risk Management Framework which allows an organisation to consider the potential impact of all types of risks on all processes, activities, stakeholders, products and services.

Under this framework risks are categorised as Strategic, Operational and Tactical.

The current risk activities of the Council that fit into these categories are the corporate risk register, the Promapp and Vault registers and Projects register fits into the Tactical category. It is intended to modify the Policy and Risk Management Plan to incorporate improvements identified in the December review.

As an outcome of the review it is also intended to prepare a risk action plan, refine the risk assessment process and develop the organisation understanding.

7.3 Critical Assets

Critical assets are considered those assets in which failure would result in a major disruption to the removal of stormwater or meeting of levels of service. 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 Stormwater 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. stormwater inundation at schools and hospitals.

Critical assets are considered those assets in which failure would result in a major disruption to the supply of water or levels of service. Critical stormwater activity assets are presented below:

Asset	Description	
Matamata		
Tawari Retention Pond	Controls the volume of water discharged to the Waihekau Drain	5
Overland Flow Path	Diverts to higher flows from the much of the southern area direct to the Mangawhero Stream	5

Morrinsville			
Road culverts on Morrisonville Stream	Strictly roading assets and Council not responsible for stream but blocked culverts could affect drainage	5	
Te Aroha			
Spur St P/S	Drains Aroha View Ave area at times of high river levels	5	
Stanley Rd South. Floodgate	Prevents high river levels backing up in piped system	5	
Whitaker St Inlet Grate/Diversion	Ensures culvert inlet does not block & diverts overflows away from houses	5	

7.4 Resillience

Key risks and projects proposed to increase resilience are:

Key Risk	Projects planned to increase resilience
Flooding due to weather event beyond practical capacity	Catchment Management Studies - Catchment modelling and soakage testing of growth areas e.g. Lockerbie (MV north), Bolton Rd area and Mount Ave. Assess the suitability of the growth areas with regard to stormwater management and identify areas
Flooding due to silt, vegetation and debris	Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability.

7.5 Insurance

7.5.1 Overview

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.

7.5.2 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.

7.5.3 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 arrangments is presented in the table below.

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

The following relates to Council as at 30 June 2016

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.

7.6 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 stormwater 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 (overflowing into stormwater systems)
- 7. Moderate Natural Hazards (minor earthquake/landslips/ major storm event) Inability to minimize effects
- 8. Diminishing Funding Allocation
- 9. Flooding due to weather event beyond practical capacity
- 10. Inadequate contract management (capital works for transfer stations etc)

7.7 Activity Risk Management

7.7.1 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.

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

Risk Descriptor	Risk Type	Gros	s R	lisk	Current Practices/Strates	gies	Ne	et R	isk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Lack of Skilled Staff Resources Caused by: Inability to attract key staff Inability to retain skilled staff Consequences: Operational loss Financial costs Poor (or no) decision making	Operational Financial / Economic Reputation / Image	5	4	Catastrophic	 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 oher councils) Annual staff surveys to highlight issues 	Poor	3	5	Major	 Implementation of training and sharing Further Incorporation of Operations staff into major projects More focus on succession planning
 Loss of knowledge (information) Caused by: 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 Consequences: Operational loss Financial costs 	Financial / Economic Operational Reputation/ Image Legislative	3	5	Significant	 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	Moderate	 Improvements to asset information processes, more details requied Improvements in data entry process Improvements in reporting and accessing of scanned historic data (searchability, format, quality Spread of knowledge in how to use AssetFinda Some duplication of comuter systems required (WTPs and WWTPs) Develop exit process to capture departing staff knowledge

Risk Descriptor	Risk Type	Gros	ss R	lisk	Current Practices/Strate	gies	Ne	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
 Failure to deliver on projects and programs Caused By: 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 ownership, change of leadership Consequences: Time & cost blowouts Lack of quality outcomes Loss of service level Over/under spending of budgets 	Operational Reputation /Image Financial / Economic Health and Safety Environment al Legislative	5	5	Catastrophic	 External consulant manages consenting process at planning stage. Staff experienced in project managment 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	 Implement Project Management Training for key staff Review and improve Corporate processes and systems in place Communication Planning – stakeholder and media management Post project de- briefs, Post implementation reviews Processes to clearly identify project timeline and timing Reporting procedures for measuring performance External reviews and audits e.g. peer reviews
Inadequate contract management (network maintenance and operations) <i>Caused by:</i> • Inadequate documents • Inadequate documents • Inadequate management of contractors <i>Consequences:</i> • 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	 Service Level agreemet (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	 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

Risk Descriptor	Risk Type	Gros	ss R	lisk	Current Practices/Strate	gies	Ne	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Inadequate contract management (capital works) Caused by: Inadequate documents Inadequate selection, availability of contractor Inadequate selection, availability of contractors Consequences: 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	 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	 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
Inadequate asset management – not up to date, or insufficient quality of process and output. <i>Caused by:</i> • Lack of AM knowledge and practice • Lack of staff knowledge and training • Lack of resources • Inadequate communication of issues and strategic planning <i>Consequences:</i> • 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	 Asset Management processes and practices Asset Information Systems (AssetFinda / GIS) – managed by Records Officer LTP, Annual Plan processes Asset Management Plan – driven by Utilities Manager Ongoing external review Ongoing budget provision Ongoing input from internal and external consultants 	Good	3	3	Significant	Implement actions from Asset Management Appropriate Practice Plan

Risk Descriptor	Risk Type	Gros	s R	lisk	Current Practices/Strate	gies	Ne	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
 Non-compliance with legislation and legal requirements Caused By: Lack of awareness e.g. changes in legislation not identified Lack of funding Legislative changes increases statutory obligations Disputes with regulatory authorities Consequences: Compromised health, safety and environment Legal action and resulting costs and consequences Poor public image 	Legislative Financial / Economic Reputation / Image Environment al Public Health	5	5	Catastrophic	 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	 Further identification of relevant legislation Implementation of legislative and policy requirements PHRMP improvement actions Further awareness and training in requirements
 Natural Hazards –Inability to minimize effects <i>Caused By:</i> 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 <i>Consequences:</i> 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 	Environment al Public Health Operational Financial / Economic	4	4	Major	 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	 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

Risk Descriptor	Risk Type	Gro	ss R	lisk	Current Practices/Strate	gies	Ne	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
 Lack of Political Alignment, or inability of elected members to fulfil roles and responsibilities or disregard for community/staff views. Caused by: Lack of communication with elected members Lack of understanding from elected members Lack of understanding from elected members Undue influence from lobby groups / national politics Politicians with private agenda Consequences: Essential services under-resourced Decisions made on political grounds ahead of defensible decision making 	Operational Reputation/ Image	4	3	Major	 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	Continue to manage process through CEO / workshops
 External Economic Influences Caused by: 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) Consequences: Financial impact cost of services Inability to provide services, maintain service levels or achieve community outcomes 	Financial / Economic		5	Significant	 Local government networking. Track national and global trends. Monitor key economic developments and liaise with central government Stockpiling / bulk purchasing 	Poor	2	5	Significant	 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

Risk Descriptor	Risk Type	Gros	ss R	lisk	Current Practices/Strate	gies	Ne	et Ri	isk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Inability to utilise funding options Caused by: • Lack of staff training / resources • Lack of awareness of funding sources • Slow decision making • Organisational or process deficiencies Consequences: • Funding not realised • Loss of service levels	Operational Financial / Economic Reputation/ Image	4	4	Major	 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	 Forecast likely scenarios regarding effects of budget changes including deferments Waste management funding opportunities to be developed
 Diminishing Funding Allocation Caused by: Decreased rates, charges, development contribution charges Insufficient external funding secured Consequences: Projects unable to proceed Inability to provide services, maintain service levels or achieve community outcomes 	Operational Financial / Economic	4	4	Major	 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 though 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	 Forecast likely scenarios regarding effects of budget changes including deferments Quantifying Levels of Service in LTP Escalate issues to higher levels e.g. Lobbying Central Government
 Ineffective strategic planning (internal) <i>Caused by:</i> Lack of integration between the different arms of Council pursuing objectives that are at odds with each other. <i>Consequences:</i> Eventual loss of service levels Funding loss 	Operational Financial / Economic Reputation / Image	5	5	Catastrophic	 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	 More inclusive involvement in District Plan changes Improved working relationship with Strategic Planners

Risk Descriptor	Risk Type	Gros	ss R	lisk	Current Practices/Strate	gies	Ne	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Service Level Agreements not met or non-existent – between Utilities and other parties internal or external. <i>Caused by:</i> • lack of monitoring requirements • lack of SLA <i>Consequences:</i> • Affects timing and quality of delivery of services	Operational Financial / Economic	2	2	Moderate	 Interim SLAs with KVS, KC, Planner Intermittent meetings with other Council departments, relationship based (no perceived need for SLA) 	Good	2	2	Moderate	 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
Inadequate Communications and PR Management Caused by: Poor communication e Inadequate strategic planning Ineffective consultation Historic perception of expectations Consequences: Increased costs Poor relations between council and community Negative publicity and reputation	Reputation/ Image Operational Financial / Economic	3	2	Significant	 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	Ensure good number of people trained to present at public meetings

7.7.2 The following are specific risks associated with our stormwater activity:

Risk Descriptor	Risk Type	Gros	ss R	isk	Current Practices/Strategie	s	N	et Ri	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Flooding due to small capacity network Caused by: • Small capacity network elements Consequences: • Affected access • Financial costs • Loss of service level • Negative publicity	Public Health Reputation/ Image Operational Financial / Economic Environmental	2	5	Significant	 Design in accordance with MPDC Infrastructure Code of Practice Subdivision/ Development Control via MPDC Planning and Utilities Public feedback, CRM and complaints Maintenance staff in place (KVS) – response times as per service levels (including road reserve) Asset Management /Annual Plan/ LTP process Some extensions and upgrades to network where practical 	Fair	1	5	Significant	 Develop Incident Response Plan Influence and improve communication and process for development control with MPDC Planning Increase Utilities Involvement in Strategic District Planning More comprehensive SW Catchment Management plans (definition of overland flowpaths etc) Enforce maintenance of soak holes
Flooding due to weather event beyond practical capacity Caused by: • Weather events • Post building landscaping (post consent) Consequences: • Affected access and livelihood • Financial costs • Loss of service level • Negative publicity	Public Health Reputation/ Image Operational Financial / Economic Environmental	4	4	Major	 SW Catchment Management Plans (limited scope, not modelled) Design in accordance with MPDC Development Manual Subdivision/ Development Control via MPDC Planning and Utilities Public feedback, CRM and complaints Maintenance staff in place (KVS) – response times as per service levels (including road reserve) In-house planning and design Asset Management /Annual Plan/ LTP process Some extensions and upgrades to network where practical 	Poor	3	4	Major	 More comprehensive SW Catchment Managemnt plans (definition of overland flowpaths etc) Develop Incident Response Plan Influence and improve communication and process for development control with MPDC Planning Increase Utilities Involvement in Strategic District Planning Community Education/ Awareness (e.g. low gully traps) Customer charter Regional Emergency Response Plan / Civil Defence Policy to design overland flowpaths for extreme events Enforce maintenance of soakholes

Risł	Descriptor	Risk Type	Gro	ss R	isk	Current Practices/Strategies	s	Ne	et Ris	sk	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Floc and Cau • Con • liveli	oding due to silt, vegetation debris sed by: Silt/Sediment, Vegetation or Debris (e.g. dumped fill, mulch, lawn clippings or rubbish) – blocking catchpits and manholes Inlets/outlets, roadside drains and ponds reducing capacity Stream sedimentation sequences: Affected access and hood Financial costs Loss of service level Negative publicity	Operational Reputation/ Image Public Health Environmental	2	5	Significant	 Public feedback, CRM and complaints Maintenance staff in place (KVS) – response times as per service levels (including road reserve) Weed spraying under network maintenance contract. Control of physical works, contract conditions Property owner responsible for removal of obstructions in urban watercourses, except for those designated in SW bylaw Pre-heavy rain warning inspection, clearing stream inlet grates KVS leaf fall collections 	Fair	1	3	Moderate	Enforce maintenance of soakholes
Disc via : Cau • • Con	charge of contamination stormwater network sed by: Lack of effective source controls (e.g. landfills , physical works) Lack of maintenance Fuel off road surface Cross contamination sequences: Pollution of receiving waters Financial costs Negative publicity	Operational Environmental Public Health Legislative Reputation/ Image	1	5	Significant	 Public feedback, CRM and complaints Communications team/ media liaison Fire brigade first response fir fuel spills Maintenance staff with response times as per service levels Control of physical works by MPDC and others Subdivision/ Development/Building Controls by MPDC Building Controls by MPDC Building Control and MPDC Planning – EW involvement Regional Freshwater and Soil Plan 	Fair	1	5	Significant	 Community Education Implement monitoring of trade waste (dedicated Trade Waste Officer) Stormwater treatment devices

Risl	Descriptor	Risk Type	Gros	ss R	isk	Current Practices/Strategie	S	Ne	et Ris	sk	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Bre. pipe Cau • • • Con	aks and blockages in the e network sed by: Tree roots Pipe decay Geological failure Poor design or construction sequences: Operational loss Financial costs Loss of service level	Operational Environmental Public Health	1	5	Significant	 A few overland flowpaths Level of Service for 1 in 5 year event minimum for pipe size Public feedback, CRM and complaints Maintenance staff with response times as per contract Control of physical works by MPDC and others Subdivision/ Development/Building Controls by MPDC Building Controls by MPDC Building Control and MPDC Planning – EW involvement Asset Management, LTP and Annual Process Reactive replacement upon failure Liaison with MPDC Community Facilities (Parks) regarding trees and services Reactive CCTV inspection of identified problem areas. Use of internal and external professional services and contractors Buildover policy within MPDC Code of Practice for Infrastructure 	Good	1	3	Moderate	Develop a renewal programme based on realistic life of pipes in the District
Ero: Cau • • Con	sion and scour sed by: Inappropriately designed or constructed outfalls Inappropriately located outfalls Naturally unstable soils Increase in runoff sequences: Damage to property and assets	Environmental Operational Reputation/ Image Legislative	3	2	Significant	 Maintenance staff with response times as per service levels Design in accordance with Councils Code of Practice for Infrastructure Public feedback, CRM and complaints Subdivision/ Development/Building Controls by MPDC Building Control and MPDC Planning – EW involvement Outfall inspection programme 	Fair	1	2	Minor	•

Risk Descriptor	Risk Type	Gros	ss R	isk	Current Practices/Strategies	6	Ne	et Ris	sk	Management Options
		Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor	
Lack of necessary reticulation or adequate provision for soakage in existing areas Caused by: • Lack of planning • Previously unidentified need (e.g. bach area to urban, infill housing) • Lack of suitable site for overland flowpath Consequences: • Flooding • Downstream effects	Operational Legislative Environmental Public Health Reputation/ Image	2	3	Significant				•	Poo	2

7.8 Resilience of Infrastructure to Natural Disaster

7.8.1 Introduction

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

7.8.2 Background

The District is subject to a wide range of natural hazards. Several significant natural events have been recorded which have caused loss of life, and damage to property and the environment with high winds and/or flooding being the "standard" event.

High winds have the potential to disrupt power supplies and to limit access due to trees being uprooted.

The district has suffered five main flooding events over the last 25 years:

- A flash flood on February 1985 swept boulders, mud, trees and other debris through Te Aroha. Three people died in the flood, and most shops in town and more than 50 homes were damaged
- In June 2002, a 1 in 100 year rainfall event occurred in the district
- in July 2002, there was also a one-in-five year flood event on the Waitoa River
- in January 2003, there was a one-in-five year event on the Waihou River
- In April 2008 a 1 in 150 year rain fall event occurred in the Matamata Township
- In July 2014 the Waihou River rose to a level of in Te Aroha of 11.54 (Tararu Datum) compared with a highest level in August 1976 of 11.72. The 100 year design flood at Te Aroha Bridge is 12.08. No habitable dwellings were flooded.

7.8.3 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.

7.8.4 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.

7.9 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.

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.

7.10 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 Piako and Waihou Rivers. Wind, is another danger for Matamata-Piako District with several high wind events hitting the area in recent years.

7.11 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 (volcanic hazards, flooding and earthquake).

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 restate the service (albeit limited), where possible protect the environment and then source long term infrastructure solutions to return to a normal level of service.

7.12 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 but stormwater was not considered to have the same degree recovery concerns.

7.13 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:

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

7.14 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 and factoring in any observed deterioration (through repairs or sampling) or new connections

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..

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 tables summarise the financial forecast for the Stormwater 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 stormwater activity (excluding asset management costs) for the next 10 years. This is based on the assumption that our levels of service will not change.

The increasing cost is allowance for extra depreciation of capital works

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Operations	2018/19	2019/20	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
	Actual	Actual	Budget											
District SW Non Routine	51,563	125,029	24,328	26,125	26,125	26,125	26,125	26,125	26,125	26,125	26,125	26,125	26,125	26,125
District Land Drainage Costs	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
MM SW Maintenance Costs	31,408	25,659	39,075	69,510	69,510	69,510	74,510	79,510	79,510	79,510	79,510	79,510	79,510	79,510
MV SW Maintenance Costs	36,037	21,828	36,065	56,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160
TA SW Maintenance Costs	83,744	43,271	62,645	75,167	75,167	75,167	75,167	75,167	75,167	75,167	75,167	75,167	75,167	75,167
Waharoa SW Maintenance Costs	811	1,440	6,450	7,645	7,645	7,645	7,645	7,645	7,645	7,645	7,645	7,645	7,645	7,645
Stormwater Total for District	203,563	217,227	169,563	235,607	245,607	245,607	250,607	255,607	255,607	255,607	255,607	255,607	255,607	255,607

Table 8-1: Projected Operational Costs (CM 23789321v2)



Figure 8-1: District Stormwater Opex Trend (CM 2378931v2)

Stormwater Activity Management Plan 2015-2025 (updated 2017)

8.3.3 Projected Renewal Costs for next 30 years (no allowance for inflation)

Year	Smoothed (5 Years)	Total Retic (Lines and Points)	2 2 2	051 052 053	300,346 212,774 212,774
2022	769	0	2	054	212,774
2023	769	0	2	055	212,774
2024	769	252	2	.056	212,774
2025	769	3,593	2	.057	168,699
2026	769	0	2	058	168,699
2027	0	0	2	.059	168,699
2028	0	0	2	.060	168,699
2029	0	0	2	061	168,699
2030	0	0	2	062	477,551
2031	0	0	2	063	477,551
2032	0	0	2	064	477,551
2033	0	0	2	065	477,551
2034	0	0	2	066	477,551
2035	0	0	2	067	488,488
2036	0	0	2	068	488,488
2037	28,871	0	2	069	488,488
2038	28,871	144,356	2	070	488,488
2039	28,871	0	2	071	488,488
2040	28,871	0	2	072	589,204
2041	28,871	0	2	073	589,204
2042	2,315	0	2	074	589,204
2043	2,315	8,960	2	075	589,204
2044	2,315	2,618	2	076	589,204
2045	2,315	0	2	077	4,349,362
2046	2,315	0	2	078	4,349,362
2047	300,346	1,056	2	079	4,349,362
2048	300,346	1,164,352	2	080	4,349,362
2049	300,346	0	2	081	4,349,362
2050	300,346	28,290			

Table 8-2: Projected Reticulation Renewal Costs (CM 2396627)

308,030

1,004,705

17,085

42,078

18,158

452,445

30,764

342,129

17,377

141,452

617,258

162,466

614,407

434,358

448,448

433,756

511,470

825,765

781,688

135,307

901,471

301,787

214,154

63,313

998,618

0

20,470,726

1,449,200

0

0



Figure 8-2: Reticulation Renewal Trend (CM 2396627)

Year	Smoothed (5 Years)	Total Plant Renewal Costs
2022	135,499	0
2023	135,499	245,119
2024	135,499	422,925
2025	135,499	9,449
2026	135,499	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	18,271	0
2033	18,271	91,353
2034	18,271	0
2035	18,271	0
2036	18,271	0
2037	32,643	0
2038	32,643	153,767
2039	32,643	0
2040	32.643	9.449

Table 8-3: Projected Plant Renewal Costs (CM 2396644)

2041	32,643	0
2042	102,856	0
2043	102,856	514,278
2044	102,856	0
2045	102,856	0
2046	102,856	0
2047	2,385	11,926
2048	2,385	0
2049	2,385	0
2050	2,385	0
2051	2,385	0
2052	50,914	0
2053	50,914	245,119
2054	50,914	0
2055	50,914	9,449
2056	50,914	0
2057	18,977	0
2058	18,977	0
2059	18,977	0
2060	18,977	0
2061	18,977	94,886
2062	104,232	422,925

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2063	104,232	91,353
2064	104,232	0
2065	104,232	0
2066	104,232	6,882
2067	32,643	0
2068	32,643	153,767
2069	32,643	0
2070	32,643	9,449
2071	32,643	0
2072	18,271	0

2073	18,271	91,353
2074	18,271	0
2075	18,271	0
2076	18,271	0
2077	84,585	0
2078	84,585	0
2079	84,585	0
2080	84,585	0
2081	84,585	422,925



Figure 8-3: Plant Renewal Cost Trend (CM 239664)

8.3.4 Depreciation vs Renewals Spending (no allowance for inflation)

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Renewal Spend											
Stormwater	-	-	3	90	158	-	-	353	-	-	-
Total renewal spend		-	3	90	158	-	-	353	-	-	-
Depreciation											
Stormwater	568	590	619	634	649	666	682	700	719	739	760
Total depreciation	568	590	619	634	649	666	682	700	719	739	

											760
Renewal /depreciation	0%	0%	0%	1/1%	24%	0%	0%	50%	0%	0%	0%
(Source: RM 1	977151)	078	1470	2470	078	070	5078	078	070	078



8.3.5 Projected Capital Projects for Next 30 years

All these projects are for increased level of service and growth.

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

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Table 8-4: Capital Projects 2021 to 2031 (CM 2350824v4)

Business Case Name (Project)	Gr.	LoS	Ren.	Total 2021 to 31	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Tower Road Development	80%	20%	0%	400,000	0	400,000	0	0	0	0	0	0	0	0
Eldonwood South Development	80%	20%	0%	100,000	100,000	0	0	0	0	0	0	0	0	0
Minor Stormwater Upgrades Annually	0%	100%	0%	1,100,000	100,000	200,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Matipo St SW Pond	0%	100%	0%	200,000	0	0	200,000	0	0	0	0	0	0	0
				1,800,000	200,000	600,000	300,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

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

Table 8-5: Capital Projects 2031 to 2051 (CM2350824v4)

Business Case Name (Project)	¦ Gr.	LoS	Ren.	Total 2031 to 51	¦ 2031/36	2036/41	2041/46	2046/51
Minor Stormwater Upgrades	0%	100%	0%	2,000,000	500,000	500,000	500,000	500,000
Annually	1			1				
	i			 	I			
				2,000,000	500,000	500,000	500,000	500,000

8.3.6 Projected Financial Costs (no allowance for inflation)

The tables below contain the information used in the preceding graphs for 10 years for operations and asset management (year 10 has been copied into years 11 to 30) and 30 years for renewal and capital

Year	Retic Renewals	Plant Renewals	Capital	Total Capital and Renewal	Operations & Maintenance	Asset M'ment	Total Opex	Total Cap, Ren and O & M
2022	769	135,499	200,000	336,268	219,482	26,125	245,607	581,875
2023	769	135,499	600,000	736,268	219,482	26,125	245,607	981,875
2024	769	135,499	300,000	436,268	224,482	26,125	250,607	686,875
2025	769	135,499	100,000	236,268	229,482	26,125	255,607	491,875
2026	769	135,499	100,000	236,268	229,482	26,125	255,607	491,875
2027	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2028	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2029	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2030	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2031	0	0	100,000	100,000	229,482	26,125	255,607	355,607
2032	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2033	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2034	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2035	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2036	0	18,271	100,000	118,271	229,482	26,125	255,607	373,878
2037	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2038	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2039	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2040	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2041	28,871	32,643	100,000	161,514	229,482	26,125	255,607	417,121
2042	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2043	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2044	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2045	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2046	2,315	102,856	100,000	205,171	229,482	26,125	255,607	460,778
2047	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2048	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2049	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2050	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338
2051	300,346	2,385	100,000	402,731	229,482	26,125	255,607	658,338

Figure 8-4: Total Projected Renewal, Capital and O & M Costs

Section 8: Financials

8.3.7 Key Operational (Asset Management) Projects

Project Name	Description	Timing	Costs
Swap Park, Matamata soakage assessment	Investigate suitability of Park for SW soakage and determine catchment to be serviced by soakage system	2019/20	\$30,000
OFP below Burwood Road	Promoted by Barr & Harris - Carry out assessment to determine feasibility of Overland Flow Path below Burwood Rd	2018/19	In-house
CCTV inspection of SW mains	Carry out CCTV assessment of portion of SW network every year.	2018/19 -	\$20k/year
Critical Asset identification	Formal identification of critical assets and prioritise response during a storm event	on-going	
Catchment Management Studies	Catchment modelling and soakage testing of growth areas e.g. Lockerbie (MV north), Bolton Rd area and Mount Ave. Assess the suitability of the growth areas with regard to stormwater management and identify areas susceptible to liquefaction.	2018/19 -	\$20k/year
Storm Response Strategy	Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability.	2018/19 -	In-house
Maintenance of Detention ponds and rain gardens	Ensure maintenance management plans for detention ponds and rain gardens are provided by developers and include in the maintenance programme and associated budget	2018/19 -	In-house
SW system improvements	Develop and commit to a programme of improvements using funds collected through developer contributions	2018/19 -	In-house

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
- Confidence in the data used to produce the 10-year forecasts for this AMP has been assessed at 80 85%.

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 Indice and Consumer Price Indice.

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

- Pipe lines are to be replaced at the end of their base life only if inspection and/or testing together with an assessment of past RLP's shows there is no significant life left. Otherwise they are to be assigned an additional life within the asset management system.
- Point assets such as manholes are to be replaced at failure or renewed in conjunction with the replacement of the main they are attached to.

8.4.2 Asset Base Life

The base lives of assets within the stormwater system were recently reviewed by staff and then peer reviewed by consultants. The following changes were made to asset life as a result of that review:

Line Assets	Material	Existing Base Life (Years)	Proposed Base Life (Years)
Channel	Concrete	80	100
Culvert	Asbestos Cement	60	100
	Concrete	80	100
	Unknown	80	100
Gravity Main	Acuflo	60	100
	Aluminium	60	100
	Asbestos Cement	60	100
	Boss Pipe	100	100
	Concrete	80	100
	Corrugated Steel	60	100
	Earthenware	80	100
	HDPE	80	100
	Novaflow	60	100
	PVC	80	100
	Steel	80	100
]	Unknown	80	100
	uPVC	80	100

8.4.3 No Major Capital Investment

Disposal of stormwater is one of the biggest constraints we face in providing for the growth of our communities. Our geography and the existing capacity of our network, streams and rivers as well as environmental rules, means that some areas of our district are harder to develop than others.

Our current approach is to require 'infill' and 'brownfield' developments to dispose of stormwater on site. 'Greenfield' developments can discharge existing run off in to our network. We will ensure new areas we identify for development are the most suitable for managing stormwater and we will also consider alternative solutions for individual proposals as part of a subdivision as it is important to allow for growth and development in our district.

We have investigated whether overland flow paths could be installed to cater for the 1 in 10 to 1 in 100 year run off. This was not found to be feasible due to the lay of the land in our district and where the watercourses are located.

It was also investigated whether the reticulation system could be upgraded to dispose of more stormwater to allow for further infill and growth. The cost estimate for this was not seen to be economical and affordable by the community.

We have not included a significant amount of major capital work for stormwater in our 30 year strategy, but this is not a 'do nothing' approach - we are focussing on looking for solutions, particularly in Morrinsville, before committing funding to projects.

9 Improvement Plan

9.1 Proposed Actions

Matamata-Piako District Council is committed to ongoing improvement in the quality of its Stormwater 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 Stormwater Service annual business planning.

Section 9: Improvement Plan

9.2 Improvement Projects

Project Name	Description	Timing	Costs
Swap Park, Matamata soakage assessment	Investigate suitability of Park for SW soakage and determine catchment to be serviced by soakage system	2019/20	\$30,000
OFP below Burwood Road	Promoted by Barr & Harris - Carry out assessment to determine feasibility of Overland Flow Path below Burwood Rd	2018/19	In-house
CCTV inspection of SW mains	Carry out CCTV assessment of portion of SW network every year.	2018/19 -	\$20k/year
Critical Asset identification	Formal identification of critical assets and prioritise response during a storm event	on-going	
Catchment Management Studies	Catchment modelling and soakage testing of growth areas e.g. Lockerbie (MV north), Bolton Rd area and Mount Ave. Assess the suitability of the growth areas with regard to stormwater management and identify areas susceptible to liquefaction.	2018/19 -	\$20k/year
Storm Response Strategy	Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability.	2018/19 -	In-house
Maintenance of Detention ponds and rain gardens	Ensure maintenance management plans for detention ponds and rain gardens are provided by developers and include in the maintenance programme and associated budget	2018/19 -	In-house
SW system improvements	Develop and commit to a programme of improvements using funds collected through developer contributions	2018/19 -	In-house

1 AM Policy D	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".	Defined policy statements for all significant activities. Clear linkage to corporate goals. Policy supported by high-level action plans with defined responsibilities for	AM Policy and Strategy reviewed and adopted by Executive Team each year Expectations of each activity area defined with detailed action plans, resources, responsibilities and timeframes.	AM Policy and Strategy fully integrated into the organisations business processes and subject to defined audit, review and updating procedures		
Current Status	Core- Intermediate	 Current status Council has imp AM Policy and S Expectations de timeframes Processes are i 	implemented a restructure to allow a high focus on AM nd Strategy reviewed and adopted by Executive Team each year s defined for activity areas with action plans, resources, responsibilities and			
Appropriate Target	Intermediate	 Future status 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' 				

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	 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	 Err consultation process includes pre-consultation on Los options 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 				

Section 9: Improvement Plan

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	Storm response strategy - Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability.	Level of Service and Performance Management		2018-19	In-house
2	SW system improvements – develop and commit to a programme of improvements using funds collected through developer contributions.	Level of Service and Performance Management		20118-19	In-house

Demand Foreca	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	 Understanding of aging population District Plan changes at hearing stage Recent Population Growth Scenario Projections (2017) 				
Appropriate Target	Intermediate	 Period review of demographic, economic and recreation trend assumptions Periodically review strategies Feasibility studies with a range of demand scenarios for major projects 				

Section 9: Improvement Plan

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
3	Catchment modelling and soakage testing of growth areas e.g. Lockerbie (MV north), Bolton Rd area and Mount Ave. Assess the suitability of the growth areas with regard to stormwater management and identify areas susceptible to liquifaction	Demand Forecasting		2018-19 onwards	\$20k per year
3	Swap Park, soakage assessment – investigate the suitability of the park soakage.	Demand Forecasting		2019-20	\$30k

Asset Registe	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					

Section 8: Financials

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
1	Carry out CCTV assessment of portion of SW network every year.	Asset Register Data		2018/19 on-going	\$20k per year
3	Formal identification of critical assets and prioritise response during a storm event.	Asset Register Data		2018/19 on-going	In-house

Asset Condit	Asset Condition Data					
Element	Minimum 0 – 25	Core 26 – 50	Intermediate 51 – 75	Advanced 76 – 100		
5 Asset Condition	Condition assessment at asset group level (top down). Supports minimum requirements for managing critical assets and statutory requirements (e.g. safety)	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.	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.	The quality and completeness of condition information supports risk management, lifecycle decision making and financial/performance reporting. Periodic reviews of programme suitability carried out.		

Current	Intermediate	 Still lagging behind in assessing condition of some assets
Status		 The condition rating used for assets due for replacement
		Renewal profiles available for most assets
Appropriate Target	Intermediate	 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	Carry out CCTV assessment of portion of SW network every year.	Asset Register Data		2018/19 on-going	\$20k per year

Risk Managen	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	Risk framework developed. Critical assets and high risks	Systematic risk analysis to assist key decision-making.	Formal risk management policy in place.		
	decisions.	identified. Documented risk management strategies for critical assets and high risks.	Risk register regularly monitored and reported.	Risk is quantified & mitigation options evaluated.		
			Risk managed consistently across the organisation.	Risk integrated into all aspects of decision making.		
Current	Coro	Diale matrix day alamad				
Status	COLE	Risk matrix developed Oritical assets identified	4			

Status		Critical assets identified
Appropriate	Intermediate	Corporate risk framework implemented
Target		 Risk register regularly monitored and reported
		Risk action plans for critical assets
		Business continuity plans

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
2	Storm response strategy - Develop a management strategy for increasing both the level of responsiveness during storm events and Kaimai Valley Services (KVS) response capability.	Risk Management		2018-19	in-house

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	 Capital and renewal - prioritisation techniques applied to Bulk Funded items Strategies and LoS do not necessarily always drive decision making 			
Appropriate Target	Intermediate	 LoS, Strategies, and Ri Renewal profiles to aid 	sk, to have greater influence on p decision making	rioritisation	

memodale	• Los, strategies, and Risk, to have greater initidence on phontisation
	 Renewal profiles to aid decision making
	 More systematic approach to operations and maintenance tasks

Priority	Improvement	Element	Action Officer	Target completion	Projected cost
3	Carry out assessment to determine feasibility of Overland Flow Path below Burwood Rd	Decision making		2018/19	In-house

Renewal Plan	ning				
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	 Renewals based on age profile, condition, maintenance demand, customer service issues Expenditure spread out over period to manage effect on rates 			
Appropriate Target	Intermediate	 Greater use of renewal Condition-rating program 	profiles and asset data to set budg mmes to feed into renewal plannin	gets a	

• Condition-rating programmes to feed into renewal planning

Section 8: Financials

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

Current	Core	CRM system
Status		 Asset failures investigated and identified
		Preventative maintenance undertaken
Appropriate	Intermediate	 Performance measures based on response times
Target		 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
3	Ensure maintenance plans for detention ponds and rain gardens are provided by developers and include in the maintenance programme and associated budget.	Maintenance planning		2018/19 - ongoing	In-house

Capital Works	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	 Projects collated through activity groups comprising policy, engineering & operations staff. Planning in hand for next 30 years of capital works 					
Target	memeuale	 Improved criteria for as LoS, Strategies, and Ri Strategies used more to 	 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
3	Develop and commit to a programme of improvements using funds collected through developer contributions.	Capital works planning		2018/19 - ongoing	In-house

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	Core	Funding Policy
Status		Ten year financial forecast in AMP and LTP
		 Maintenance & Operations – based on historical expenditure
		Renewal profiles available for most assets
Appropriate	Intermediate	 Renewals – based on asset performance and condition information
Target		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.	Cross-Council coordination occurs through a Steering Group or Committee,	All staff in the organisation understand their role in AM, it is defined in their job descriptions, and they receive	A formal AM capability building programme is in place and routinely monitored.
		staff.	that role.	The AM structure has been formally reviewed with
		The executive team have considered options for AM functions and structures.	A person on the Executive Team has responsibility for delivery the AM Policy/Strategy.	consideration of the benefits and cost of options.
	1. <i>(</i>) P. (
Current	Intermediate	All relevant staff now in	activity groups to strengthen AM	planning

Status		AM training needs identified as required		
		A person on the Executive Team has responsibility for delivery the AM Policy/Strategy		
Appropriate	Intermediate	• All appropriate staff in the organisation understand their role in AM, it is defined in their		
Target		job descriptions, and they receive training aligned to that role		

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	Intermediate	All levels largely achieved
Status		10 year financial programme
		3 year improvement programme
Appropriate	Intermediate	 Intermediate status for all AMPs
Target		

See: Remainder of Improvement Plan

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

Current	Core	AssetFinda and Authority AM
Status		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	Intermediate	 Data systematically captured and updated to improve functionality of systems
Target		 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	Core	Internal service level agreements with internal service providers not in place or out of
Status		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	Intermediate	 Minimum service delivery standards for internal providers that are outcome based
Target		

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

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.	Process documentation implemented in accordance with the Quality Management System plan.	ISO 9001 certification achieved and surveillance audits demonstrate the satisfactory operation of the
		All critical activity processes documented.	All processes documented to appropriate level of details.	Quality Management System.

Current Status	Intermediate	 ISO 9001 accredited Internal & external auditing Corporate quality systems in Promapp
Appropriate Target	Advanced	 Minimum specifications for service delivery Improved quality procedures and documentation at operational level

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	Improvement plan identifies objectives, timeframes, deliverables, resource requirements and responsibilities		
Appropriate	Intermediate	Project briefs developed for major improvement actions		

See: All sections of Improvement Plan

Target

Appendix 1: MPDC Stormwater Requirements




MPDC Stormwater Requirements March 2016

MPDC Stormwater Requirements

(Note that this is a summary of requirements and does not imply there are no other considerations in specific cases.)

1. District Plan:

The District Plan provides for the sustainable management of the natural and physical resources of the district to ensure it is protected for future generations.

(Note these extracts are from the latest version of the District Plan dated 21 October 2015)

1.2.2 Development suitability

On-site stormwater treatment and disposal - See Section 5.9: Infrastructure and Servicing and the Development Manual.

5.9.1 Performance standards

(i) Stormwater

The subdivision and development of land shall be carried out so as to provide for effective stormwater management, in compliance with the Development Manual.

5.9.2 Non-Compliance with performance standards

(i) Stormwater

Provision for stormwater disposal that fails to meet the performance standards in Section 5.9.1 above shall be considered a restricted-discretionary activity. Council has restricted its discretion to the matters outlined in Section 5.9.3(i). If consent is granted Council may impose conditions to avoid, remedy, or mitigate adverse effects relating to any of these matters.

5.9.3 Matters of discretion

(i) Stormwater

The design, construction and operation of the stormwater systems should be such as to satisfy the following:

(a) Be adequate to meet the maximum potential demand on site arising from the development and use of the land as permitted under the District Plan and taking into account the actual and potential land uses up-gradient of the site.

(b) In the first instance be managed and disposed of on-site. Only where on-site disposal is unable to be achieved will Council consider new connections to public drainage, where available.

(c) The design capacity of any piped stormwater facilities should be sufficient to accommodate the surface water flows resulting from a 10-year storm event in the case of Residential, Industrial and Business zones, and to avoid flood damage to the existing or potential principal buildings on the site, resulting from a 100-year storm event.

(d) Overland flow paths must be able to cater for a minimum of a 1 in 100 year return period storm. Flood paths within the subject site must be protected by an easement registered against the titles affected throughout their length.

Where flood paths are not feasible, the piped system must cater for a minimum of a 1 in 100 year return period storm.

Where disposal is to ground soakage with no flood path, the soakage must cater for a 1 in 100 year return period storm.

(e) Secondary flows exiting the subject site following development must not exceed predevelopment overland flows.

(f) Stormwater proposals must take into account the requirements of the Council's current stormwater discharge consents from the WRC. All proposals must be consistent with the conditions of this consent including requirements for low impact design principles, stormwater management devices and best practicable options as set out in the consent.

(g) Stormwater works should be provided in a manner which avoids excessive modification of natural drainage systems and minimises any detriment to the environment particularly through potential contamination of natural water.

(h) The integrity of the stormwater system should be maintained and its safe and efficient operation facilitated, while ensuring an adequate level of safety to the public and those operating and maintaining the facilities.

(i) Any detriment to the enjoyment and development of individual allotments arising from the provision and operation of the stormwater system needs to be minimised.

(j) The known or predicted effects of climate change on a proposal, based on best available scientific knowledge, shall be taken into account.

(k) In terms of operation and maintenance, the stormwater system shall be in line with community expectations regarding anticipated performance.

(I) The lifecycle and maintenance costs meet community expectations.

(m) Any disposal or treatment areas located off-site, other than to Council owned systems, shall be protected by easements as appropriate.

(n) Council may require a detailed stormwater plan to ensure that there are no adverse stormwater effects off-site.

(o) Any necessary consent shall be obtained from the WRC

11. Natural Hazards

11.4 Flooding

11.4.1 Design floor levels

In ponding areas within the Waihou River flood plains, at least 80% of the area of the property shall have ground levels 200 mm above the design flood level and the building floor levels must be 500 mm above the design flood level, i.e. 300 mm above ground level. Design flood levels are usually based on the risk factor of 1% annual return period flood event.

11.4.2 Design standards for buildings subject to overland flow paths

Buildings subject to overland flow from tributary streams shall meet the following standards:

(i) Exterior walls should be waterproofed;

(ii) Large openings to the building should be located away from flowpaths;

(iii) Minimum floor levels of habitable rooms shall be 500 mm above general ground level or above stopbank crest levels or road formation levels.

11.4.3 Stormwater flows

Where activities involve the development of large impermeable surfaces including buildings, structures and paved surfaces (exceeding a combined site coverage of 1,000 m2), Council will require technical evaluations of the existing and anticipated stormwater flows and the necessity or otherwise of retention ponds or other stormwater control and/or mitigation devices.

11.4.4 Stormwater design

Detailed stormwater design shall be in accordance with the Development Manual.

13.1 Statutory provisions

In undertaking any activity, regard shall be had to the provisions and requirements of statutes regulation or Policy Statements other than the Resource Management Act as they affect the avoidance, remediation or mitigation of any adverse effects on the environment.

Such statutes include, but are not necessarily limited to: only included are those likely to apply to stormwater)

- Local Government Act;
- Building Act;
- Building Code;
- National Policy Statements;

13.2 Regional Council

In undertaking any activity, regard shall be had to the provisions and requirements of any Policy Statements and Regional Plans prepared by the Regional Council relating to but not necessarily limited to:

- · Earthworks;
- Water and soil conservation;
- Discharge of contaminants;
- Water permits;
- · Damming, flooding or otherwise altering any natural catchment;
- · Removal of vegetation;
- · Hazardous facility management;
- Structures on, under or over the beds or rivers.

2. Development Manual:

- The MPDC Development Manual sets out the processes and standards that are expected to be followed and met whenever any development project is undertaken in accordance with Matamata-Piako District Plan. It particularly applies where the assets are taken over by Council as noted in the Introduction.
- It represents the "preferred means of compliance" with the District Plan requirements however it should be noted the Development Manual is not the only method that may be adopted to comply with the requirements of the District Plan.

- The Developer may produce an alternative design, however in that case must clearly demonstrate that the design meets the relevant District Plan requirements. The procedure for alternative solutions is set out in section 1.6 of the Development Manual.
- The section relating to Stormwater Drainage is Part 4 and the general requirement is that all lots shall be provided with a means of stormwater drainage at or within the lot boundary.

The following only lists key points and are not an inclusive listing of the Development Manual requirements

- The discharge through any existing connection shall be limited to the discharge rates from the pre-developed site and any excess discharge rate (e.g. overland flow) created shall be dealt with by the development to the pre-development disposal rates.
- Where a stormwater system is proposed for the collection and discharge of stormwater within the land being developed, it shall also have capacity to deal with drainage from the entire catchment upstream of the development site.
- Stormwater proposals must take into account the requirements of Council's current stormwater discharge consents from the Regional Council. All proposals must be consistent with the conditions of these consents including requirements for low impact design principles, stormwater management devices and best practicable options.
- Secondary flow paths shall be provided and must be able to cater for a minimum of a 1 in 100 year return period storm. Secondary flow paths within the development must be protected by an easement registered against the titles affected.
- Where secondary flow paths are not feasible the piped system must cater for a minimum of a 1 in 100 year return period storm. This shall also ensure that the peak flow rate from the developed site does not exceed the 100 year pre-development peak flow rate.
- Where disposal is to ground soakage with no available secondary flow path, the soakage system must cater for a 1 in 100 year return period storm.
- The Developer shall be responsible for ensuring that mechanisms exist to prevent waterborne litter, such as paper and plastics, and gross sediments from entering the system. Proposed design plans shall demonstrate how this is to be achieved.
- In new developments the stormwater disposal design shall adopt stormwater control measures that retain the secondary overland flow run-off for the particular development to pre-development conditions
- Stormwater secondary flow paths shall be identified for the following situations:
 - Catchpit blockage.
 - Culvert blockage (or alternatively provide an unobstructed waterway capable of passing the once in 100 year return period rainfall event while maintaining at least 0.5 m freeboard to building floor levels on upstream property).
 - Rainfall in excess of design levels of service as outlined in section 4.8.1.1.

- Stormwater secondary flow paths, including peak flow depths, velocities and flow rates, shall be shown on design plans for pre and post development of the site for a once in 100 years return period.
- All stormwater secondary flow paths across private land shall be protected by an easement. The easement shall cover the full extent of the secondary flow path and shall not be less than 3 m wide. The easement shall have the effect of preventing alteration of the ground surface and prohibit location of structures that might impede the flow of water across the land. The easement shall be in favour of the Council. The easement shall be duly granted, reserved and shown on the survey plan.
- To ensure that the critical duration storm is utilised for each site (including upstream) the 24 hour duration nested storms with a minimum of 10 minutes duration should be used for the proposed development.

3. Infrastructure Code of Practice:

- These set out the standards for materials and construction that are required in the MPDC district. Compliance with the Code of Practice is required for all works that are for Council whether by direct contract to Council or as part of a development where the infrastructural assets will become part of the Council network following completion.
- Part 1 contains "General" requirement and Part 4 contains "Stormwater and Wastewater" requirements. In Part 4, Section A is the "Construction Specifications" and Section B the "Acceptable fittings and materials".

4. Stormwater Bylaw

- The Stormwater Management Bylaw provides for the management of stormwater within the MPDC district so as to protect people, property and the environment by minimising the impact of flooding erosion and environmental pollution. It applies in both the urban and rural areas.
- In general the requirements are similar to those imposed under the Resource Management Act 1991, the Building Act 2004, or other Acts or Regulations.
- Those designing stormwater systems should be familiar with the Bylaws including the requirement to ensure water does not run across footpaths from driveways; and that the runoff <u>from developments</u> does not run onto to adjacent properties.

5. Comprehensive SW Consents

• Stormwater proposals must take into account the requirements of Council's current stormwater discharge consents from Environment Waikato and all proposals must comply with the requirements with low impact design principles, stormwater management devices and best practicable options as set out in the extracts below. These consents apply to the urban areas of Matamata, Morrinsville, Te Aroha and Waharoa.

- Where the new stormwater will discharge to other than an existing Council pipe network, the sub-divider is required to obtain a Discharge Consent, and a Resource Consent for the work within the watercourse, from EW in their own name. Proof of this is required before the any work on the subdivision can commence. As Council will need to add the discharge to its own consent at the time of transfer, the consent must specifically state that the work will comply with the requirements for a new municipal discharge as set out in the extracts below.
- Where the discharge is to an existing Council pipe network, acceptance will be subject to compliance with the requirements for connections to the municipal stormwater system as set out in the relevant extracts below.

Relevant extracts of Council's Stormwater Discharge Consents are: (our underlining)

New municipal stormwater diversion or discharge activities Any new municipal stormwater system diversion or discharge activity commenced after the granting of this consent shall be authorised by this consent when the consent holder is notified in writing by the Waikato Regional Council to this effect. Such notification shall be provided on receipt of information showing to the <u>satisfaction of the Waikato Regional</u> Council acting in a technical certification capacity, that:

a) The new diversion or discharge is consistent with the conditions of this consent; and

b) The new diversion or discharge does not <u>increase peak discharge rates to</u>, or flow <u>volumes in</u>, <u>receiving waters</u> above that which would occur at the time of the application for this consent, unless it is demonstrated that there shall be no adverse effects on the environment or downstream properties as a result of such increase

• Changes in municipal stormwater system diversion and discharge activities The consent holder shall not undertake any changes to the municipal stormwater system diversion and discharge activities which would increase the scale or intensity of actual or potential adverse effects of those activities on the receiving environment

• Connections to the municipal stormwater system

The consent holder shall be responsible for accepting new connections to the municipal stormwater system, -----, for ensuring that all new such connections incorporate appropriate stormwater management systems that are capable of:

a) Minimising all contaminants such that water quality conditions of this consent are complied with.

b) Preventing accidental release of any hazardous substances to the stormwater system, or

c) Reducing all such hazardous substances in stormwater , prior to discharge to receiving waters, to concentrations that will not result in contamination of either water or sediments to such a degree that it is likely to result in adverse effects on aquatic life or on the suitability of water for human consumption after treatment.

• Low Impact Design principles

The consent holder shall ensure that for all proposed "greenfield" site developments, consideration is given to the application of Low Impact Design principles as contained in the Auckland Regional Council Technical Publication No 124 "Low Impact Design Manual for the Auckland Region" (ARC, 2000), or any other technical publication approved in advance by the Waikato Regional Council acting in a technical certification capacity.

• Stormwater management devices

The consent holder shall ensure that for all proposed urban development sites ("brownfield" and "greenfield" sites), consideration is given to the application of stormwater management devices. Where applicable, these shall be constructed and maintained in accordance with the Auckland Regional Council Technical Publication No 10 "Stormwater Management Devices: Design Guidelines Manual"" (ARC, 2003), or any other technical publication approved in advance by the Waikato Regional Council acting in a technical certification capacity.

• Best Practicable Options

At all times, the consent holder shall seek to implement Best Practical Options for minimising actual and potential adverse effects on the receiving environment that result from the municipal stormwater system diversion and discharge activities and associated land use.

Interpretations:

• Question: Your Regional Plan requires that to be a permitted activity soakage systems must cater for the 10 year design storm or higher with any exceedence going into a designated flow path. We have assumed that if there is no designated flow path then the soakage must cater for the 100 year storm and felt that we cannot require for a greater storm than this. However would such a policy fit with the EW rules? Or do all soakage systems without a designated flow path require EW consent?

Answer: You are correct in that in order to fall under the permitted activity rule for stormwater discharge to ground the soakage area must cater for the 10 year storm event. Storm events greater than the 10 yr shall flow overland through a designated flowpath. The Regional Plan does not specifically define a designated flowpath as such. Generally this can been interpreted for example as a manmade/natural swale, roadway, drain, or natural lay of the land where the pre-existing stormwater flowed. The purpose of the 'designated' flowpath is to ensure that the overland flows do not create adverse effects such as flooding and scour/erosion.

• **Question:** How should the requirement for EW approval for new stormwater discharges in our Comprehensive consents be applied?

Answer: There is a little interpretation required in this requirement. If a new subdivision discharges into the MPDC stormwater infrastructure it is not considered a new activity as there is no new discharge occurring. The existing discharge remains the same and is authorised by the current consent. It is therefore up to MPDC to ensure compliance that the increase in flows meets the condition of consent. If it is a new activity (new discharge) that is when the requirements for a new municipal stormwater diversion or discharge activities are activated and then EW would provide written approval of the discharge".

Comment - note that in general MPDC discharge consents are into watercourses running through urban areas and the watercourses themselves are not part of the urban drainage system. It is also considered that the requirements of the Comprehensive SW Consents are generally no more onerous than established Common Law.

6. Building Act

- It should be noted the Acceptable Solutions in E1 are subject to very significant restraints as follows: have an upstream catchment of less than 0.25 ha; be free from a history of flooding; not adjacent to a watercourse; not located in a low lying area; and not located in a secondary flow path.
- While the Building Code only requires floor levels to be above the 50 year AEP storm, where Section 71 & 72 of the Building Act applies, no frequency is stated but it has been determined by the Building and Housing Determination Tribunal that a minimum of 1 in 100 years is appropriate. It is also likely that the Building Act will be amended in due to course to the 1 in 100 year storm so it is recommended as good engineering practice that the 1 in 100 year storm be adopted in all situations.
- E1 is intended for individual building projects and is not to be used for the design of a subdivision stormwater system or for major building projects with a total impervious surface in excess of 1000 m² (including car parks etc).
- Likewise the method of calculating soakage rates in E1 is open to interpretation and Council requires the use of the procedure in the Soakage Design Procedures and Guidelines for subdivisions and major building projects.

7. Common Law

- Landowners including local authorities must comply with established common law as well as the direct provisions of legislation in respect of stormwater.
- Common law is *law* developed by judges, courts, and similar tribunals, stated in decisions that nominally decide individual cases but that in addition has precedential effect on future cases.
- One important aspect is the common law rights of "natural servitude" relating to stormwater runoff which in essence is a duty on the lower landowner to accept the natural flow of water (including rainfall) from higher land as long as it would normally fall there from the ordinary and natural use of the land. What constitutes "ordinary and natural use" is a question of fact in each case but it is clear the higher landowner is not entitled to discharge "foreign" water onto lower land, in other words water from a different water source.
- Strictly speaking the immediate discharge of water from a property where the land use is not natural and ordinary comprises a trespass whereas the discharge onto an immediate property which flows onto another person's land is a nuisance. The escape of water from one property to another can clearly constitute a nuisance, be it via a continuing escape or a one-off flooding.
- Negligence involves the breach of a duty of care owed to another as a result of which that other suffers loss. It allows a plaintiff to recover damages for losses which were reasonably foreseeable by the defendant when the wrong was committed. The outcome can either be an injunction to prevent the nuisance from continuing or the payment of damages.
- It seems clear that a council permitting a stormwater discharge onto private land from a subdivision outside of the requirements of its discharge consents or common law), be it

directly across a neighbouring property or via a discharge onto land it owns, will be liable for the outcome.

• Attached to this document is an article on the effect of both common law and legislation on the escape of water onto private land.

8. Miscellaneous Information:

• **Soakage Calculator** – this calculator is available on Council's website and is intended for residential and other projects with an impervious area of under 1000 m². It provides a means of compliance for the Building Code and Waikato Regional Council soakage requirements provided minimum soakage (i.e. in excess of 0.5 litres/min/m²) is available.

Provided there is "*known reasonable soakage*" e.g. water does not pond on the surface or a hole filled with water empties overnight, and the impervious area is less than 250 m^2 , then no soakage test will be required – as per the limited option on the Flow Chart.

 Soakage Design Procedures & Guidelines – this document is available on Council's website and was prepared to provide a standard method of ascertaining the design soakage rate and provides some generic solutions for the provision of soakage. It is particularly relevant to subdivisions and larger projects containing over 1000 m² of impervious surfaces.

It should be noted that the number and location of soakage tests is specified in 5.2 of the Soakage Procedures and Guidelines as follows:

"Due to the variability in soakage, even within local areas, a sufficient number of tests must be undertaken and located so as to be representative of the site. The minimum number of tests required is shown in Table 1 below. The development type is divided into Brownfield (sites in existing built up areas including infill subdivisions) and Greenfield (new undeveloped areas including multiple lot subdivision).

Development type	Proposed Lot / Site size	Number of tests required
Brownfield	< 400 m ²	1
Brownfield	400 – 1000 m ²	2
Brownfield	> 1000 m ²	2 per 1000 m ²
Greenfield	< 1000 m ²	1 per 4 lots, 2 minimum
Greenfield	> 1000 m ²	1 per 4000 m ² , 2 minimum

*If test results show a variability in design soakage rate of >2 litres / min / m2 then the number of tests must be increased to twice the number shown above".

• **The difference in the total runoff** in differing AEP storms is approximately as follows (this also approximately equates to the rate of runoff):

🔀 2 year storm 🛛 - historical design standard including much of our township's systems

★ 5 year storm - general standard 1990 - 2010

★ 10 year storm - current standard for primary systems

★ 100 year storm - current standard total runoff including secondary systems



Increase from:

- 2 yr to 5 yr = 2.5 times 2 yr to 10 yr = 3 times 2 yr to 100 yr = 5.4 times 10 yr to 100 yr = 1.8 times 50 yr to 100 yr = 1.15 times <u>Note</u>: 2 yr generally road only Later standards generally complete catchment
- **Runoff Coefficients** there are no runoff coefficients stated in Council documentation (or in NZS 4404:2010) and the runoff coefficients in E1 (VM1 Table 1) should be used.
- **Freeboard** this is generally specified in Council documentation as the height above peak water level to floor level. It is recommended as good engineering practice that this be as required in NZS 4404:2010 and be measured from the top water level to the underside of the floor slab or the underside of the floor joists, whichever is applicable.
- Storage on roads roads may be used as storage for the exceedence flows (i.e. over the 1 in 10 year AEP event) to a maximum of 400 mm over the centre line of the road. Where the road is not a dead-end then consideration can be given to a greater depth of ponding. The safe velocity of the flow should also be considered.
- Discharge to/from roads prior to 2002 local authorities had the right under provisions in the Local Government Act 1974 (and its predecessors) to discharge stormwater from roads into watercourses. This legislation was cancelled in 2002 as the provisions were overridden by the Resource Management Act 1991 pertaining to the need for comprehensive stormwater discharge consents. It is also covered by established Common Law.

Thus any new (or additional) discharge from roads to watercourses is now covered by Councils Comprehensive Stormwater Consents in urban areas and in particular to there being no downstream effects from increased flows. The established principals of Common Law also apply. These particularly apply when these flows are across land not owned by Council.

• **Consent Notices** – some land is subject to consent notices registered against the title that include stormwater disposal requirement. The existence of such notices need to be researched and taken into account when considering building proposals in particular.

 Overland Flow Paths — Council has carried out a high-level investigation into possible OFP's in its urban areas which appeared to indicate that all possible locations traversed private land before entering significant waterways. It has undertaken to carry out further investigations especifically in locations where there are indications that developments are proposed. This will include consideration of land purchase where this could facilitate the formation of OFP's.

9. Flow Chart (see over page)



Notes:

- A 1 in 10 year storm is one that has a 10% chance of occurring in any one year and a 1 in 100 year storm is one that has a 1% chance of occurring in any one year – a more accurate description is a 10% AEP or a 1 % AEP storm (AEP is "Annual Exceedence Probability"). The difference is design runoff is about 70%.
- The design of soakage systems which will vest in Council for future maintenance will require designs that minimise the cost of future maintenance. Where significant road or car parks are involved a suitable slit and oil interceptor will be required able to handle the full runoff rate.
- 3. The use of existing pipe systems requires a consideration of pipe capacity and overflow points in particular.
- 4. A consent notice on both titles will be acceptable. In rural areas where the exceedence flows cross the new boundary.
- Overland flow paths can be across private property provided agreement is reached with the affected property owner and is protected by an easement.
- Overland flow paths can be along roads provided they do not cause an overflow across private property unless agreement is reached with the affected property owner and is protected by an easement.
- Overland flow paths cannot end at the 100 year flood level of adjacent rivers as in general the river levels are the result of storms upstream rather than in or near the catchment being reviewed.
- 8. Soakage rates may require the design of storage into the soakage system or upstream.
- "Known reasonable soakage" for the purpose of this chart is for instance where water does not pond on the surface or a hole filled with water empties overnight.
- In the case of subdivisions the proposals shall show that no part of any existing stormwater system crosses the new boundary unless covered by an easement or covenant.
- Flows to be allowed for from brownfield sites are the additional stormwater runoff generated by the proposed developments.
- 12. Existing runoff must be shown to have actually left the site in the predevelopment condition and not be the theoretical runoff from the site.
- Unless specifically approved the runoff coefficients used must be those from E1 for the appropriate site conditions as of the date of application for the Comprehensive Discharge Consents – March 2001.