Manawatū District Council

ASSET MANAGEMENT PLAN

Three Waters 2024 – 2034

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V1.13	June 2024	Amended Implementation Plan	Wendy Thompson		

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AMP) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2024-2034 year planning period. The AMP will link to a Long-Term Financial Plan which typically considers a 10-year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provide Water, Wastewater and Stormwater (three waters) services to the Manawatū District.

The three waters assets owned by the Manawatū District Council are outlined in Tables 1.1-1.4 below:

Table 1.1 – Water Supply Service Summary

Scheme	Source	Treatment	Reticulation
Feilding	Surface water: • Oroua River Groundwater: • Campbell Rd Bore • Newbury Line Bore	Almadale Treatment Plant (Surface Water) Awa St Treatment Plant (Groundwater)	On Demand Excluding Mt Taylor which is on a restricted supply
Sanson	Groundwater Fagan Street	Treatment Plant adjacent to the new bore	Restricted Supply
Rongotea	Groundwater	Rongotea Water Treatment Plant	On Demand
Himatangi Beach	Groundwater	Himatangi Beach Water Treatment Plant	On Demand
Stanway–Halcombe	Shallow bores adjacent to the Rangitikei River	Water Treatment Plant adjacent to bores	Rural water scheme Restricted Supply
Waituna West	Groundwater	Waituna West Water Treatment Plant	Rural water scheme Restricted Supply
Ohakea Rural	Groundwater	Treatment Plant adjacent to bore	
Kiwitea Rural	Rural water scheme, Restricted Supply This scheme is operated entirely by a community committee and therefore is not covered in this Asset Management Plan		
Oroua No.1 Rural	Rural water scheme, Restricted Supply This scheme is operated entirely by a community committee and therefore is not covered in this Asset Management Plan		

Table 1.2 – Wastewater Service Summary

Scheme	Reticulation	Treatment	Within Centralisation Scope?
Feilding	Gravity network (Excluding Mt Taylor which has a pressure system)	Feilding WWTP Dual land/surface water discharge system.	Yes – Destination Treatment Plant
Halcombe	Gravity network	Halcombe WWTP – Dual land/ surface water discharge	Yes
Sanson	Gravity network	Sanson WWTP – Dual land/ surface water discharge	Yes
Rongotea	Gravity network	Rongotea WWTP – Discharge to surface water	Yes
Cheltenham	Gravity network servicing onsite septic tanks.	Cheltenham WWTP – Discharge to land	Yes
Kimbolton	Gravity network servicing onsite septic tanks.	Kimbolton WWTP – Discharge to surface water	Yes
Awahuri	Gravity network servicing onsite septic tanks.	Awahuri WWTP – Discharge to surface water	Yes
Himatangi Beach	Pressure system with onsite pump stations.	Himatangi Beach WWTP – Discharge to land	No plans to pipe to Manawatū WWTP

Table 1.3 – Stormwater Service Summary

Scheme	Reticulation	Targeted Rates Charge	Harmonised Rates Charge
Feilding	Well Developed, urban stormwater network	Targeted stormwater rate	Harmonised stormwater rate
Rongotea	Formal, village stormwater network	Targeted stormwater rate	Harmonised stormwater rate
Sanson	Formal, village stormwater network	Targeted stormwater rate	Harmonised stormwater rate
Halcombe	Village stormwater service	Targeted stormwater rate	Harmonised stormwater rate
Cheltenham	Village stormwater service	Targeted stormwater rate	Harmonised stormwater rate
Himatangi Beach	Village stormwater service	Targeted stormwater rate	Harmonised stormwater rate
Tangimoana	Village stormwater service	Targeted stormwater rate	Harmonised stormwater rate
Bainesse	Rural Drainage Scheme	Targeted stormwater rate	
Maire	Rural Drainage Scheme	Targeted stormwater rate	

Makowhai	Rural Drainage Scheme	Targeted stormwater rate
Oroua Downs	Rural Drainage Scheme	Targeted stormwater rate

Table 1.4 – Dwellings

Insurance No	Valuation Reference	Asset Description	Location
2315	14160/21010	Dwelling	341 Kawakawa Road, Feilding
2414	14160/07902	Dwelling	269 Kawakawa Road, Feilding
2649	14160/08000	Dwelling	223 Kawakawa Road, Feilding
2860	14160/08100	Dwelling	295 Kawakawa Road, Feilding

Table 1.5 below shows a summary of the replacement values, depreciated replacement values and annual depreciation for the above infrastructure assets.

Table 1.5 – Summary of Costs

Class Group	Replacement Value	Depreciated Replacement Value	Annual Depreciation Value
Water	$207,727,172	$109,109,105	$2,525,997
Wastewater	$195,123,961	$119,263,366	$3,224,612
Stormwater	$108,497,275	$75,259,446	$708,109
Total	$511,348,409	$303,631,918	$6,458,719

1.3 Levels of Service

This plan supports:

- The provision of a good quality, safe and reliable water supply to the district and adequate supply for firefighting in some areas of the district
- Maintaining and developing the three waters infrastructure to meet the current and future needs including growth
- Managing the three waters activity in a financially sustainable way
- Three waters infrastructure which meets the growth requirement outlined by Council
- Three waters services which comply with the regulatory and consenting requirements
- Mandatory compliance with the New Zealand Drinking Water Standards, including meeting minimum residual chlorine levels for all water sources
- Planned changes to pressure (LOS), to promote greater water efficiency and meet consent obligations.

The allocation in the planned budget is sufficient to continue providing existing services at current levels for the planning period. Although, some major projects have been moved out to future years in order to balance the funding required over the long term plan period.

The main service consequences of the Planned Budget are:

- Residual consenting and compliance risks of a delay in provision of the required budget for the Village Wastewater Centralisation projects in Halcombe, Cheltenham and Kimbolton based on funding constraints.

- Extension of the duration of use of an impaired asset, Almadale Water Treatment Plant due to a delay in provision of the required budget for the Feilding Water Resilience project based on funding constraints.
- The ability to complete Feilding stormwater improvement works in a timely manner to protect the community and properties from future heavy rainfall events, for which frequency is exacerbated due to Climate Change.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- District Growth
- Changes in land use
- Changing technologies
- Changing legislative requirements

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Infrastructure Strategy
- Manawatū District Plan
- Feilding Urban Growth Framework

1.5 Lifecycle Management Plan

What does it Cost

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Three Waters is estimated as $280,067,571 or $28,006,757 on average per year.

1.6 Financial Summary

What we will do

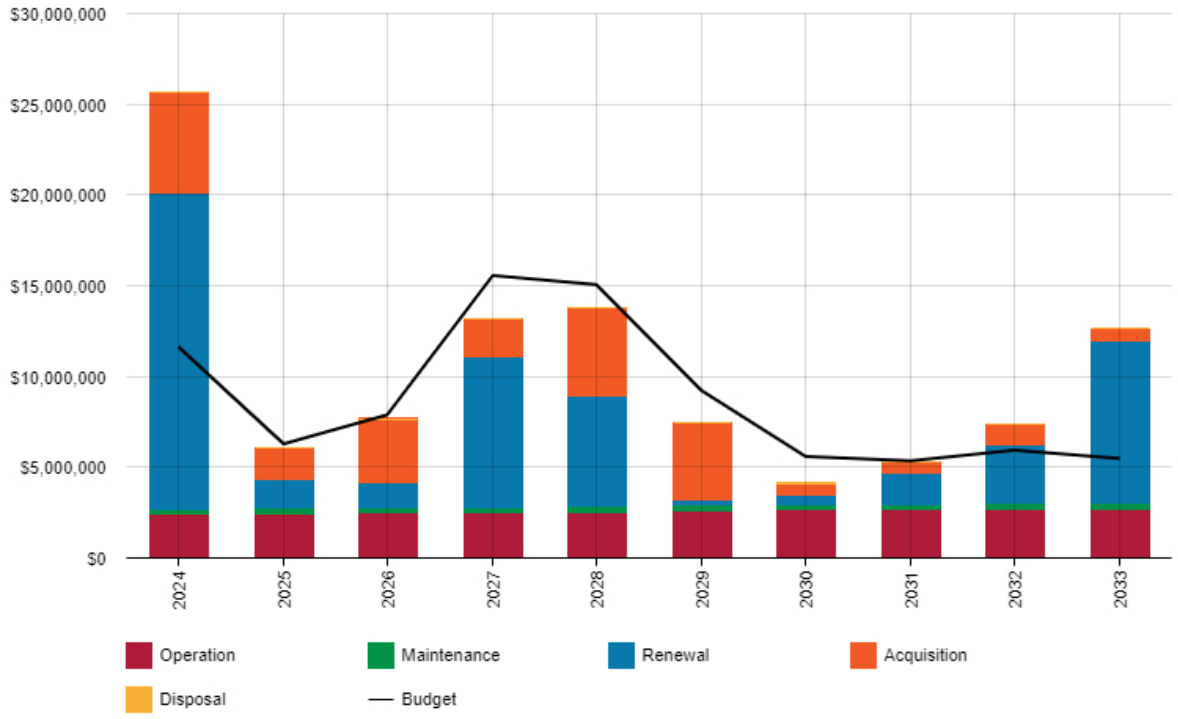
Estimated available funding for the 10 year period is $202,791,984 or $20,279,198 on average per year as per the Long-Term Financial plan or Planned Budget.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The informed decision making depends on the AMP emphasising the consequences of Planned Budgets on the service levels provided and risks.

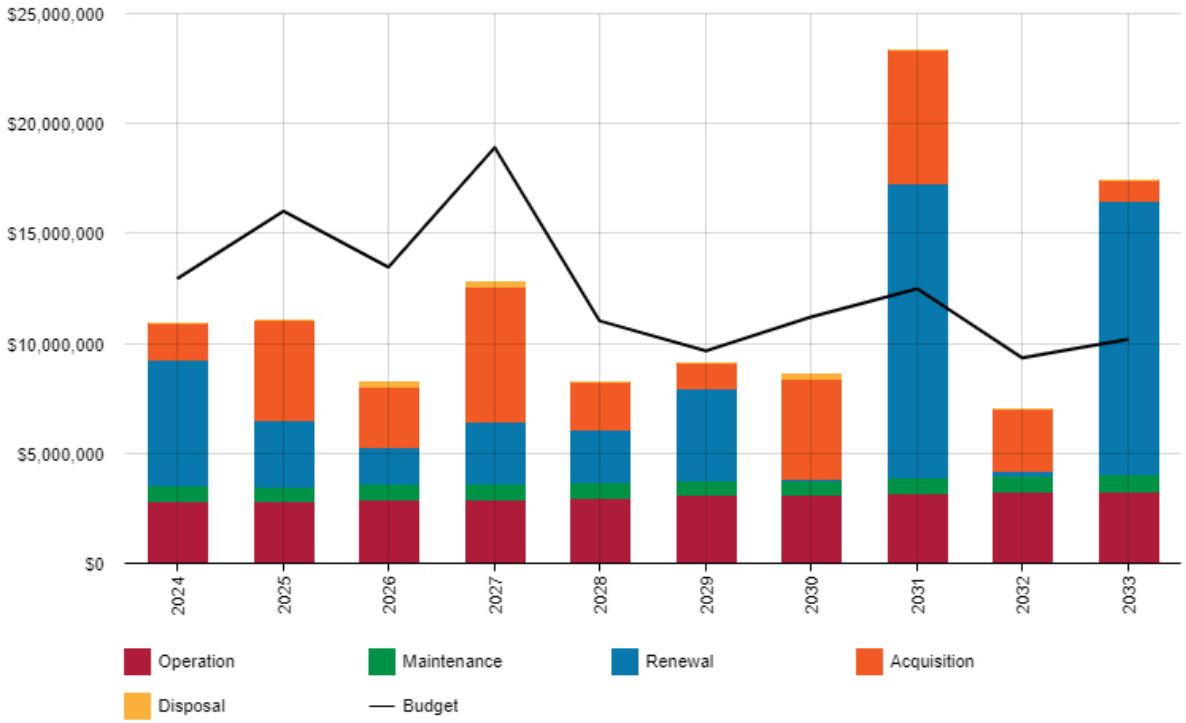
The anticipated Planned Budget for the Three Waters leaves a shortfall of $7,727,559 on average per year of the forecast lifecycle costs required to provide services in the AMP compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in Figure 1.1 below.

Figure 1.1 - Forecast Lifecycle Costs and Planned Budgets

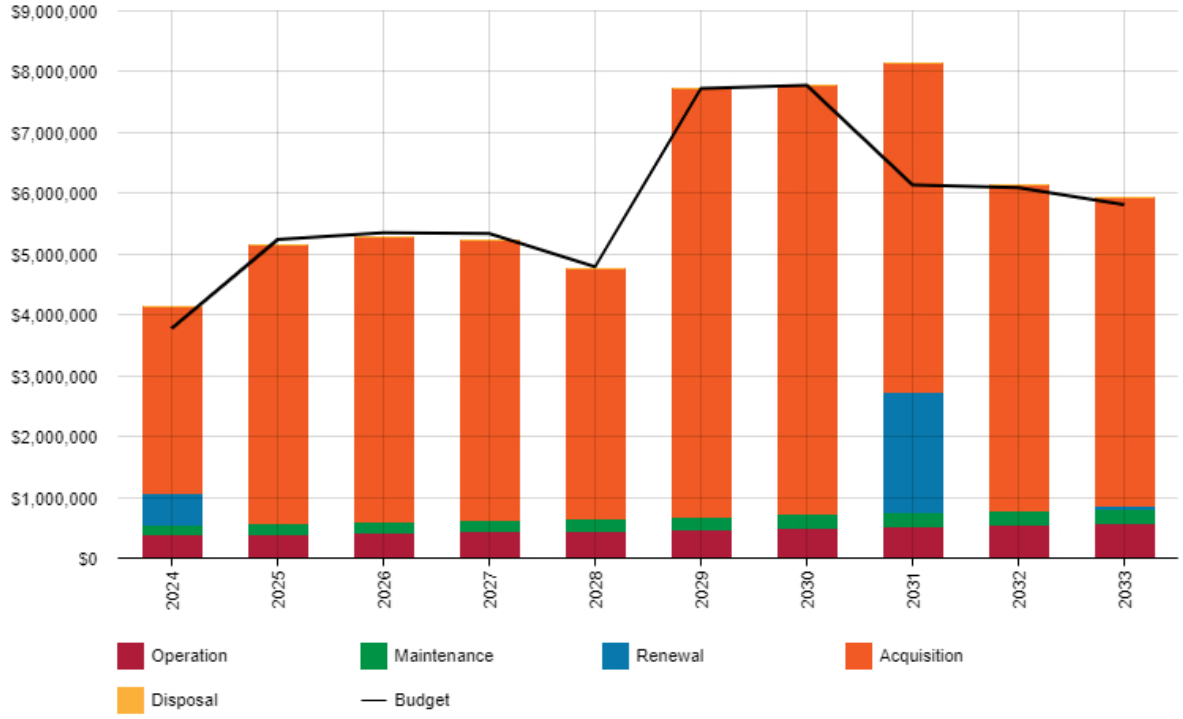
Water Supply



Wastewater



Stormwater



(Figure Values are in 2023/24 dollars).

We plan to provide Three Waters services for the following:

- Operation, maintenance, renewal and acquisition of water supply, wastewater, and stormwater to meet service levels set by Manawatū District Council in annual budgets.
- Our major projects include wastewater centralisation, Feilding water resilience, Precinct 4 growth works, and stormwater mitigation works within the 10-year planning period.

Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Reduced levels of service
- Risk to public health
- Unconsented discharges to the environment
- Damage to reputation
- Legal action

We will endeavour to manage these risks within available funding by:

- Providing back up generation at all key infrastructure sites
- Feilding water resilience project
- Wastewater centralisation project
- Urban flood protection projects

1.7 Asset Management Planning Practices

Key assumptions made in this AMP are:

- Population Growth
- Household Growth
- Distribution of Household Growth
- Demographic Change
- Land Use Change
- Climate Change
- Useful life of Assets
- Sources of funds for future replacement of significant assets
- Infrastructural Capacity
- Achievement of Capital Works Programme
- Resource consents

Assets requiring renewal are identified from either the asset register or an alternative method.

The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal. Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The alternative method was used to forecast the renewal lifecycle costs for this AMP.

This AMP is based on an 'uncertain-to-reliable' level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this AMP to improve asset management practices are:

- Data validation for improved asset management maturity
- Software training for all users of the asset management system
- Asset audits to improve maintenance and renewal programmes
- Implement a condition assessment programme for assets
- Strengthen asset management enablers and governance systems

2.0 INTRODUCTION

2.1 Background

An asset is an object or entity that has actual or potential value to an organisation. Asset management involves the balancing of costs, opportunities, and risks against the desired performance of assets, to achieve the organisational objectives. This balance may need to be considered over different timeframes.

Asset management enables Council to examine the need for, and performance of, assets and asset systems at different levels. Additionally, it enables the application of analytical approaches towards managing an asset over the different stages of its lifecycle, this can start with the conception of the need for the asset, through to its disposal, and includes the management of any potential post disposal liabilities.

This Asset Management Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The repeal of the previous Government's Three Waters Legislation on 14 February 2024 gave assurances of continued council ownership and control of water services, and responsibility for service delivery. This Three Waters Asset Management Plan therefore includes information on Council three waters services.

The AMP is to be read in conjunction with the following key documents:

- **Long Term Plan (LTP)**: A consultation document that contains key information about Council's activities, assets, levels of service, and costs of providing services, to cover a period of at least 10 years. It sets out the Council's funding and financial policies and a financial forecast for the years covered by the plan. The LTP is reviewed on a three-year cycle.
- **Infrastructure Strategy:** A strategic plan that sets out the requirements for the long-term management of our infrastructure assets to ensure that they continue to deliver on levels of service over the next 30 years. It identifies significant issues relating to the Districts infrastructure, and the principal options for managing those issues, including the implications of those options.
- **District Plan**: Sets out the policies and rules for the use of land in the District, including permitted activities and activities for which resource consent must be obtained, while specifying the environmental outcomes that Council should be aiming for.
- **Annual Plan**: Sets out the works to be actioned over the next financial year, how much this will cost, the means of funding these works, and the performance measures to be met within each activity.
- **Council Bylaws**: Bylaws contain legislative mechanisms and guidelines for management of the Three Waters services and other activities. The current MDC Bylaws that relate to 3 Waters include the Drainage Bylaw 2022, Trade Waste Bylaw 2022, and the Water Supply Bylaw 2019.

2.2 Asset Management Maturity

Asset Management maturity is the extent to which the maturity of the organisations asset management practices is able to meet the current and future needs of the organisation and is a lead indicator of future performance. This is important as it reveals the extent of the difference (if any) between current and target levels of asset management maturity in Council and identifies improvement actions that can lift performance to the target level.

Asset Management maturity is defined by the International Infrastructure Management Manual (IIMM) produced by NAMS at four levels:

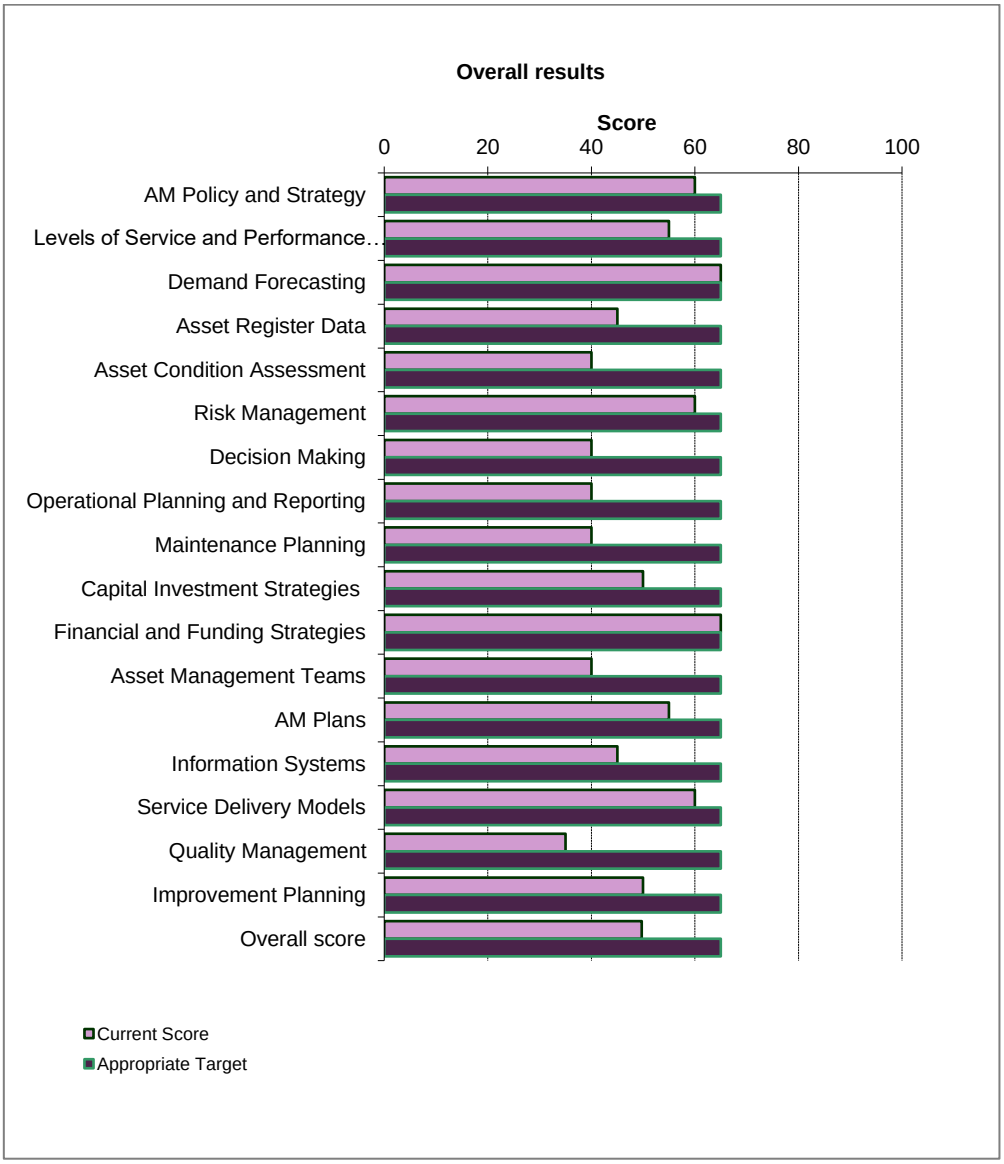
- **Minimum:** the absolute lowest level essential for owning and maintaining a significant quantity of assets
- **Core:** represents a basic but sound level of Asset Management practices
- **Intermediate:** moves towards best practice
- **Advanced:** the highest level of Asset Management maturity

This hierarchy applies to all aspects of Asset Management practice. There is a cost in moving from the more basic levels of Asset Management to the higher levels in terms of time, expense, and effort.

In line with the IIMM hierarchy the Aset Management Team self-evaluated the level of organisational maturity within the asset management space using the template developed by Treasury. The self-assessment template aligns with the IIMM framework.

The outcome of the self-assessment is summarised in Figure 2.1, showing the target level of maturity for an organisation of size and complexity of MDC was the 'Intermediate' (65) and the current overall level is 'Core' (50).

Figure 2.1 - Asset Management Maturity Self-Assessment Result



A number of actions to improve the level of maturity towards the target can be identified from the self-assessment in the areas of:

- Understanding and Defining Requirements (Section 2 of IIMM):
    - AM policy and strategy
    - Levels of service and performance management
    - Demand forecasting
    - Asset register data
    - Asset condition assessment
    - Risk management
- Developing Asset Management Lifecycle Strategies (Section 3 of IIMM):
    - Decision making
    - Operational planning and reporting
    - Maintenance planning
    - Capital investment strategies
    - Financial and funding strategies
- Asset Management Enablers (Section 4 of IIMM):
    - Asset management teams
    - AM plans
    - Information systems
    - Service delivery models
    - Quality management
    - Improvement planning

While it is not anticipated that the level of organisational maturity will reach the target level in a single AMP cycle, specific improvements can be made during the period to advance asset management performance. These improvement actions are listed in Section 8.

2.3 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers.

The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing, and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,

- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

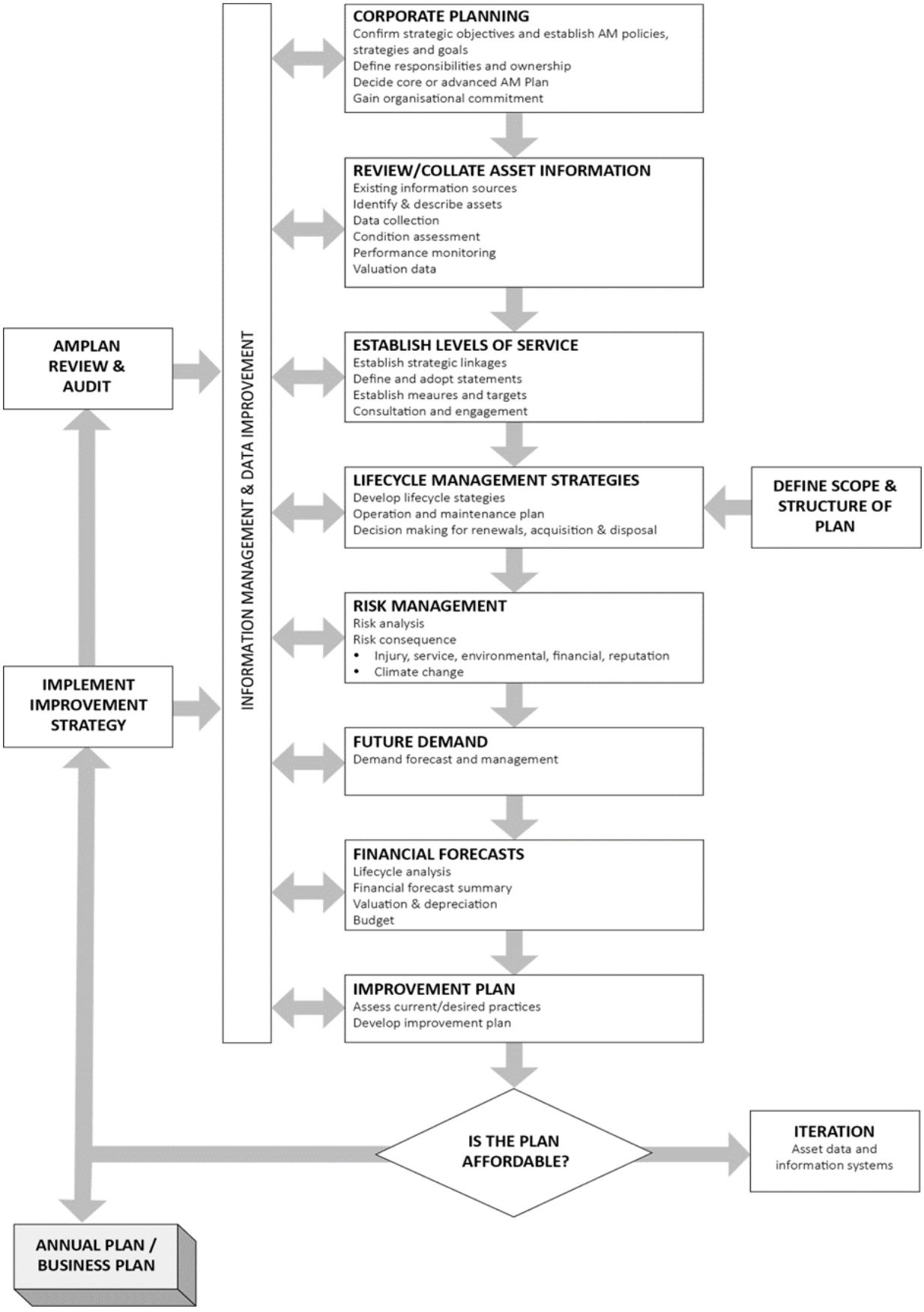
- International Infrastructure Management Manual 2015 1
- ISO 550002

A road map for preparing an Asset Management Plan is shown in Figure 2.2 below:

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles, and terminology

Figure 2.2 - Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



Key stakeholders in the preparation and implementation of this AMP are shown in Table 2.1 below.

Table 2.1: Key Stakeholders in the Asset Management Plan

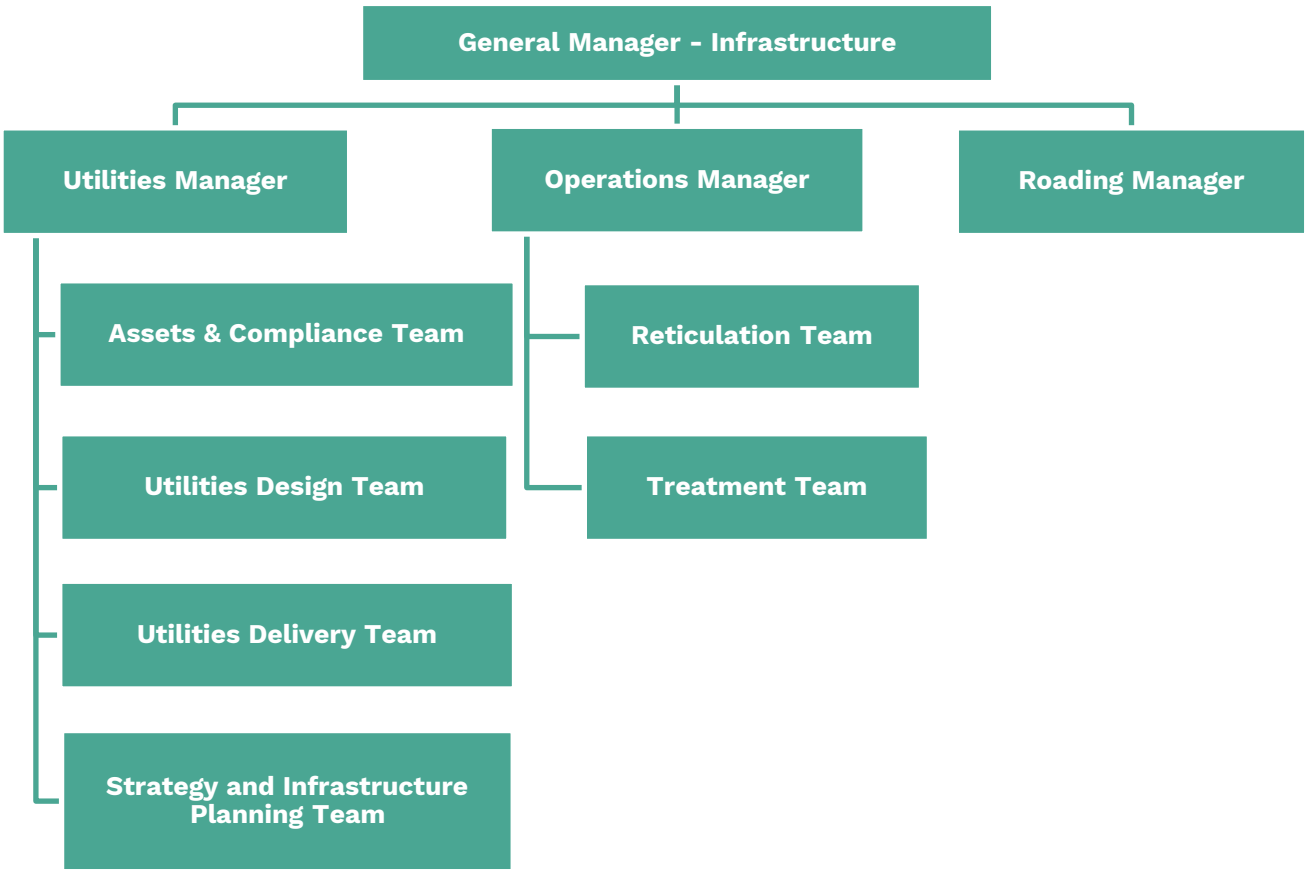
Key Stakeholder	Role in Asset Management Plan
Elected Members	▪ Represent needs of community/shareholders ▪ Allocate resources to meet the organisations objectives in providing services while managing risks ▪ Ensure organisation is financially sustainable
CEO/Senior Management	▪ Executive management endorsement, sign-off and executive ownership ▪ Endorse development of asset management plans and provide resources to complete this task ▪ Set high level priorities for asset management development and raise the awareness of this function among staff and contractors
Utilities Manager and Asset Management staff	▪ Development, implementation, and maintenance of the AMP
The wider community	▪ The community are the main stakeholders in the AMP who provide quality feedback on asset performance, new service demand, desired level of service, agreed level of service and future service planning.
Key Partnerships & stakeholders	
Key partnerships	▪ Neighbouring councils ▪ Shared services (Rangitīkei District Council) ▪ Horizons Regional Council ▪ Iwi and Tangata Whenua ▪ Community groups and boards
External stakeholders	▪ The community – citizens and ratepayers ▪ Other Government agencies ▪ Utility companies ▪ Developers ▪ Contractors ▪ Regulatory and monitoring bodies ▪ Professional service providers

2.4 Business Frameworks

Council's three waters assets are managed by the Utilities Manager. There are a number of cross-departmental links that are important to the correct functioning of the utilities team and the management of the utilities network. The most significant of these are with the financial, administration services, operations, and reticulation departments.

Our organisational structure for service delivery from infrastructure assets is detailed below:

Figure 2.3 - Organisational structure for service delivery from infrastructure assets



Key points of the structure include:

- Overall responsibility of three waters service delivery sits with the General Manager – Infrastructure, who reports directly to the Chief Executive.
- Through the Utilities Manager and Operations Manager roles there is the clear delineation of responsibility for:
  - Infrastructure planning, engineering, and project delivery activities
  - Operations and maintenance activities including reticulation and treatment.
- Manawatū District Council has a shared service contract with the Rangitikei District Council (RDC). This shared service covers roading maintenance and professional services and three waters professional services, operations, and treatment. Under this agreement MDC employs staff and delivers the nominated services to RDC. However, each council still owns their own assets and sets applicable rates and charges.

2.5 Community Committees

Each township (excluding Feilding) and rural community has a local Community Committee elected every three years, established under the Local Government Act 2002. The purpose of this committee is to consult with its community and relay local concerns and preferences to the Council. Township services are undertaken in conjunction with, or at the behest of, local township committees.

The complete list of Community Committees is as follows:

- Āpiti Community Committee
- Halcombe Community Committee
- Himatangi Community Committee
- Kimbolton Community Committee
- Pōhangina Community Committee
- Rangiwāhia Community Committee
- Waituna West and District Community Committee
- Tangimoana Community Committee
- Bainesse/Rangiotū Community Committee
- Cheltenham Community Committee
- Colyton Community Committee
- Hiwinui Community Committee
- Kiwitea Community Committee
- Sanson Community Committee
- Rongotea Community Committee

2.6 Organisational Culture

An important measure of the quality of Council's asset management is the ability, experience and qualifications that make up the overall competency of the individuals and companies involved in its preparation. Council employs a limited range of technical staff qualified to carry out the asset management function.

In this context competency refers to applied knowledge, it is not just the knowledge itself. Competencies can be described as the behaviours that employees must have, or must acquire, to input into a situation in order to achieve high levels of performance. There are various competencies that the Council requires of its staff to effectively manage its infrastructure assets; these are not statements of current individual's skills or competencies; rather they are statements of the councils desired competency in the areas and subjects detailed.

Council's People and Culture team identify the gaps between the competencies of current staff and those required in the organisation. These gaps will be used to guide staff training and development programmes.

2.7 Financial Sustainability

The Local Government Act 2002 requires Council to prepare a Financial Strategy as part of its Long-Term Plan (LTP). This strategy outlines how the Council intends to manage its finances prudently. This means that the Council will act with careful deliberation and will always consider financial implications of decisions on the community. Council must make adequate and effective provision to meet expenditure needs identified in the Annual and Long Term Plans.

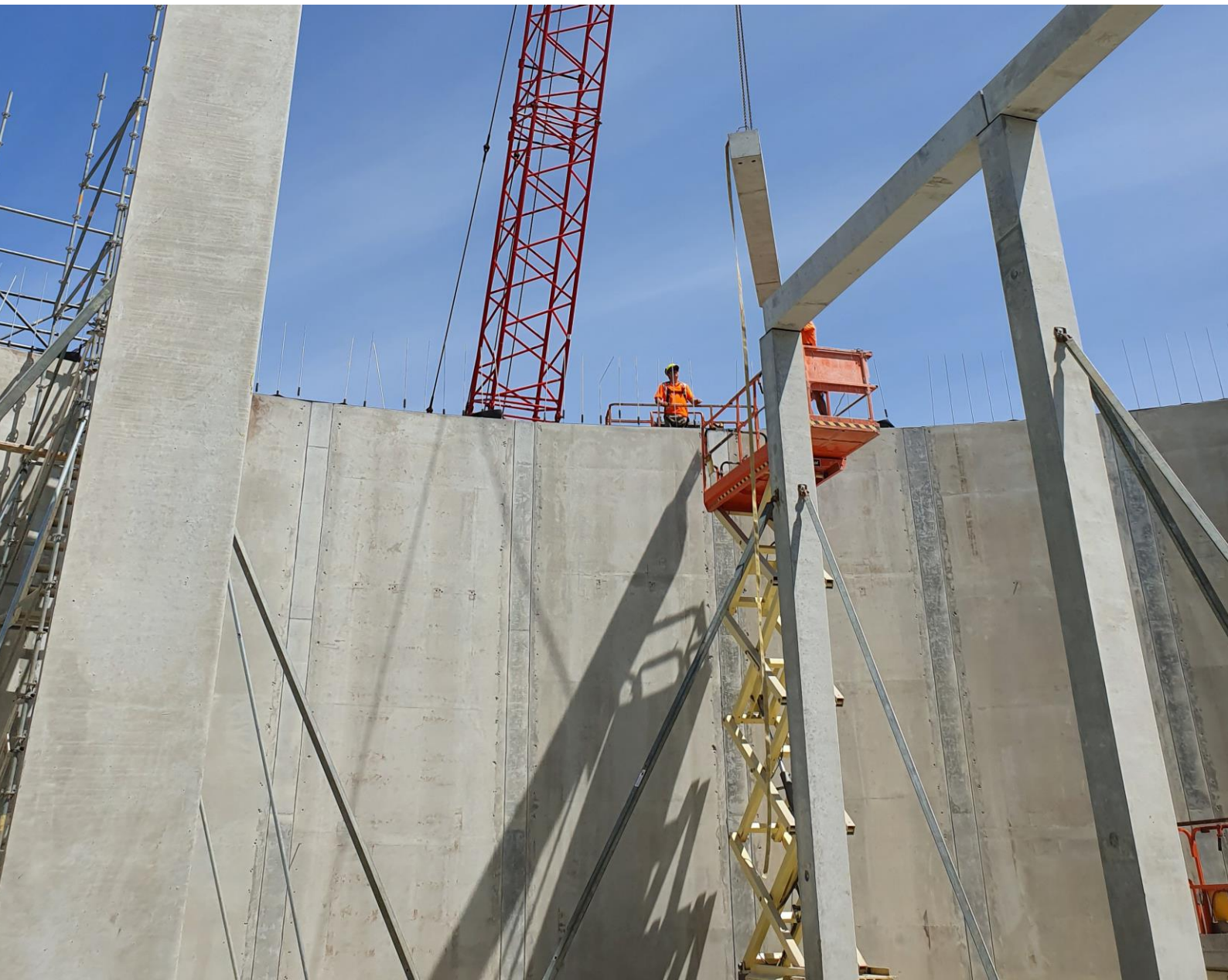
The Financial Strategy provides Council with a financial framework for making decisions, allowing proposed spending to be assessed against rates and borrowing requirements over the whole ten years of the LTP. It draws together all the issues in the LTP along with the financial consequences and presents these along with the Councils response.

This will:

- Enable the community to readily identify what the financial issues are
- Provide the community with certainty about how expenditure will be met
- The impacts of proposals on levels of services, rates, debts, and investment

- Enable the community to predict how the Council intends to manage the financial issues in the future
- Provide guidance on decision makers when considering implications of financial issues on communities now and into the future.

Council's vision is *Manawatū District - proudly provincial. A great place to land.* The services and projects outlined in the Long Term Plan will ensure this vision becomes a reality. The provision of services and projects comes at a cost. Council aims to spend within its means, achieving a balance between meeting the needs of the community with its ability to pay.



3.0 LEVELS OF SERVICE

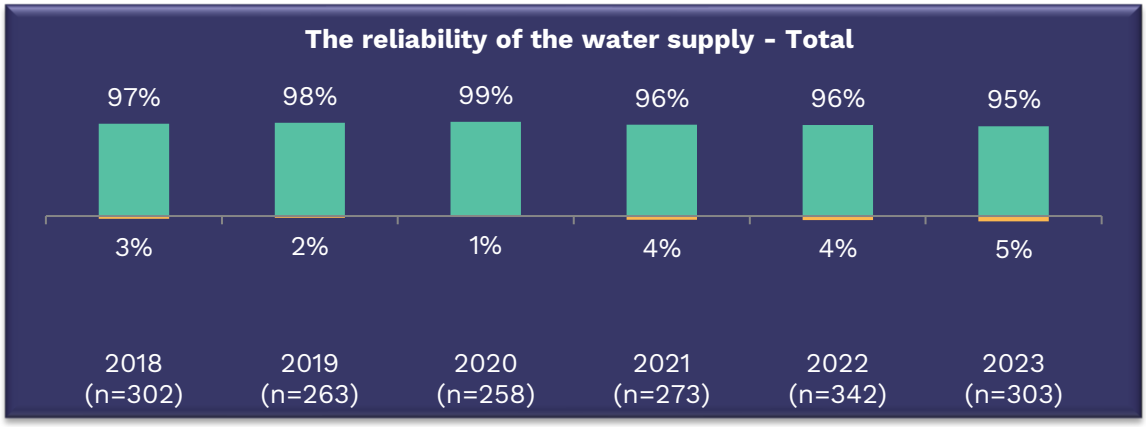
3.1 Customer Research and Expectations

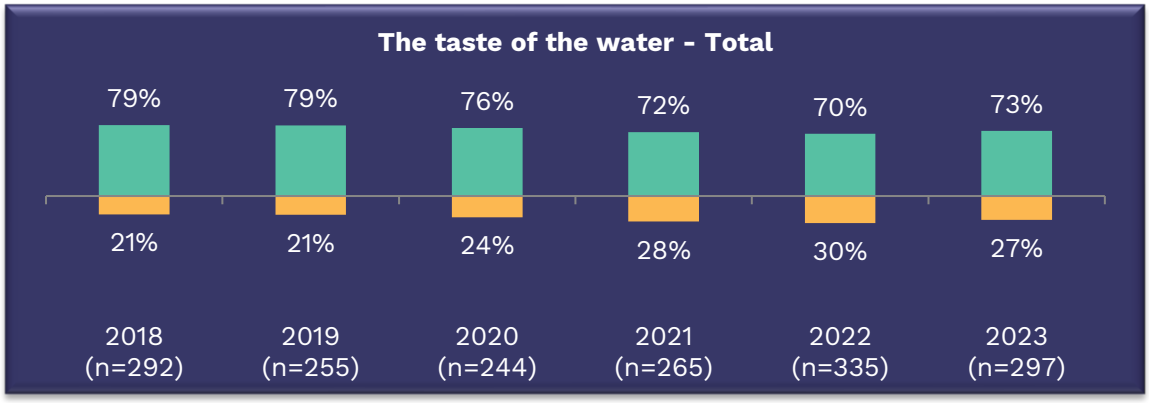
This AMP is prepared to facilitate consultation prior to adoption of levels of service by the Manawatū District Council. Future revisions of the AMP will incorporate customer consultation on service levels and costs of providing the service. This will assist the Manawatū District Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

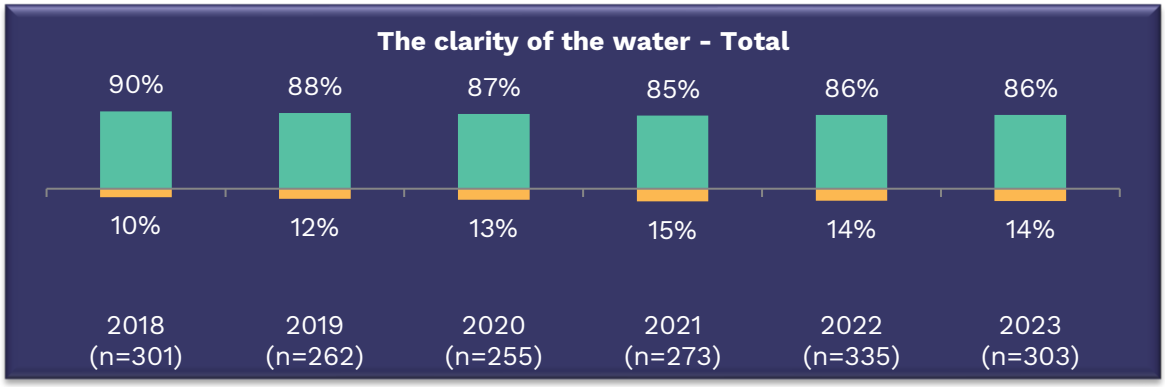
Figure 3.1 summarises the results from our Customer Satisfaction Survey.

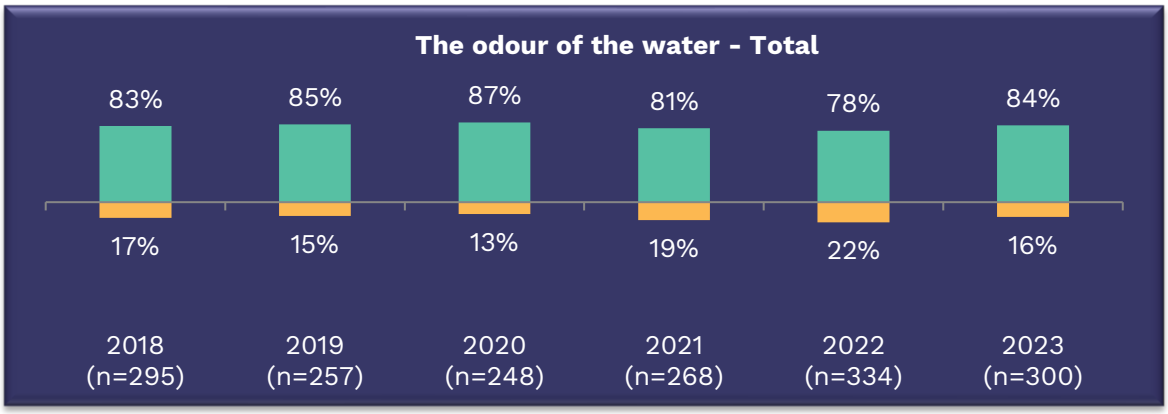
Figure 3.1 - Customer Satisfaction Survey Levels

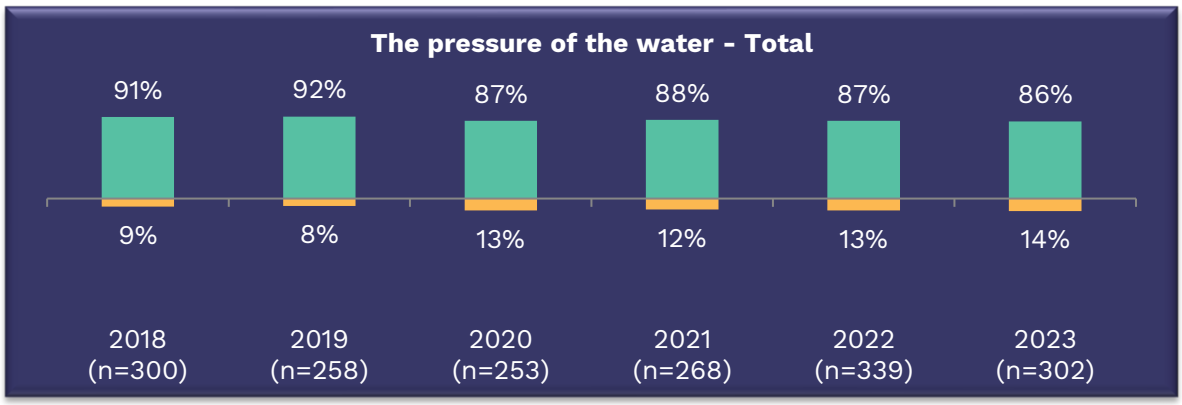
Water Supply



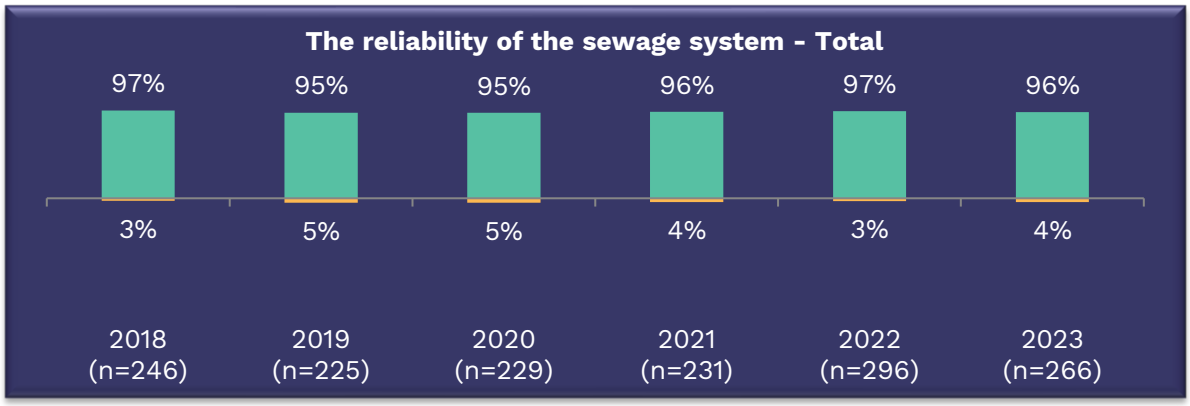


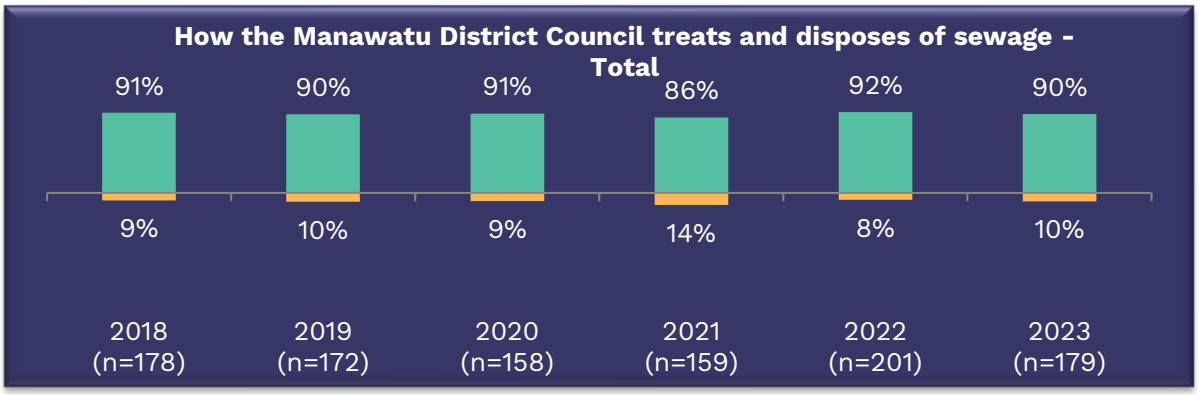



The odour of the water - Total
83%
85%
87%
81%
78%
84%
17%
15%
13%
19%
22%
16%
2018 (n=295)
2019 (n=257)
2020 (n=248)
2021 (n=268)
2022 (n=334)
2023 (n=300)

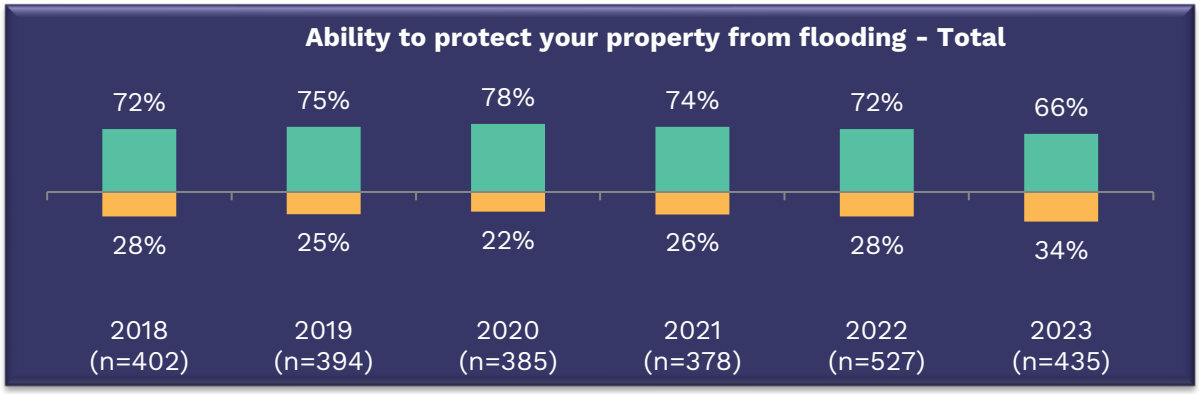

The pressure of the water - Total
91%
92%
87%
88%
87%
86%
9%
8%
13%
12%
13%
14%
2018 (n=300)
2019 (n=258)
2020 (n=253)
2021 (n=268)
2022 (n=339)
2023 (n=302)

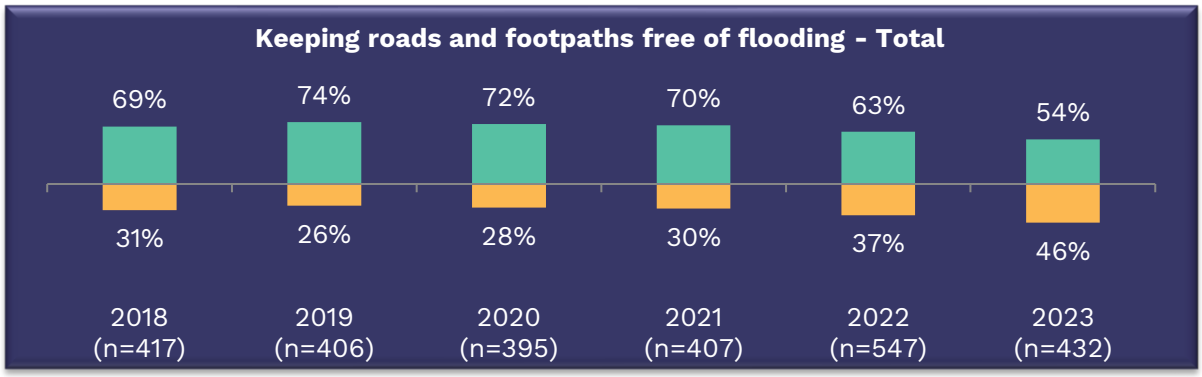
Wastewater

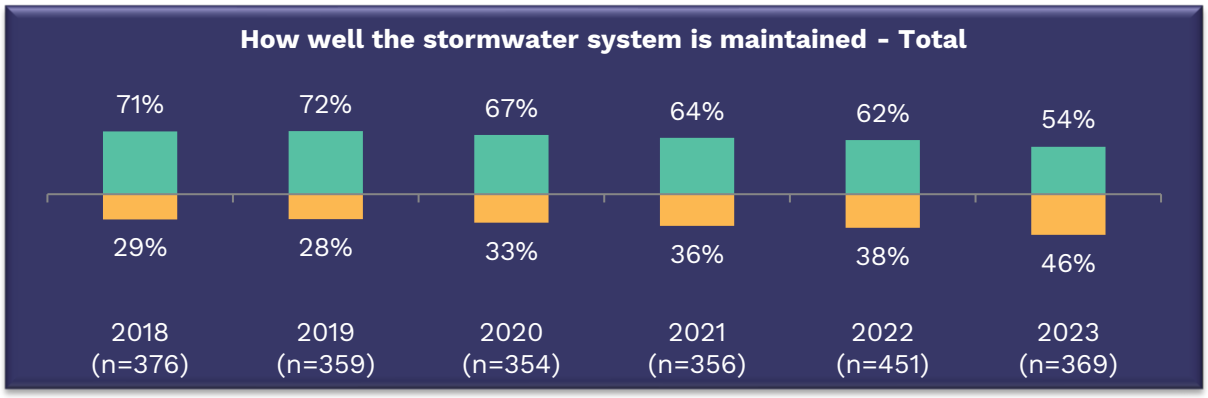

The reliability of the sewage system - Total
97%
95%
95%
96%
97%
96%
3%
5%
5%
4%
3%
4%
2018 (n=246)
2019 (n=225)
2020 (n=229)
2021 (n=231)
2022 (n=296)
2023 (n=266)


How the Manawatu District Council treats and disposes of sewage - Total
91%
90%
91%
86%
92%
90%
9%
10%
9%
14%
8%
10%
2018 (n=178)
2019 (n=172)
2020 (n=158)
2021 (n=159)
2022 (n=201)
2023 (n=179)

Stormwater


Ability to protect your property from flooding - Total
72%
75%
78%
74%
72%
66%
28%
25%
22%
26%
28%
34%
2018 (n=402)
2019 (n=394)
2020 (n=385)
2021 (n=378)
2022 (n=527)
2023 (n=435)


Keeping roads and footpaths free of flooding - Total
69%
74%
72%
70%
63%
54%
31%
26%
28%
30%
37%
46%
2018 (n=417)
2019 (n=406)
2020 (n=395)
2021 (n=407)
2022 (n=547)
2023 (n=432)



3.2 Strategic and Corporate Goals

This AMP is prepared under the direction of the Manawatū District Council vision, goals and objectives.

Our vision is:

"Proudly provincial. A great place to land – Wehi n ate kainga taurikura nei ki tauwhenua."

The Manawatū District Council have set strategic goals. The relevant goals and objectives and how these are addressed in this AMP are summarised in Table 3.1.

Table 3.1 - Goals and how these are addressed in this Plan

Goal	Objective
A place to belong and grow	We provide leisure and sports facilities and support community activities to encourage social and cultural well-being for everyone
A future planned together	We work with all parts of our community to plan for a future everyone can enjoy.
An environment to be proud of	We protect and care for the Manawatū District's natural and physical resources.
Infrastructure fit for the future	We ensure the Manawatū District has infrastructure (water, roads, etc.) that meets the needs of the community now and into the future.
A prosperous, resilient economy	We aim to make the Manawatū District a great place to live, to visit and to do business.
Value for money and excellence in local government	We take pride in serving our communities. We focus on doing the best for the District.

Figure 3.2 - Relationship to Key Council Planning Processes

What does it cost?

The forecast lifecycle costs necessary to provide the services covered by this AMP includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AMP may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AMP is the forecast of 10-year total outlays, which for the Three Waters is estimated as $280,067,571 or $28,006,757 on average per year.

3.3 Significance Policy

Under the LGA 2002, each Council is required to have a Policy of Significance. The requirements for the policy can be seen as being a means for ensuring that in making decisions that Council is:

- Clear about why it is addressing a matter
- Has considered and evaluated the options and alternatives
- Has information on the community view about the matter and the options for addressing it, and particularly it has an understanding of the views and preferences of those persons likely to be affected by, or have an interest in the matter.

A Significant Activity is one that has a high degree of significance in terms of its impact on either:

- The well-being of the people and environment of Manawatū District and/or
- Persons likely to be affected by or with an interest in that activity and/or
- Capacity of the Manawatū District Council to provide for the well-being of the district

- Manawatū District Council considers Three Waters to be a significant activity and therefore this requires consultation.

The Council's Public Consultation Policy states that the Council will;

- Clarify its expectations through public consultation
- Allow sufficient time for effective response to its proposals
- Report on public proposals and follow up when necessary
- Maintain the consultative process.

There are a number of instances where the Council will undertake consultation at a District wide or comprehensive level. This generally occurs when there is a requirement to use the Special Consultative Procedure as prescribed in the LGA 2002. This occurs in the following situations:

- Adopting the Annual Budget
- Adopting, amending or reviewing a Bylaw
- Proposing a change in the way a significant activity is undertaken
- Significant decisions not already provided for in the Community Plan
- Termination of a service.

The Council will decide that some decisions are significant and will therefore require a more rigorous assessment of options and a more robust consultative process. Those decisions are treated as amendments to the Community Plan and can be dealt with either separately or as part of the Annual Plan process.

3.4 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Three Waters service are outlined in Table 3.2.

Table 3.2 - Legislative Requirements

Legislation	Requirement
Building Act 2004	Rules around building compliant structures
Civil Defence Emergency Management Act 2002	Requirement to continue service provision even in an emergency, and to be prepared for emergencies. Structure of emergency management.
Hazardous Substances and New Organisms Act 1956	Regulation of hazardous substances.
Health Act 1956	Requires local authorities to provide sanitary works. Requires Water Safety Plans for water supplies
Health and Safety at Work Act 2015	Health & Safety obligations and liability.
Land Drainage Act 1908	Regulates drains and watercourses.
Local Government Act 2002	Purpose of local government. Structure, governance, planning, decision-making. Regulatory powers.

Local Government (Rating) Act 2002	Provides powers to collect set, assess and rates to fund activities.
Public Works Act 1981	Enables acquisition of land for public works.
Resource Management Act 1991	Responsibility to manage natural resources in a sustainable manner and engage with iwi. Provides certain regulatory powers.
Utilities Act 2010	Requires Utility operators to comply with the Code of Practice
National Infrastructure Plan	The National Infrastructure Plan (NIP) details the Government's view of the challenges and priorities for infrastructure. The 2015 NIP describes the view to 2045. The aim is New Zealand having a modern, integrated, and efficient infrastructure system which underpins a prosperous and inclusive society with high-quality state services and a healthy and sustainable natural environment. Economic performance is strong with infrastructure that supports international connectedness, increased productivity, movement up the global value chain, and more exports and growth. It helps enable all New Zealanders to reach their full potential and play a meaningful role in the economy and society.
National Policy Statements	The National Policy Statement for Freshwater Management (NPS-FM) sets out the objectives and policies for freshwater management under the Resource Management Act 1991. This NPS directs Regional Councils to establish objectives and set limits for freshwater in their regional plans. In the Manawatū-Whanganui region, this is achieved through the Horizons Regional Council One Plan.
National Environmental Standards	The Ministry for the Environment (MfE) has produced National Environmental Standards (NESs) to protect the New Zealand environment, and work towards a consistent approach to environmental management across the country. These are regulations issued under Sections 43 and 44 of the Resource Management Act 1991 (RMA).
Horizons One Plan	The One Plan is the plan for resource management in the Manawatū-Whanganui Region. It focuses on the big four issues facing resource management in the Region. This document, and the rules contained within, has a major impact on the water, wastewater, and stormwater services that Manawatū District Council provides. This document, and the rules contained within it, has a major impact on the water, wastewater, and stormwater services that Manawatū District Council provides. Horizons determine the quantity of water we can abstract from bores or streams in the Region. They also determine the quality and quantity of wastewater or stormwater that we can discharge to the environment.
Manawatū-Whanganui Civil Defence Emergency Management Group Plan	The CDEM Group Plan defines the riskscape of the region with respect to natural hazards. It also discusses the 4 R's of Civil Defence: Reduction, Readiness, Response and Recovery. Asset Management Planning plays a vital role in Reduction - reducing the exposure of our assets and the community to risks from natural hazards. Water Supply and Wastewater are considered lifeline utilities, and stormwater networks can reduce the impact of flood events, so all three are vital to the successful implementation of the Group Plan.
Health and Safety at Work Act 2015	New Zealand's key work health and safety legislation is the Health and Safety at Work Act 2015 (HSWA) and regulations made under that Act. All work and workplaces are covered by HSWA unless specifically excluded.

Manawatū River Accord	Manawatū District Council is a member of the Manawatū River Leaders' Accord. This group is committed to actions that improve the quality of the Manawatū River, which in our District means improving the quality of its tributary, the Oroua River. Improvements to the Feilding WWTP have the most impact on meeting our commitments to the Accord.

3.5 Internal Documents

There are a number of key documents that underpin Council activities, including three waters. Table 3.3 below gives a summary of key points within these documents:

Table 3.3 – Internal Documents

Document	Key Points
Manawatū District Long Term Plan	The Long Term Plan details the Council's Plans for the next ten years including how Council intends to fund its ongoing programmes and capital works.
Significant and Engagement Policy	Indicates criteria for determining significance, work, and engagement level.
Infrastructure Strategy	Discusses overall trends Council needs to be aware of in planning for sustainable infrastructure in the District.
Operational Guidelines	Explains the operation direction for each activity and informs levels of service.
Engineering Standards for Land Development	Provides specific requirements, guidelines and minimum engineering standards for subdivision and developments with the Manawatū District.
District Plan	This provides zoning throughout the district. Certain activities that are permitted in one zone may not be permitted in another. The different types of resource consents are land use and subdivision. Activities that need resource consent are classified as controlled, restricted discretionary, discretionary, and non-complying.
Feilding Urban Growth Framework	The Feilding Framework Plan presents the results of a strategic analysis of the needs and challenges for Feilding urban growth and development.
Council Bylaws	Contain legislative mechanisms and guidelines for the management of three waters and other activities.
Resource Consents	If the construction of an asset does not meet the development controls outlined in the District Plan or relates to an activity that has the potential to result in adverse effects on the environment beyond those contemplated by the District Plan provisions, resource consent may be required. An Assessment of Environmental Effects (AEE) is required to support any resource consent applications to the respective Council when seeking approval to construct, alter or vary the use of a facility or building that is not permitted by the relevant plan.

3.6 Customer Levels of Service

The Customer Levels of Service apply to the mandatory groups of activities as specified in the Act:

- Water supply
- Sewerage and the treatment and disposal of sewage
- Stormwater drainage

- Flood protection and control works

There are several drivers behind the levels of service MDC provide for water, wastewater and stormwater within the Manawatū District, these include:

- Customer service expectations.
- Community outcomes for the Council, as stated in our Long-Term Plan.
- Legislative requirements, including DIA requirements for mandatory performance measures.
- Resource consents performance conditions.

In Table 3.4 under each of the service measures types there is a summary of the performance measure being used, the current performance, and the expected performance for years 1-3 and years 4-10 based on the current budget allocation.

Table 3.4 - Customer Level of Service Measures

Water Supply Activity Statement Summary				
What We Do	Undertake water treatment to ensure that it is safe to drink and also ensure there is enough water for supply.			
How We Do It	• Providing water supplies to meet residential, industrial/commercial, and fire-fighting needs via Council's four urban drinking water schemes: Feilding, Himatangi Beach, Sanson and Rongotea; • Providing rural water schemes in Stanway-Halcombe, Waituna West and Ohakea to meet residential and agricultural needs; • Maintaining and repairing water treatment plants and water storage facilities; • Maintaining and repairing Council's reticulation network system; • Monitoring and managing the demand for water; • Administering the following two rural supply schemes that are community operated at Kiwitea and Oroua No.1 • Ensuring that all Council water schemes meet the appropriate standards.			
Level of Service Statement	**Performance Measure**	**Baseline**	**Target for Years 1-3**	**Target for Years 4-10**
You can expect that the potable water we supply is safe to drink	We will measure this by the extent to which Council's drinking water supply complies with: • Part 4 of the Drinking Water Standards (bacteria compliance criteria), and • Part 5 of the Drinking Water Standards (protozoal compliance criteria) Note: The Drinking Water Standards referred to in the targets are the Water Services (Drinking Water Standards for New Zealand) Regulations 2022	• Bacterial Compliance 2021-2022: There has been 100% compliance with the Drinking Water Standards for New Zealand. All samples taken showed that the water was safe i.e.no positive E coli • Protozoal Compliance: 2021-2022: There has been 100% compliance with the New Zealand Drinking Water Standards criteria for protozoa. Stanway-Halcombe Rural Water Supply has been excluded from this compliance measure	• No public health risk with substantiated positive E-coli detected in the water supply • 100% Drinking Water Standards of New Zealand compliance criteria for protozoa are met, with the exception of the Stanway-Halcombe Rural Water Supply	• No public health risk with substantiated positive E-coli detected in the water supply • 100% Drinking Water Standards of New Zealand compliance criteria for protozoa are met, with the exception of the Stanway-Halcombe Rural Water Supply

Level of Service Statement	Performance Measure	Baseline	Target for Years 1-3	Target for Years 4-10
You can expect the water reticulation network to be well maintained	We will measure this by the percentage of real water loss from the Council's networked reticulation system. This will be calculated for each water supply scheme using Method 1 - Water Balance as per the Department of Internal Affairs guidelines.	Water loss in Feilding and villages was calculated at 22% in 2021-2022. Water loss at Himatangi Beach could not be measured accurately due to seasonal fluctuation in population. This figure does not include rural water schemes.	• Estimated real water loss < 35% per water supply scheme	• Estimated real water loss < 35% per water supply scheme
You can expect faults to be responded to and resolved in a timely manner	We will measure this by measuring the median response time for callouts to a fault or unplanned interruption to Council's networked reticulation system: • Attendance time for urgent callouts from the time the Council receives notification to the time that service personnel reach the site • Resolution time of urgent callouts from the time that Council receives notification to the time that service personnel confirm that the water supply has been reinstated • Attendance time for non-urgent callouts from the time that Council receives notification to the time that service personnel reach the site • Resolution time for non-urgent callouts from the time that Council receives notification to the time that service personnel confirm resolution of the fault or interruption Note: An "urgent" call-out is one in which there is a complete loss of water.	There were 15 urgent requests in 2021-2022, with a median response time of 0.73 hours and a median resolution time of 1.52 hours In 2021-2022 there were 308 non-urgent requests, with a median response time of 24 hours and a median resolution time of 24 hours.	• Median attendance time within 2 hours (urgent) • Median resolution time within 9 hours (urgent) • Median attendance time within 5 working days (non-urgent) • Median resolution time within a further 5 working days (non-urgent)	• Median attendance time within 2 hours (urgent) • Median resolution time within 9 hours (urgent) • Median attendance time within 5 working days (non-urgent) • Median resolution time within a further 5 working days (non-urgent)

Level of Service Statement	Performance Measure	Baseline	Target for Years 1-3	Target for Years 4-10
You can expect satisfaction with our service	We will measure this by monitoring the total number of complaints received by Council about any of the following: • Drinking water clarity • Drinking water taste • Drinking water odour • Drinking water pressure or flow • Continuity of supply • The local authority's response to any of these issues Expressed per 1,000 connections to the Council's networked reticulation system.	In 2021-2022 there were 57 complaints received. This represents 7.35 complaints per 1,000 connections	• <20 complaints received in total per 1,000 connections per annum	• <20 complaints received in total per 1,000 connections per annum
You can expect us to manage the demand for domestic water supply	We will measure this by the average consumption of drinking water per day, per resident within Council's authority area.	In 2021-2022 water consumption for Feilding (excluding water used by industrial and commercial customers) was 142 litres per person per day. This figure does not include rural schemes.	• 300 litres/person/day for domestic supply only	• 300 litres/person/day for domestic supply only

Wastewater Activity Statement Summary				
What We Do	Collect, treat, and dispose of wastewater including domestic, commercial, and industrial waste.			
How We Do It	• Maintaining reticulated wastewater systems in Feilding, Awahuri, Cheltenham, Halcombe, Kimbolton, Rongotea, Sanson and Himatangi Beach; • Ensuring that we meet resource consent requirements for the discharge of treated wastewater to either land or water from the District's Wastewater Treatment Plants; and • Ensuring that we meet statutory obligations under the Local Government Act 2002, Health Act 1956, and Resource Management Act 1991.			
Contribution to Community Outcomes	The activity of providing of a safe and effective wastewater service is one of Council's core functions. Council seeks to protect the environment, minimise risk and health hazards from sewerage overflows by having a service that is cost-effective, compliant, and operated in a socially and culturally acceptable manner. Council understands that there are many community and economic benefits attached to the provision of adequate systems for the safe collection, treatment, and disposal of wastewater. The Wastewater Activity will focus on the following to achieve the Community Outcomes: • Work to renew and/or upgrade assets so that they meet desired level of service; Carry out works required to cater for projected future growth, development, and demand; and • Monitor quantity and quality of treated wastewater discharges in each scheme.			
Level of Service Statement	**Performance Measure**	**Baseline**	**Target for Years 1-3**	**Target for Years 4-10**
You can expect us to adequately manage our wastewater system	We will measure this by monitoring the number of dry weather sewerage overflows from Council's sewerage system, expressed per 1000 sewerage connections.	In 2021-2022 there were 2 dry weather overflows in Feilding. From a district wide perspective this represents 0.24 overflows per 1,000 connections across the district.	< 6 dry weather overflows per 1000 connections	< 6 dry weather overflows per 1000 connections

Level of Service Statement	Performance Measure	Baseline	Target for Years 1-3	Target for Years 4-10
You can expect discharge compliance	We will measure this by compliance with the Council's resource consents for discharge from its sewerage system measured by the number of: • Abatement notices • Infringement notices • Enforcement orders; and • Convictions received by Council in relation to those resource consents	Zero abatement notices received. 1 infringement notice was received for the Kimbolton Wastewater Treatment Plant for exceeding effluent limits. No convictions or enforcement orders were received by Council in 2021-2022.	• < 2 abatement notices advising breaches of resource consent conditions per scheme • Zero infringement notices, enforcement order or convictions advising breaches of resource consent conditions per scheme	• < 2 abatement notices advising breaches of resource consent conditions per scheme • Zero infringement notices, enforcement order or convictions advising breaches of resource consent conditions per scheme
You can expect faults to be responded to and resolved in a timely manner	We will measure this by measuring the following median response times where Council attends to a sewerage overflow resulting from a blockage or other fault in Council's sewerage system: • Attendance time: From time the Council receives notification to the time that service personnel reach the site • Resolution time: From the time Council receive notification to the time service	In 2021-2022 there were 19 overflows, as follows: • 2 dry weather overflows in Feilding • 17 wet weather overflows in Feilding For urgent requests, the median attendance time was 0.72 hours. The median resolution time was 2.43 hours. There were 85 non urgent call out in 2021-2022 relating to system blockages or faults. The median attendance time was 1.53 hours. The median resolution time was 4.18 hours.	• Median attendance time within 2 hours (urgent) • Median resolution time within 5 hours (urgent) • Median attendance time within 5 working days (non-urgent) • Median resolution time within a further 5 working days (non-urgent)	• Median attendance time within 2 hours (urgent) • Median resolution time within 5 hours (urgent) • Median attendance time within 5 working days (non-urgent) • Median resolution time within a further 5 working days (non-urgent)

	personnel confirm resolution of the blockage or other fault.			
You can expect satisfaction with our service	We will measure this by monitoring the total number of complaints received by Council about the following: • Sewage odour • Sewerage system faults • Sewerage system blockages • Council's response to issues with its sewerage system Expressed per 1000 connections to the council sewerage system.	In 2021-2022 there were 56 complaints received. This represents 6.75 complaints per 1,000 connections (the overall target for all categories is less than 20 per 1,000 connections) • 7 relating to odour • 13 relating to system faults • 35 relating to blockages • 1 relating to the level of response	< 20 complaints in total per 1,000 connections per annum	< 20 complaints in total per 1,000 connections per annum

Stormwater Activity Statement Summary	
What We Do	Provide a network of stormwater systems throughout the District.
How We Do It	• Maintaining reticulated stormwater systems in Feilding, Rongotea and Sanson including inlets, pipes, open drains, and outlets to receiving environments • Maintaining stormwater assets in Himatangi Beach, Halcombe, Tangimoana and Cheltenham • Carrying out ongoing maintenance to the four rural drainage schemes: Bainesse, Maire, Makowhai and Oroua Downs.
Contribution to Community Outcomes	The activity of providing an effective stormwater service and drainage infrastructure is one of Council's core functions. Council seeks to protect the environment, people's property, and roadways from flooding during heavy rain events by having a service that is sustainably managed, compliant, adequately deals with flows, is cost effective and operated in a social and culturally acceptable manner. Council understands that there are many community and economic benefits attached to the provision of adequate systems for the safe collection and disposal of stormwater. Effective stormwater and drainage infrastructure ensures that the built environment – roadways, culverts and other infrastructure either associated with flood protection or in danger of flooding – is safe, reliable, and attractive. The Stormwater Activity will focus on the following activities to achieve the Community Outcomes: • Work to renew or upgrade assets so that flows are diverted away from buildings at risk of flooding; • Upgrades are carried out when and where needed to reduce the risk of stormwater flows capturing contaminants and to meet resource consent and compliance standards; • Carry out works required to cater for projected growth, development, and demand so as not to increase the effects of stormwater flows on downstream properties; • Work with private property owners and developers to deal with stormwater onsite; and • Work with Horizons to help manage stormwater risks within the Manawatū District.

Level of Service Statement	Performance Measure	Baseline	Target for Years 1-3	Target for Years 4-10
You can expect stormwater system adequacy	We will measure this by the number of flooding events that occur in the district. For each flooding event, the number of habitable	There were 40 flooding of habitable floors reported in 2021-2022.	<10 habitable floors per 1000 properties affected by flooding per flood event that occurred in the District	<10 habitable floors per 1000 properties affected by flooding per flood event that occurred in the District

	floors affected, expressed per 1000 stormwater connections			
You can expect us to comply with discharge consent conditions	We will measure this by compliance with Council's resource consents for discharge from its stormwater system measured by the number of: • Abatement notices • Infringement notices • Enforcement orders; and • Convictions received by Council in relation to resource consents	No abatement notices, infringement notices, enforcement orders or convictions were received by the Council in 2021-2022.	• < 2 abatement notices advising breaches of resource consent conditions per scheme • 0 infringement notices, enforcement orders or convictions advising breaches of resource consent conditions per scheme	• < 2 abatement notices advising breaches of resource consent conditions per scheme • 0 infringement notices, enforcement orders or convictions advising breaches of resource consent conditions per scheme
You can expect us to respond to flooding events in a timely manner	We will measure this by measuring the median repose times to attend or contact the resident in a flooding event, measured from the time that Council receives notification to the time that service personnel reach the site or contact the resident.	4 flooding events occurred during 2021-2022, the median response time was 7.35 hours.	Median response time within 2 hours.	Median response time within 2 hours.
You can expect satisfaction with our service	We will measure this by the number of complaints received by Council about the performance of its stormwater system (expressed per 1,000 properties connected to Council's stormwater system)	Council received 279 complaints relating to the stormwater service in 2021-2022. This represents 33.33 complaints per 1,000 property connections.	< 20 complaints per 1,000 property connections per annum	< 20 complaints per 1,000 property connections per annum

4.0 FUTURE DEMAND

4.0 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, changing technologies, economic factors, land use change, changing legislative requirements, changing regional and district planning requirements and climate change.

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.1 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.1.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Increasing demand for services over time generates a requirement for the development of additional infrastructure. Therefore, expenditure programmes need to be planned to fund the capital works and associated on-going operational expenditure. Alternatively, it may be possible to manage demand within the existing system capacity.

Where a reduced demand is forecast it may be appropriate to renew assets with a lesser capacity, operational expenses may decrease, or an asset may become surplus to requirements.

Opportunities identified to date for demand management are shown in Table 4.1. Further opportunities will be developed in future revisions of this AMP.

In the absence of Statistics New Zealand subnational projections, the population growth projections for the Manawatū District were commissioned from Infometrics.

Table 4.1 - Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
District Growth	That the population of the Manawatū District will increase from 33,900 residents in 2023 to 48,191 in 2054 (Infometrics High scenario).	The population of the Manawatū District is expected to grow by an average of 1.0% per annum from 2020 to 2030, Over the period from 2030-2054 the population growth rate is forecasted to be 0.7%	Increased demand on services.	Council to identify further growth areas within the District to accommodate the population within the existing Residential area of Feilding or on the growth edges of Feilding. Monitor and review demand especially any planned significant developments on the outskirts of Feilding and village areas
Climate Change and anticipated increase rainfall and sea level rise.	High-intensity rainfall events and under capacity stormwater network	Climate change will impact the performance of existing infrastructure in managing service levels associated with high intensity rainfall events.	Reducing the level of service provided by the existing infrastructure due to more frequent extreme weather and damage to the assets.	Identify high-risk areas and develop plans to renew or upgrade and integrate climate resilience into infrastructure.
Legislative requirements	Changing national legislation for planning requirements	Central Government has signalled changes in legislation.	Reviews of legislation including the introduction of several new National Policy Statements and National Environmental Standards under the RMA.	Requirement to comply with legislation may have a substantial cost implication on stakeholders
Changes in Land use	Over this time there has been a total of 632 building consents granted, 592 of which were for detached dwellings and 7 for multi-unit dwellings. A total of 363 subdivision consents have been granted, creating a total of 1,084 new lots.	There has been a concentration of development within Feilding, and strong growth within the Villages of Halcombe, Hiwinui, Rongotea, Sanson and Himatangi Beach.	Increased demand on services.	Identifying areas that require services to be either renewed or upgraded

4.2 Demand Forecasts - Assumptions

In compiling this AMP, it was necessary to make assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are as follows:

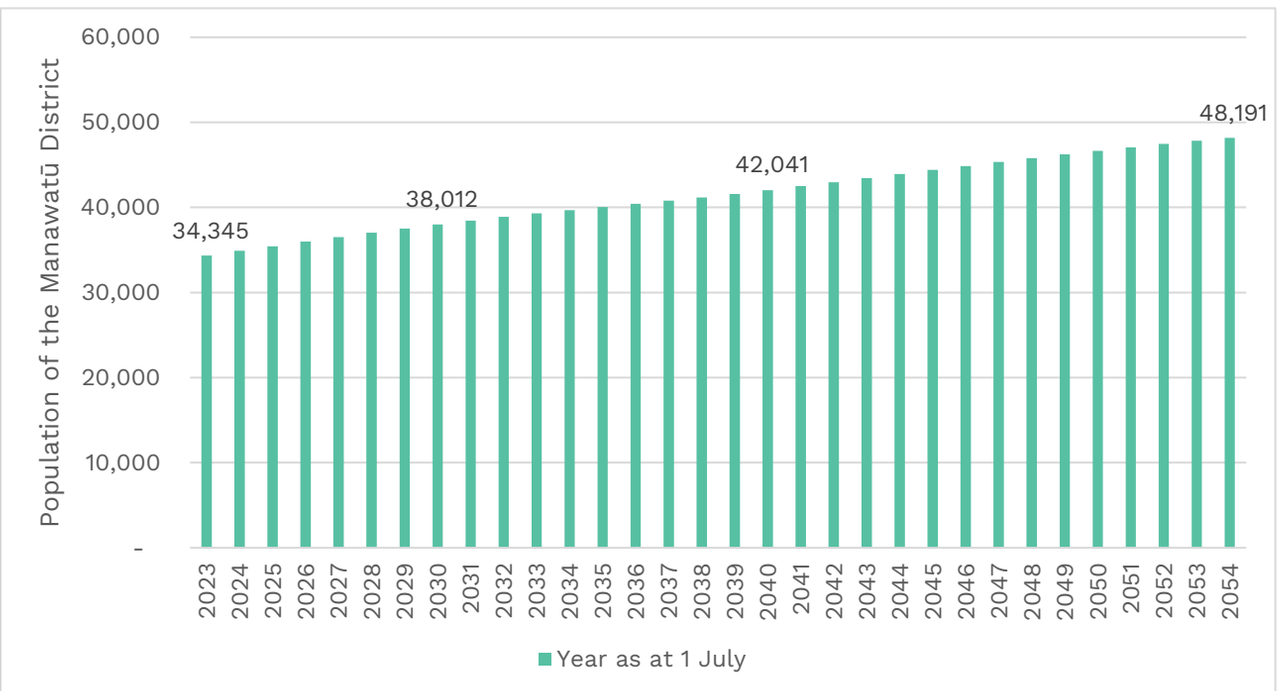
Population growth

In the absence of Statistics New Zealand subnational projections, the population growth projections for the Manawatū District were commissioned from Infometrics.

Assumption: That the population of the Manawatū District will increase from 34,345 residents in 2023 to 48,191 in 2054 as illustrated in Figure 4.1 below (Infometrics High Scenario).

The population of the Manawatū District is expected to grow by an average of 1.5% per annum from 2023 to 2030, by 1.06% per annum over the period from 2030 to 2040 and by 1.04% over the period from 2040 to 2054 (Infometrics High Scenario).

Figure 4.1 - Population growth 2023 to 2054 (based on Infometrics High Scenario, May 2023)



Alternative 1	That the resident population of the Manawatū District will increase more rapidly than forecast in Figure 4.1.
Impact	**Moderate** Significantly higher population growth may impact negatively on levels of service as roading, and community infrastructure has insufficient capacity to meet demand. Council may need to rezone land sooner than planned to accommodate increased demand for new houses. Ministries and agencies rely on population growth assumptions contained in Council's Long-term Plan for their own planning. If Council underestimates the rate of population growth, this will impact on planning for services and facilities, such as in the areas of health, education, social housing, community facilities, infrastructure, business etc. If service and facility provision does not match community needs, this can detrimentally affect community wellbeing.
Likelihood	**Possible**

	Population forecasts are based on the "High" growth scenario published by Infometrics (May 2023). The population projections follow a traditional cohort component projection method. The projection approach starts with employment forecasts, driven by a combination of historical trends and assumptions for future forecasts, including carbon pricing and further adoption of automation technology. Employment forecasts inform part of projected net migration. Net migration forecasts also consider housing capacity and commuting patterns, particularly between Palmerston North and Feilding. According to Infometrics forecasts, Palmerston North is expected to take a greater share of the combined area's population growth in the future as large greenfield residential areas become available, and as changes around highly productive land may adversely affect Manawatū's residential land supply. The introduction of emission pricing in 2025 is expected to have the effect of reducing agricultural intensity and encouraging forestry, resulting in a reduction in on-farm and off-farm (e.g., dairy and meat processing) employment. International net migration is forecast to recover slowly due to highly competitive global markets for migrants. Positive migration to provincial and rural areas is expected to persist, with post-pandemic trends of working remotely or from home bolstering regional migration. The long-term ageing of the population means that the gap between births and deaths is closing. By 2050, deaths are projected to outnumber births and the population will be entirely reliant on net migration to avoid any decline. The above factors are reflected in the population growth scenario adopted as a basis for the 2024-34 Long-Term Plan. Council adopted Infometrics "High" scenario as the most likely scenario for the following reasons: • The medium 10-year growth scenario is likely to understate growth due to the overly conservative baseline assumptions within Infometrics employment and population forecasts. For example, the assumption of 30,000 net international migration per annum has already been proven to be understated, with a provisional net migration gain of 52,000 in the year ended February 2023.[1] • MDC considers that the Infometrics projections overstate the impacts of the NPS-HPL on lifestyle development in the Manawatū. MDC will still be enabling rural lifestyle development on class 4 – 7 lands. • Insufficient consideration has been given to existing residential growth capacity within Precinct 4 to the north of Feilding, within the deferred residential zones 1 – 3 and around the rural villages. • Council is in the process of opening up large areas of industrial land for development within the Kawakawa Industrial Park (Precinct 5), facilitated by the construction of the Turners Road Extension. MDC is expecting high employment growth as new industrial businesses become established in this area. The current employment forecasts that inform the population forecasts do reflect this expected growth.
Overall risk	**Guarded (6)**
Reasons & Financial Effect of Uncertainty	Significantly higher population growth than expected will put pressure on existing roading and community infrastructure and services. Council may need to find ways of raising the extra revenue required or consider lower levels of service. Higher than expected population growth will also mean that Council receives more development contributions. This will help to partially offset higher expenditure on servicing this growth.
Mitigating Factors (If applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process. Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy.

	Through the above processes, actual growth will be assessed against projected growth enabling review of the need for, and timing of capital expenditure over the Long-term Plan period. Growth projects may be brought forward due to excess demand for new roading or community infrastructure.
Source	Infometrics (Brunsdon, 2023) Manawatū-Whanganui Region population projections, High scenario. International Migration: February 2023 (Statistics New Zealand, 2023).

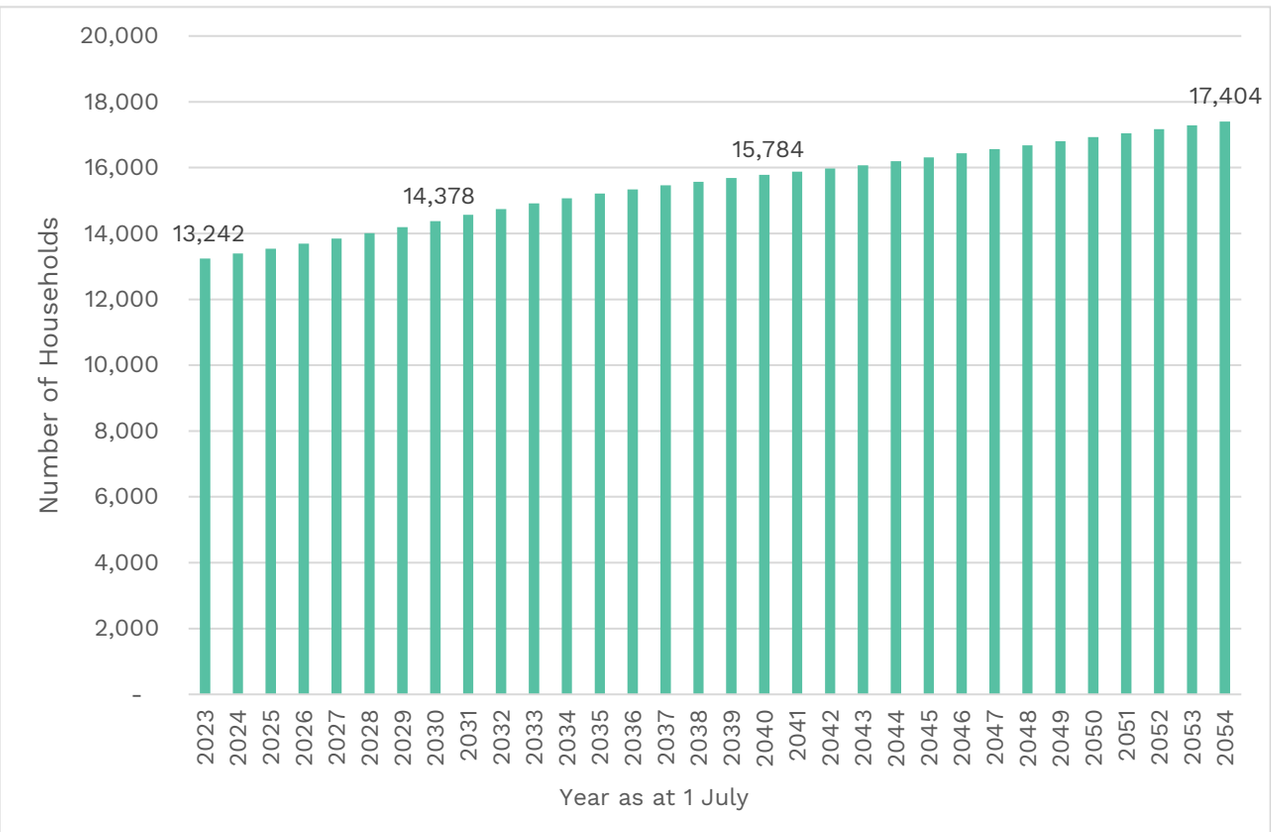
Alternative 2	**That the resident population of the Manawatū District will increase more slowly than forecast in Figure 4.1.**
Impact	**Minor** Significantly lower population growth rates than forecast will mean that Council's revenue from rates and development contributions will be less than forecast. This may mean that planned investment in new roading and community infrastructure is deferred. Decreased rates revenue may also increase costs for current ratepayers to fund capital projects and service delivery. If Council significantly overestimates population growth rates, this may result in an over-supply of community facilities and services provided by Ministries and external agencies that rely on this data, including in the areas of health, education, social housing, community facilities, infrastructure and business.
Likelihood	**Possible** Population forecasts are based on the high growth scenario published by Infometrics in January 2023 and updated in May 2023. These forecasts have anticipated a slow recovery to international net migration as global competition for migrants increases and slowing population growth through natural increase. While the projections are based on the best information currently available, uncertainty is elevated due to uncertainty about the effect of emissions pricing for agriculture on employment in this sector and the effect of national direction such as the NPS-HPL on residential land supply and development trends between Feilding and Palmerston North. The additional layer of uncertainty imposed by national direction and climate change policy has increased the likelihood of lower than forecast population growth from unlikely to possible.
Overall risk	**Guarded (3)**
Reasons & Financial Effects of Uncertainty	Lower rates of population growth could increase the costs per property of delivering agreed levels of service. Lower than expected population growth will also mean that Council collects less revenue through development contributions. This will require Council to revisit the need for, and timing of capital projects to support growth.
Mitigating Factors (if applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process. Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, actual growth will be assessed against projected growth enabling review of the need for, and timing of capital expenditure over the Long-term Plan period. Growth projects may be delayed due to surplus capacity in the existing roading network.
Source	Infometrics (Brunsdon, May 2023) Manawatū-Whanganui Region population projections, High Scenario.

Household growth

Household growth projections for the Manawatū District were commissioned from Infometrics. The forecasts are based on average household size based on projected changes in sex and age structure of the population and trends in household formation. The actual number of households will depend on availability of dwellings.

Assumption: That the number of households in the Manawatū District will increase from 13,242 in 2023 to 17,404 in 2054 as illustrated in Figure 4.2 below. The number of households in the district are forecast to increase by 0.76% per annum over the first three years of the Long-term Plan, increasing to 1.08% growth per annum between 1 July 2028 (year 4) and 1 July 2034 (year 10) and an average of 0.76% growth per annum over the period from 1 July 2035 (year 11) to 2054 (year 30).

Figure 4.2 - Household growth in the Manawatū District



Alternative 1	That the number of households in the Manawatū District in 2054 will be significantly more than forecast in Figure 4.2
Impact	**Moderate** Demand for land and new roading and community infrastructure will be greater than anticipated. This may mean that additional land needs to be rezoned and new infrastructure provided to meet this demand.
Likelihood	**Possible** Household forecasts are based on the high growth scenario published by Infometrics (January 2023). These forecasts are based on average household size based on projected changes in sex and age structure of the population and trends in household formation. The Infometrics population forecasts follow a traditional cohort component projection method. The projection approach starts with employment forecasts, driven by a combination of historical trends and assumptions for future forecasts, including carbon pricing and further

	adoption of automation technology. International net migration is expected to recover slowly to around 30,000 over the long-term. The pattern or net migration into provincial and rural areas is expected to persist, with post-pandemic trends of working remotely expected to bolster regional migration. Net migration forecasts also consider housing capacity and commuting patterns, particularly between Palmerston North and Feilding. Palmerston North is expected to take a greater share of the combined area's population growth in the future as large greenfield residential areas become available, and as changes around highly productive land may adversely affect Manawatū's residential land supply. The above factors are reflected in the household growth scenario adopted as a basis for the 2024-34 Long-term Year Plan. While the projections are based on the best information available, uncertainty is currently elevated due to national direction and climate change policy that influences land use development.
Overall Risk	**Guarded (6)**
Reasons & Financial Effect of Uncertainty	Household growth generally results in new subdivisions and therefore an increase in the rating base. This spreads the costs of providing Council services, providing no major roading or community infrastructure investment is required. We may not have sufficient land available in the range of locations needed to provide the level of choice demanded by the market.
Mitigating Factors (if applicable)	Council regularly reviews development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process Major projects and significant changes to levels of service are assessed against affordability annually through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, actual growth in households will be assessed against projected growth enabling review of the need for, and timing of capital expenditure over the Long-term Plan period. Planned rezoning and investment in growth infrastructure may be brought forward to reflect greater than anticipated demand.

Alternative 2	**That the number of households in the Manawatū District in 2054 will be significantly less than forecast than in Figure 4.2**
Impact	**Minor** Demand for land and infrastructure will be less than anticipated. This may mean that additional land has been rezoned and new roading and community infrastructure provided well in advance of demand, which could impact on Council's ability to fund levels of service.
Likelihood	**Possible** Household forecasts are based on the high growth scenario published by Infometrics (January. 2023). These forecasts are based on average household size based on projected changes in sex and age structure of the population and trends in household formation. The population forecasts that form the basis of the household projections have been developed using a traditional cohort component projection method. The projection approach starts with employment forecasts, driven by a combination of historical trends and assumptions for future forecasts, including carbon pricing and further adoption of automation technology. The model also considers anticipated changes in net international migration, housing capacity and commuting patterns and the impact of national direction and emissions pricing on employment and development patterns. While the projections are based on the best information available, uncertainty is currently elevated due to national direction and climate change policy that influences land use development.

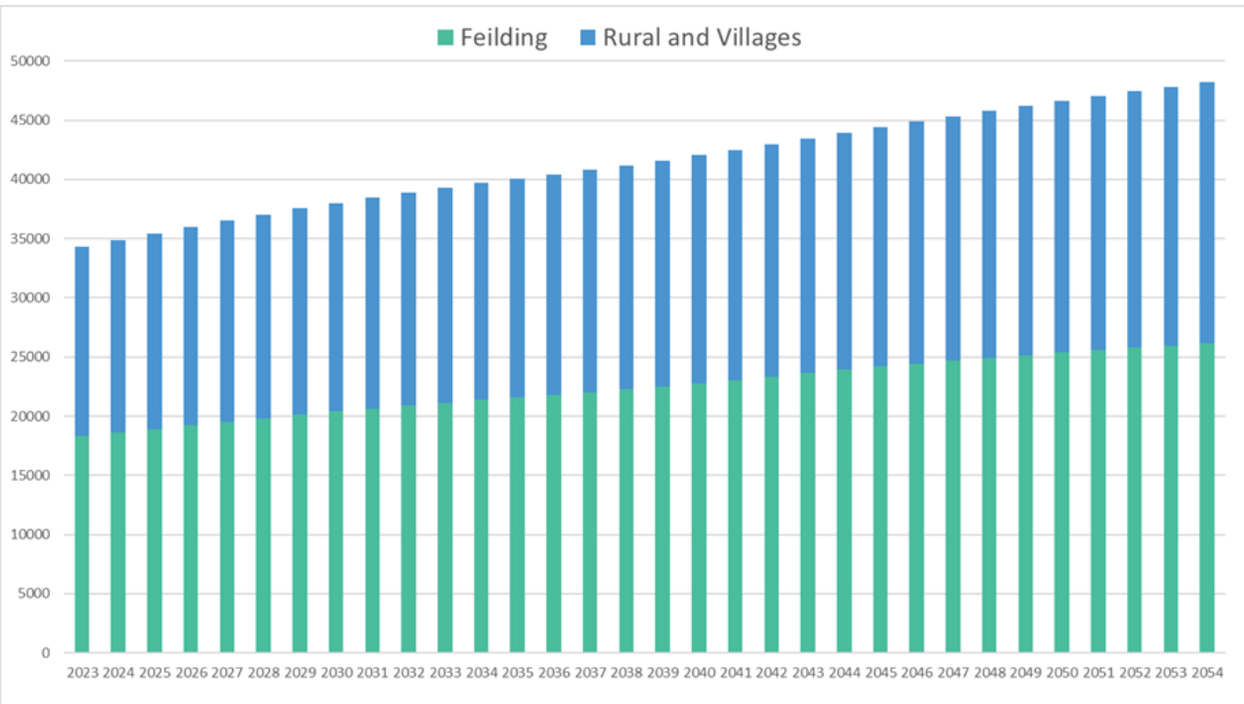
	If population growth is significantly less than forecast or if the average household occupancy rate is higher than forecast, the number of new households is likely to be lower than forecast.
Overall Risk	**Guarded (3)**
Reasons & Financial Effect of Uncertainty	If the number of households in the urban areas do not increase as forecast, then there will be limited increases in the rating base. This will mean that the costs of providing the planned levels of service for roading and community infrastructure will be higher per household and there will be more rating pressure on existing households and businesses.
Mitigating Factors (if applicable)	Council regularly reviews development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process Major projects and significant changes to levels of service are assessed against affordability annually through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, actual growth in households will be assessed against projected growth enabling review of the need for, and timing of capital expenditure over the Long-term Plan period. Reduced development pressure will mean that available land is not exhausted as quickly. Planned rezoning and new infrastructure may be delayed until such time as demand warrants the expenditure.

Distribution of the District's Population

In the absence of Statistic New Zealand subnational projections, the population growth projections for the Manawatū District were commissioned from Infometrics.

Assumption: That the proportion of the Manawatū District's population living in Feilding will remain constant at 53.4% from July 2024 to July 2026 (years 1 to 3), will increase to 53.6% by July 2028 (start of year 5), to 53.8% by July 2033 (start of year 10), to 54.1% by July 2038 (start of year 15), to 54.5% by July 2043 (start of year 20) and decline slightly to 54.3% of the total population by July 2053 (start of year 30), as illustrated in Figure 4.3 below.

Figure 4.3 - Distribution growth between Feilding, rural and village areas between 2023 and 2054 (based on population growth derived from the Infometrics High Scenario, May 2023).



If a higher proportion of new residential development occurs in Feilding relative to rural and village areas, we can expect to see an increase in the proportion of residents living in Feilding. Similarly, if people and families relocate from rural or village areas into Feilding, this will result in the proportion of residents living in Feilding increasing. However, if rural or village areas attract a greater proportion of new residential development relative to Feilding, residents relocate from Feilding into rural and village areas, we would expect the proportion of the population living in Feilding to decline.

Assumptions around the distribution of population growth between Feilding, rural and village areas over time is useful to inform Council's growth strategy, the Financial and Infrastructure Strategies and planning for new growth works through Council's Activity and Asset Management Plans.

It is not possible for Council to separate village areas from rural areas when considering the distribution of residents in the Manawatū District as the smallest units of population that Statistics New Zealand produce (SA2's) include a mix of rural and village areas.

The following narrative guided Council's assumptions around the distribution of growth in Feilding relative to rural and village areas over the next 30 years. In assigning proportions, Council considered the current ratio, calculated using Statistics New Zealand statistical areas and the number of new residents forecast for the District as a whole, as forecast by Infometrics ("High" scenario, May 2023).

Narrative for the distribution of future residential growth

Over the next 2 to 3 years, we expect to see a continuation of the current patterns of growth – being rural-residential development on existing vacant lots within the rural area and residential growth within Precinct 4 (Council's growth area to the North of Feilding). The current Feilding vs urban and villages split is expected to persist over this time. Further, the private plan change request that provides for between 140 to 180 new lots to be created in Rongotea has now been approved.

Between years 3 and 10 we are anticipating a reduction in the proportion of population (and household) growth in rural areas of the District as the number of new rural-residential lots created slows due to restrictions on new rural subdivisions imposed by the NPS-HPL, and as the availability of vacant rural lots reduces. Over this period, we expect an increase in the rate of growth in (and surrounding) rural villages on non-highly productive land, as they attract a greater share of new residents looking for lifestyle development and infrastructure improvements make development in these areas more attractive. Residential development in Rongotea is expected to increase the village share of growth and development, partially offsetting a reduction in rural subdivisions. Overall, it is anticipated that the population of Feilding as a proportion of the total Districts population will increase between years 3 and 10, particularly as Horizons completes its flood protection works for Feilding and existing stormwater flooding issues are resolved.

Between years 10 and 15 we expect Feilding to take an even greater proportion of overall growth in the District. However, more of this development will occur by way of infill development as greenfield development in Precinct 4 reaches capacity. The proportion of new growth in rural areas is expected to decline due to reduced availability of vacant rural lots, and the proportion of new growth in rural villages and surrounding areas on non-highly productive land is expected to increase slightly as they provide a lifestyle alternative to Feilding.

During years 10 to 15 Council will need to start rezoning and planning for new infrastructure investment in Feilding growth areas identified through the new growth strategy to ensure there is sufficient availability of small-lot residential land available to support future demand. Council will also need to plan for new infrastructural investment in the villages, to provide a large-lot residential alternative to new Feilding growth areas.

Between years 10 and 15 Council will need to rezone and service new greenfield land, identified through the new growth strategy, adjacent to the existing Feilding urban area. Due to development constraints, this may necessitate development on the eastern side of the Ōroua River. Council anticipates growth of large-lot residential development within the rural villages, providing a more affordable lifestyle alternative to Feilding. We are expecting the ratio of new residential development in Feilding and the villages to plateau between years 15 to 20. A combination of factors, including agricultural emissions pricing, fuel prices, the NPS-HPL, and land use controls will mean that an even smaller proportion of overall growth is in rural areas. New housing will be concentrated in Feilding (with infill development prioritised over new greenfield development), and in those rural villages with existing capacity for new development.

Between years 20 and 30 greater intensification (infill) in Feilding and small-lot greenfield development in growth areas will continue to provide for demand. If Council has not completed its growth strategy or rezoned and serviced sufficient land to meet demand within Feilding, village growth as a proportion of total growth will increase relative to Feilding. Rural lifestyle development on non-highly productive land will continue to make up a small proportion of new residential growth in the District.

Alternative 1	**That the proportion of the residents living in Feilding relative to rural and village areas of the Manawatū District will increase more rapidly than forecast in Figure 4.3**
Impact	**Moderate** Significantly higher population growth in Feilding relative to rural and village areas may impact negatively on levels of service as roading, three waters and community infrastructure has insufficient capacity to meet demand. Council may need to rezone land in or adjacent to Feilding sooner than planned to accommodate increased demand for new houses. Planned investment in villages may be delayed focusing resources on supporting growth in Feilding. The Manawatū District may attract a smaller proportion of population growth as new residents locate outside of the District.

	Greater infill development could lead to capacity issues if the rate of infill exceeds upgrades to existing infrastructure.
Likelihood	**Possible** Forecasts in relation to the distribution of population growth are based on the population growth forecast by Infometrics ("High" growth scenario, May 2023) and the current distribution of residents as forecast by Statistics New Zealand (SA2s). This forecast is strongly linked to the population growth forecast. If overall population growth is slower than anticipated, it will take longer for Precinct 4 to reach capacity, and longer for the supply of vacant lots in rural and village areas to be exhausted. This will influence the patterns of growth, with the current distribution between Feilding, rural and village areas likely persisting for longer than forecast. As outlined in the *"narrative for the future distribution of population growth"* above, the distribution of population growth is dependent on many factors, including the availability of vacant land, the provision of lead infrastructure to facilitate growth, the attractiveness of certain areas (including the quality of services provided, affordability and lifestyle factors) and external influences including the restrictions imposed on rural subdivision through the NPS-HPL. The distribution of growth in later years will be strongly influenced by the decisions that Council makes around future growth planning, rezoning and provision of new infrastructure. For example, if Council decides to direct growth investment to Feilding and new growth areas adjacent to Feilding rather than investing in village areas, it is likely that the overall proportion of new growth in Feilding will increase at a faster rate than forecast.
Overall Risk	**Guarded (6)**
Reasons & Financial Effect of Uncertainty	Significantly higher population growth in Feilding relative to other areas will put increased pressure on existing roading and community infrastructure and services. Council may need to increase the level of investment in new roading and community facilities within Feilding or consider lower levels of service. Council may need to rezone and service additional land in and around Feilding sooner than forecast to meet increased demand.
Mitigating Factors (if applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD) • Annual Estimated Resident Population (ERP) from Statistics New Zealand • The Long-term Plan process. Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, trends in the distribution of population growth will be assessed and used to direct investment in growth-related works. Growth projects in Feilding may be prioritised over planned growth works in rural and village areas.
Source	Infometrics (Brunsdon, 2023) Manawatū-Whanganui Region population projections, High scenario. Statistics New Zealand.

Alternative 2	**That the proportion of the residents living in Feilding relative to rural and village areas of the Manawatū District will decrease or increase at a slower rate than forecast in Figure 4.3**
Impact	**Minor** Significantly lower population growth rates in Feilding may mean that planned investment in new roading and community infrastructure in Feilding is deferred. Council may need to plan for new growth works, or to redirect planned investment from Feilding to other areas to support demand for new development in rural and village areas earlier than forecast.
Likelihood	**Possible**

	Forecasts in relation to the distribution of population growth are based on the population growth forecast by Infometrics ("High" growth scenario, May 2023) and the current distribution of residents as forecast by Statistics New Zealand (SA2s). As outlined in the *"Narrative for the future distribution of population growth"* above, the distribution of population growth is dependent on many factors, including the availability of vacant land, the provision of lead infrastructure to facilitate growth, the attractiveness of certain areas (including the quality of services provided, affordability and lifestyle factors) and external influences including the restrictions imposed on rural subdivision through the NPS-HPL. The distribution of growth in later years will be strongly influenced by the decisions that Council makes around future growth planning, rezoning and provision of new infrastructure. For example, if Council decides to direct growth investment to support rural lifestyle subdivision on non-highly productive land, or large-lot residential development in village areas, it is likely that the overall proportion of new residents living in Feilding will decrease or increase at a slower rate than forecast.
Overall Risk	**Guarded (3)**
Reasons & Financial Effect of Uncertainty	Significantly higher population growth in rural or village areas relative to Feilding will put increased pressure on the rural roading network and existing services in villages. Council may need to redirect planned growth works from Feilding to rural or village areas to support this growth or consider lower levels of service. Council may need to rezone and service additional land in and around village areas sooner than forecast to meet increased demand.
Mitigating Factors (if applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD) • Annual Estimated Resident Population (ERP) from Statistics New Zealand • The Long-term Plan process. Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, trends in the distribution of population growth will be assessed and used to direct investment in growth-related works. Growth projects in rural or village areas may be prioritised over planned growth works in Feilding.
Source	Infometrics (Brunsdon, 2023) Manawatū-Whanganui Region population projections, High scenario. Statistics New Zealand.

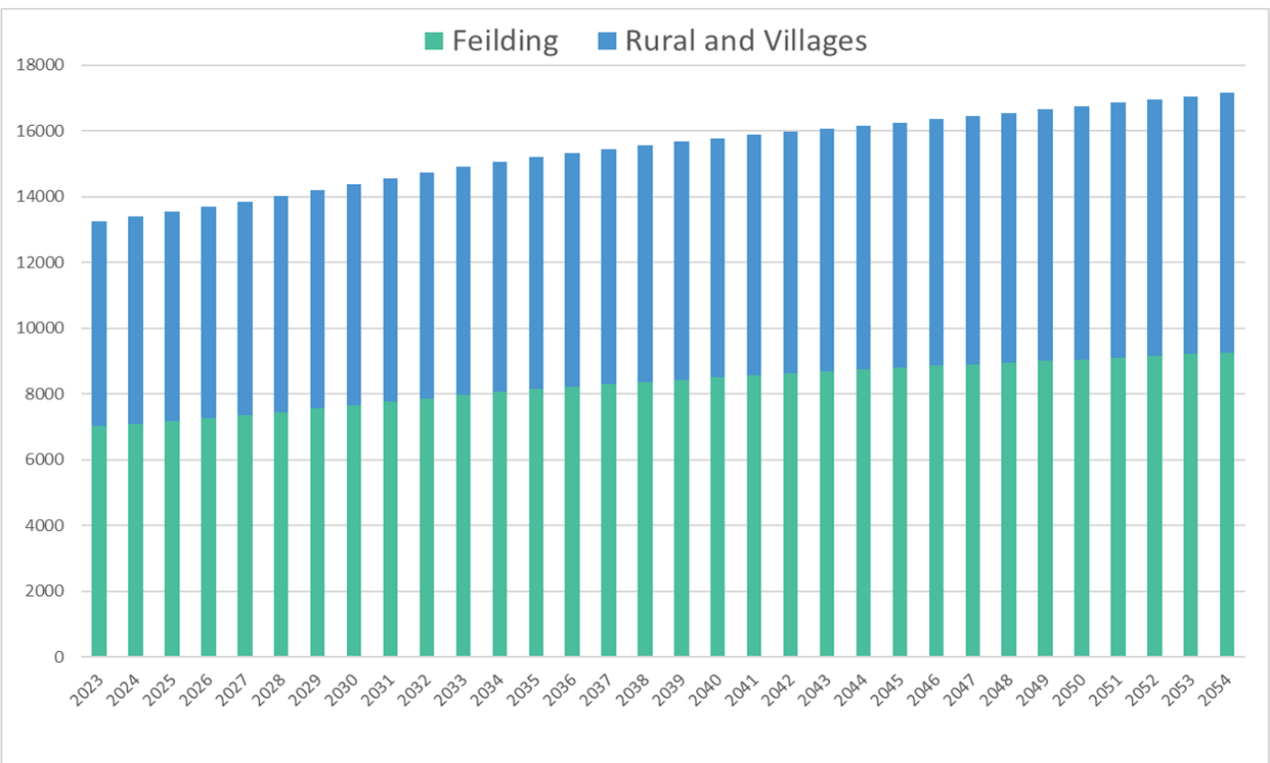
Distribution of Household Growth

Household growth projections for the Manawatū District were commissioned from Infometrics. The forecast growth in new households is based on average household size, based on projected changes on sex and age structure of the population, and trends in household formation. In forecasting the number of new households by location (Feilding vs rural and village areas), Council divided the forecast proportion of the population living in Feilding by the average household size.

Assumption: That the number of households located in Feilding will increase from 7,106 (as at July 2024) to 7,265 by July 2026 (start of year 3), to 7,458 by July 2028 (start of year 5), to 7,974 by July 2033 (start of year 10), to 8,369 by July 2038 (start of year 15), to 8,696 by July 2043 (start of year 20), and to 9,215 by July 2053 (start of year 30), as illustrated in Figure 4.4 below.

The number of households in rural and village areas will increase from 6,284 (as at July 2024) to 6,425 by July 2026 (start of year 3), to 6,554 by July 2028 (start of year 5), to 6,942 by July 2033 (start of year 10), to 7,205 by July 2038 (start of year 15), to 7,372 by July 2043 (start of year 20), and to 9215 by July 2053 (start of year 30), as illustrated in Figure 4.4 below.

Figure 4.4 - Forecast distribution of households in the Manawatū District



Alternative 1	That there will be considerably more households in Feilding and fewer households in rural and village areas than forecast in Figure 4.4
Impact	**Moderate** Demand for land and new roading and community infrastructure will be greater than anticipated. Significantly higher household growth rates in Feilding relative to rural and village areas may impact negatively on levels of service as roading and community infrastructure has insufficient capacity to meet demand. Council may need to rezone land in or adjacent to Feilding sooner than planned to accommodate increased demand for new houses. Planned investment in villages may be delayed due to focusing resources on supporting growth in Feilding.

Likelihood	Household growth forecasts are based on the population growth forecasts by Infometrics ("High" growth scenario, May 2023) and the current distribution of residents as forecast by Statistics New Zealand (SA2s). This forecast is strongly linked to the assumptions on population growth and the distribution of this population growth between Feilding, rural and village areas. If overall population growth is slower than anticipated, it will take longer for precinct 4 to reach capacity, and longer for the supply of vacant lots in rural and village areas to be exhausted. This will influence the patterns of household growth, with the current proportions of new households constructed in Feilding relative to village and rural areas persisting longer than forecast. As outlined in the *"narrative for the future distribution of population growth"* above, the distribution of population and household growth is dependent on many factors, including the availability of vacant land, the provision of lead infrastructure to facilitate growth, the attractiveness of certain areas (including the quality of services provided, affordability and lifestyle factors) and external influences including the restrictions imposed on rural subdivision through the NPS-HPL. The distribution of household growth in later years will be strongly influenced by the decisions that Council makes around future growth planning, rezoning and provision of new infrastructure. For example, if Council decides to direct growth investment to Feilding and new growth areas adjacent to Feilding rather than investing in village areas, it is likely that Feilding would attract a greater proportion of new household growth. By concentrating investment to support growth in Feilding, we would expect the overall number of households in Feilding to be more than forecast and the number of households in rural and village areas to be proportionally less than forecast.
Overall Risk	**Guarded (6)**
Reasons & Financial Effect of Uncertainty	Significantly higher household growth in Feilding relative to other areas will put increased pressure on existing roading and community infrastructure and services. Council may need to increase the level of investment in new roading and community facilities within Feilding or consider lower levels of service. Higher than expected growth in households in Feilding will reduce the rating burden for those rates that are targeted to Feilding. Lower than expected growth in the number of households in rural and village areas will increase the costs to provide planned levels of service for those services that are targeted to rural and village areas. Council may need to rezone and service additional land in and around Feilding sooner than forecast to meet increased demand.
Mitigating Factors (if applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, trends in the distribution of population growth will be assessed and used to direct investment in growth-related works. Growth projects in Feilding may be prioritised over planned growth in rural and village areas.
Source	Infometrics (Brunsdon, 2023) Manawatū-Whanganui Region population projections, High scenario. Statistics New Zealand

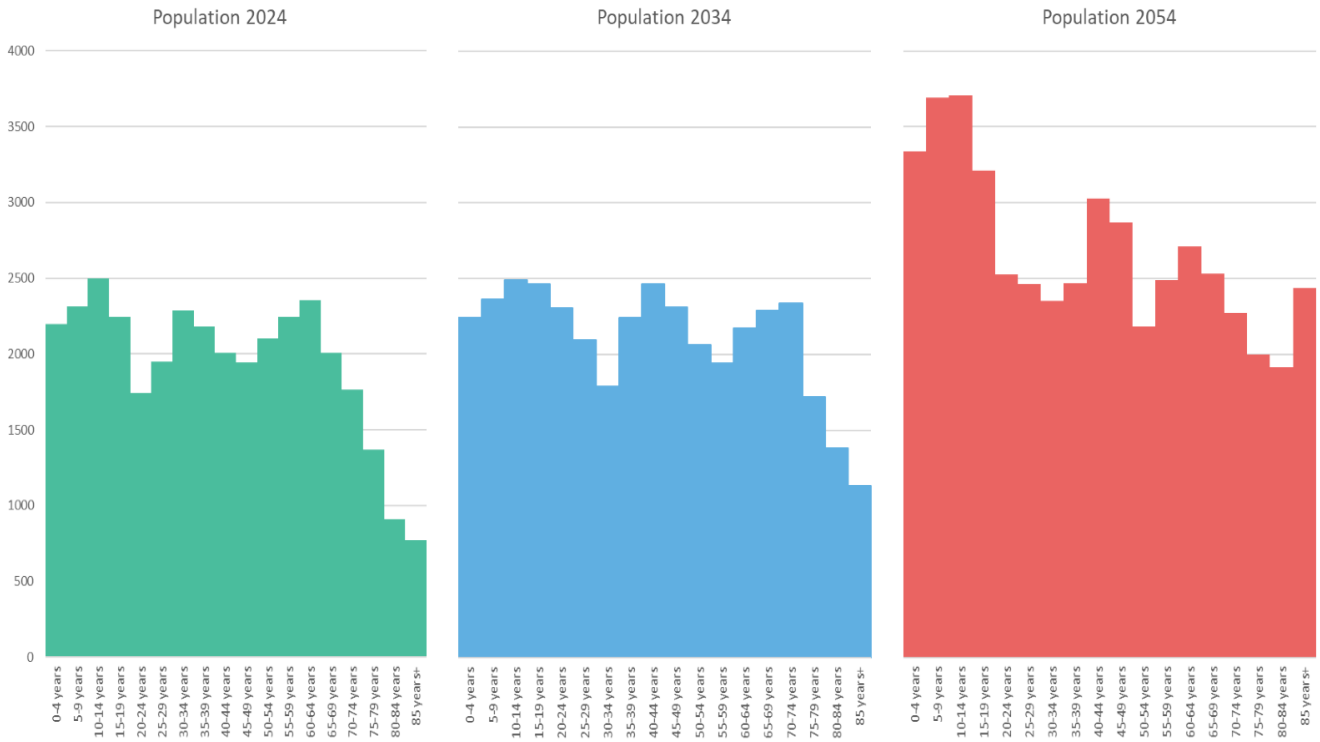
Alternative 2	**That there will be considerably fewer households in Feilding and more households in rural and village areas than forecast in Figure 4.4**
Impact	**Minor** Significantly lower household growth rates in Feilding than forecast may mean that planned investment in new roading and community infrastructure in Feilding is deferred.

	Council may need to plan for new infrastructure to support household growth in rural and village areas earlier than forecast, or to redirect planned investment from Feilding to these areas.
Likelihood	**Possible** Household growth forecasts are based on the population growth forecast by Infometrics ("High" growth scenario, May 2023), and the current distribution of residents as forecast by Statistics New Zealand (SA2s). As outlined in the *"narrative for the future distribution of population growth"* above, the distribution of population and household growth is dependent on many factors, including the availability of vacant land, the provision of lead infrastructure to facilitate growth, the attractiveness of certain areas (including the quality of services provided, affordability and lifestyle factors) and external influences including the restrictions imposed on rural subdivision through the NPS-HPL. This forecast is strongly linked to the assumptions on population growth and the distribution of this population growth between Feilding, rural and village areas. If overall population growth is slower than anticipated, it will take longer for precinct 4 to reach capacity, and longer for the supply of vacant lots in rural and village areas to be exhausted. This will influence the patterns of household growth, with the current proportions of new households constructed in Feilding relative to village and rural areas persisting longer than forecast. If the impact of the NPS-HPL or rural subdivision and development is less than anticipated, the number of new households constructed in rural areas (on non-highly productive land) will be greater than forecast. The number of new households located in Feilding vs rural and village areas in later years will be strongly influenced by the decisions that Council makes around future growth planning, rezoning and provision of new infrastructure. For example, if Council decides to direct investment to support new rural lifestyle subdivision on non-highly productive land, or large-lot residential development in village areas, it is likely that these areas will attract a greater share of new household growth, and therefore the number of households in Feilding would increase at a slower rate than forecast.
Overall Risk	**Guarded (3)**
Reasons & Financial Effect of Uncertainty	If the number of households in Feilding do not increase as quickly as forecast, there will be limited increases in the rating base. This will mean that the costs of providing the planned levels of service for those services that are targeted to Feilding will be higher per household. If the number of households in rural and village areas increases more quickly than forecast, the rating base for these areas will increase relative to Feilding, reducing the rating burden for those rates that are targeted to rural and village areas.
Mitigating Factors (if applicable)	Council regularly reviews population growth and development trends through the following processes: • Monitoring and reporting under the National Policy Statement – Urban Development (NPS-UD); • Annual Estimated Resident Population (ERP) from Statistics New Zealand; • The Long-term Plan process Major projects and significant changes to levels of service are assessed against affordability through the Annual Plan Process. In addition, subdivision and building consent data is used for annual updates to the schedule of works contained within Council's Development Contributions Policy. Through the above processes, actual growth in households will be assessed against projected growth enabling review of the need for, and timing of capital expenditure over the Long-term Plan period. Reduced development pressure will mean that available land is not exhausted as quickly. Planned rezoning and new infrastructure may be delayed until such time as demand warrants the expenditure.

Demographic change

Assumption: That the demographics of the Manawatū District will follow the Infometrics demographic projections (high growth scenario, May 2023) over the period 2024 to 2054 as illustrated in Figure 4.5 below.

Figure 4.5 - Demographic change for the Manawatū District



Alternative	That the demographics of the Manawatū District will differ significantly from the Infometrics high age group projections (May 2023) to 2054 as described in Figure 4.5
Impact	**Minor** The forecast demographics of the Manawatū District Community is relevant when considering the types of services, projects and activities delivered by Council. If the actual demographics differ significantly from forecasts, this will influence demand for Council facilities, including parks, reserves and sports facilities. Greater than forecast growth in the young adult to middle age brackets could place pressure on housing availability and the delivery of services to support young families. Greater than forecasted shifts towards older demographics could change the mix of services demanded from Council, and the ability to pay for those services.
Likelihood	**Possible** The forecasts from Infometrics show increases in the total population across all age brackets between 2024 and 2054. There is no significant population growth forecasted between 2024 and 2034 with some age groups seeing a decline. However, there are significant increases forecasted for the 80-84 year and 85+ year age groups, with both increasing by over 100%, between 2024 and 2054. The proportion of residents aged 80+ is forecast to increase from 5% of the total population in 2024 to 9% of the total population in 2054. With people living longer, and easing fertility and birth rates, the proportion of residents aged over 65 years is expected to continue to increase to 2054. The forecast increase in older residents is relatively certain and is supported by current trends. Employment in the wider region would likely have a long-term impact on the mid age population. With the employment growth in industries such as construction currently

	occurring this may lead to an increase in the age groups of 20-29 years. The Manawatū District Council is also expected to pick up a greater share of both international and internal migration due to the ability to work remotely (Bell, 2023). In the short term between 2024 and 2034 there is a decline forecasted in the working age population (the 30-34, 50-54, 55-59 and the 60-64 age groups). These short term demographic shifts are likely due to various factors, including the expectation that Palmerston North will attract a greater share of population growth as large greenfield areas become available; and the departure of people from the 25-29 and 45-49 year age groups. This could also indicate that while we are seeing employment growth in the District, this growth is not going to be even across all skill levels and types of roles. The total population is forecasted to increase by 38% between 2024 and 2054, with only 8% growth forecasted between 2024 and 2034. The age groups of 40-44 and 45-49 years are projected to increase in 2054 by 51% and 48% which is higher than average increase across all age groups of 38%. Based on birthrate assumptions, a growth in the middle age groups is likely to lead to an increase in the school age groups. All age groups from 0-19 years are forecast to increase above the 38% total district increase with the 5-9 year olds increasing by 60% between 2024 and 2054. Given the number of factors that contribute to population demographics, it is not possible for Council to have a high level of certainty around these forecasts. As the demographic forecasts from Infometrics take into consideration anticipated growth based on known regional projects, the likelihood that these forecasts prove false is considered “possible.”
Overall Risk	**Guarded (3)**
Reasons & Financial Effect of Uncertainty	Uncertainty in the future demographic characteristics of the Manawatū District impacts on the ability to plan for the needs of future communities and the priority that Council places on certain projects and services in its future planning.
Mitigating Factors (if applicable)	Council reviews demographic trends based on census data every five years and estimated resident population data from Statistics NZ every 12 months. Council’s overall strategic direction with respect to changes in population demographics is reviewed every three years as part of each Long-term Plan process. Data provided to Council will help with ongoing monitoring of community wellbeing. In addition, major projects and significant changes to levels of service are assessed against affordability annually through the Annual Plan process. The above processes will enable Council to respond to changes in the demographic characteristics of the district over time, including the prioritisation of projects and service delivery to meet the needs of the community.

Assumption: On the basis of current and anticipated Government Legislation and policy instruments, current land uses will change to a moderate extent over the next 3 years. More significant changes in land use are anticipated between years 4 and 10 of the Long-term Plan, as described below.

- Note: Significant changes in land use are anticipated over the life of Council's Infrastructure Strategy as current legislative reform is implemented. However, given the high level of uncertainty associated with these reforms, this forecasting assumption focusses on the life of the Long-term Plan. Ongoing monitoring of land-use changes will ensure that these trends are recognised and responded to in Council's Annual and Long-term Planning. As Council develops its Environmental Strategy this may drive further land use change as priorities around emissions reduction are identified and implemented.
- The types of land use changes anticipated over the life of this Long-term Plan include:
- Some diversification of land use from agricultural activities towards forestry and other low emission land uses and innovation and technology to reduce on farm emissions from livestock farming to meet our obligations under the Zero Carbon Act, the Paris Agreement and for carbon credits.
- A significant reduction in rural subdivisions on highly productive land as a result of the requirements of the National Policy Statement for Highly Productive Land, which seek to avoid this type of development. Some new lifestyle development will continue as existing vacant titles are developed.
- A reduction in new rural subdivisions will result in greater demand for subdivisions within urban areas (including both infill and Greenfield subdivision within identified growth areas), and adjacent to rural villages on non-highly productive land. Some increase in rural development will occur as a lifestyle alternative.
- Constraints on expansion of agricultural activities due to more stringent discharge requirements in the One Plan as the requirements of the National Policy Statement – Freshwater Management are implemented.
- Highly versatile land will be retained for productive uses, including land conversions for food production on suitable land, as growers relocate from neighbouring Districts including the Horowhenua due to inability to meet the discharge requirements of the One Plan.
- The Kawakawa/Turners Road Industrial Park is fully developed, requiring additional industrial land to be identified in, or around, Feilding.
- Changing transport patterns influence land use decisions as a consequence of the rural ring road, Te Ahu a Turanga (the Manawatū Gorge replacement road) and Te Utanganui (Central New Zealand distribution hub).
- Areas of native vegetation will be protected from development and areas of land within urban areas will be set aside for revegetation to meet the requirements of the National Policy Statement for Indigenous Biodiversity and the Regional Biodiversity Strategy.
- Changes in housing preferences include the shifting rental/ownership split, different forms of housing in recognition of rising housing costs, and more mixed-use activity. For example, future amendments to the District Plan will facilitate more mixed-use development in the Feilding Town Centre.

Alternative 1	That current land use in the Manawatū District will change more rapidly, or in different locations or ways than anticipated.
Impact	**Moderate** Rapid changes in land use could result in unanticipated demand for new (or upgrades to) services and the need to undertake additional road maintenance or improvement works, particularly if housing development increases in the villages, and/or there is additional housing/industrial development around Feilding. New activities can generate additional employment that can increase the rate of population and household growth and stimulate economic activity. If land use change occurs more rapidly than forecast this could alter council's priorities for infrastructural investment. Should Council not have enough serviced urban land available, this will necessitate changes to the timing around new infrastructure investment to support growth. If Council is unable to meet demand for new serviced land, this could result in development shifting outside of the District, or the ad-hoc provision of infrastructure, leading to poorer outcomes.
Likelihood	**Unlikely for years 1 – 3, Possible for years 4 – 10** The interplay between new legislation, National Policy Statements under the Resource Management Act 1991 and Horizons One Plan means that land use change in the moderate to long term is inevitable, but there is a high level of uncertainty about where, how and when that land use change will take place. The level of uncertainty increases over time as new targets are set in legislation and through National Policy Statements and plans. Certain changes in land use are less desirable for our District, such as shifts from agricultural activities for food production to forestry or carbon farming. At present, Council has limited ability to control forestry expansion through the District Plan. However, Central Government has suggested statutory change to enable controls through the District Plan or other mechanisms to slow or restrict land use change to certain types or locations. The rate of land uptake for residential and industrial development is dependent on several factors including population growth, household growth, migration patterns, inward investment and economic prosperity. The supply of land in neighbouring cities and districts also has a significant influence – particularly Palmerston North. Significant changes in any of these factors will affect when additional land needs to be rezoned. While Council is aware of current land use trends, including rural land being used more intensively than it was in the past, these trends may slow or reverse as new requirements are introduced to the District Plan and to the One Plan to ensure compliance with legislative requirements. Council is also aware that large areas of forestry in the District will reach harvestable age between 2021-2030.
Overall Risk	**Guarded for years 1 – 10 (4-6)**
Reasons & Financial Effect of Uncertainty	Significant changes in land use can impact Council's District Planning and the delivery of infrastructure. For example, if growth occurs in areas where Council currently has no plans for infrastructure investment. Given the process and investment associated with installing lead infrastructure, there are risks with opening up multiple areas at one time. There is uncertainty regarding the response to highly productive land protections and future housing development trends. A large shift of development to rural villages will see the need for additional infrastructure programmes or lowering levels of service. Council's infrastructure programme is currently focused on development in Precinct 4 (housing) and Precinct 5 (industrial). Any change in the rate of development will have a significant financial impact. Significant changes in land use may also impact on Council's investment and priorities for three waters infrastructural investment, prior to transfer to the new Water Services Entity.
Mitigating Factors (if applicable)	The new growth strategy is scheduled to be completed in Year 1 of this Long-term Plan. This strategy will help to guide future rezoning and give effect to new legislative requirements, including the National Policy Statements for Highly Productive Land, Urban Development and Indigenous Biodiversity. Council monitors land use change through the monitoring and reporting requirements of the NPS-UD. This includes monitoring of land use, subdivision and building consents. The zoning

	of land and the activities permitted on land is managed through the District Plan Review, informed by expert advice and investigations. New infrastructure and roading needed to support residential and industrial growth are controlled through Structure Plans that have been incorporated into the District Plan through the Plan Change process and will be funded by development contributions. The cost for new services to support new residential, industrial or commercial areas will be partially funded by development contributions. Rural land is largely self-serviced so changes in land use will not alter demand for reticulated networks but may impact on roading. Council has already anticipated increased pressure on the rural roading network, with increasing numbers of heavy vehicles to service forestry harvest. As a result, additional funding has been set aside for road maintenance and renewals in the Roading Activity Management Plan. Council monitors, reports and submits on new legislative requirements as they are notified by Government. Additional budget has been included within the Long-term Plan in anticipation of the new responsibilities and resource implications of new legislative requirements.

Alternative 2	**That current land use in the Manawatū District will persist or that land use change will occur at a much slower rate or in fewer locations or ways than forecast.**
Impact	**Minor** Less significant land use change will mean less demand for new services and road maintenance, or improvement works. Continuation of current land uses, or a more gradual change in land use than anticipated will mean greater stability in economic and social performance due to our capability and capacity being maintained within established industries. Slower land use change in our District compared to neighbouring territorial authorities may mean that our District is slower in responding to central government direction and new legislative requirements. It may also mean that the District has not capitalised on regional projects and developments or new and emerging industries and may therefore be comparatively disadvantaged.
Likelihood	**Possible for years 1 – 3, Unlikely for years 4 to 10** As a lot of the forecast land use change is a result of new legislative requirements, it is unlikely that there would be little or no land use change over the life of this Long-term Plan and the 30-year period of the Infrastructure Strategy. However, given the number of different factors that influence land use change, it is possible that the rate of change, and the location and nature of change is different and less significant than forecast. For land use change to occur at a slower rate than forecast, a significant shift in central government policy direction would be required.
Overall Risk	**Guarded (3) for Years 1 – 3, Low (2) for years 4 to 10**
Reasons & Financial Effect of Uncertainty	Slower or less significant land use change will mean less demand on the roading network and other Council-owned infrastructure. Investment to facilitate or manage land use change may need to be deferred.
Mitigating Factors (if applicable)	Council monitors land use change through monitoring and reporting requirements under the NPS-UD. This includes monitoring of land use, subdivision and building consents. The zoning of land and the activities permitted on land is managed through the District Plan Review, informed by expert advice and investigations. Funding within the Long-term Plan that is intended to service land use change and new legislative requirements can be reduced through subsequent Annual Plans and Long-term Plans if it is not required.

Climate change

Assumption: *That climate change will continue to exacerbate the intensity and frequency of extreme weather and climate events in the Manawatū District as predicted by NIWA based on the IPCC Fifth Assessment Report. Some of the climatic changes anticipated are:*

- *Temperature increases up to 1.5°C across the region by mid-century, and 3.5°C toward the end the century.*
- *Annual average precipitation will increase by up to 15% in the north of the Region and decrease by up to 20% in the southeast of the region. Increased precipitation could lead to increased frequency and intensity of inland flooding events in the district*
- *Change in number of annual hot days across the region up to 10 days by mid-century and up to 50 hot days toward the end of the century*
- *Fewer wet days up to minus 15 in the northeast of the region by mid-century and up to minus 30 toward the end of the century.*
- *The annual mean relative humidity change decreases up to 2.5 percent in both scenarios by mid-century and towards the end of the century.*

New Zealand-focused regional modelling and quantitative analyses based on the Coupled Model Intercomparison Project Phase 6 (CMIP6) models are yet to be performed. There is no regional or localised modelling projections available for this long-term plan based on the more recent IPCC 6th Assessment Report (AR6). NIWA advises that future regional projections based on CMIP6 would not differ significantly from previous regional projections. MFE also advised that until the CMIP6-based regional downscaling is completed, the regional climate model projections reported in Ministry for the Environment (2018) can continue to be used with reasonable confidence. The assumptions below capture both MfE's recommended minimum and mid-range emission scenario SSP/RCP 4.5 and a high emissions scenario of RCP/SSP 8.5 for hazard assessment. It is crucial to note that that the climate modelling used for these scenarios are based on 2011 data that are provided by the Ministry of Environment.

There is a risk that the dated data used for the modelling is inconsistent with recent adverse climactic events. A recent OECD report suggests taking a precautionary approach to climate change mitigation, particularly noting that some climate tipping points have already been crossed. It is prudent to approach our mitigation and adaptation planning using the upper-range emissions scenario.

The impacts of climate change are discussed in more detail in the Climate Change section of the Long-term Plan.

Alternative 1	**That climatic changes in the Manawatū District, including the intensity and frequency of extreme weather events, are more extreme than predicted by NIWA based on the IPCC Fifth Assessment Report.**
Impact	**Major** Under the assumption that natural disasters will occur with increasing frequency, significant climatic events would affect demand for Council services and could adversely affect infrastructure. Incidences of extreme weather events such as increased rainfall leading to inland flooding are a concern for council. Risks include more frequent or costlier storm damage from flooding, and that stormwater standards will not be met. This would increase costs from repair works, and possibly lead to demand for increased levels of service. Other risks include impacts on the economic and social wellbeing of our communities through more frequent or severe flooding, drought and/or heavy snowfall. Such events also cost Council in terms of infrastructure repair, Civil Defence and emergency management response to events, and community assistance (such as provision of a supplementary water supply).

Likelihood	**Unlikely** Ministry for the Environment and NIWA reports have predicted change in weather patterns including wind, rainfall, drought and snowfall. There is more certainty that weather patterns in the short term will have predictable impacts due to climate change that can be provided for through our Asset Management Plans and Activity Management Plans. There is less certainty about impacts of weather patterns in the long term as predictions are less reliable.
Overall Risk	**Moderate (8)**
Reasons & Financial Effect of Uncertainty	Significant impacts are not expected to be frequent in the next few decades. Council has a policy of holding depreciation renewal reserves. Insurance claims from damage associated with extreme weather are likely to rise as the incidence of these events increases in the future. This is expected to increase the costs of insurance cover. Operating programmes to mitigate impacts of climate change such as reducing peak demand for water and leak detection in wastewater are already underway and are built into the operating budgets of Council.
Mitigating Factors (if applicable)	Financial impacts will be mitigated by ensuring adequate insurance cover and appropriate maintenance is undertaken as a preventative measure. Major flood protection works (stopbanks) have been completed for the lower Manawatū, the Kiwitea Stream and Ōroua_River flood control scheme. These stopbanks are designed to withstand the current 1% Annual Exceedance Probability (AEP) flood event, 1 in 100-year flood. Technology is always changing, and it is likely that new and cost-effective plant and materials will be available to meet some of the challenges in the future. Council has also established a Resilience Fund, which puts aside funding in anticipation of climate change impacts. It is expected that a portion of the fund can be used to mitigate some adverse impacts of climate change. As part of its environmental strategic priorities MDC is committed to improving our infrastructure assets resilience to climate change impacts.
Source	NIWA based on the IPCC Fifth Assessment Report.

Alternative 2	**That climatic changes in the Manawatū District, including the intensity and frequency of extreme weather events, are less extreme than predicted by NIWA based on the IPCC Fifth Assessment Report.**
Impact	**Minor** If climatic changes are less extreme than predicted, expenditure on infrastructure repairs and maintenance will be lower.
Likelihood	**Unlikely** Ministry for the Environment reports have predicted change in weather patterns including wind, rainfall, drought and snowfall. There is more certainty that weather patterns will have predictable impacts due to climate change in the short term that can be provided for through our Asset Management Plans and Activity Management Plans. There is less certainty about impacts of weather patterns in the long term as prediction are less reliable.
Overall Risk	**Low (2)**
Reasons & Financial Effect of Uncertainty	Fewer significant weather events such as flooding, droughts or heavy snowfall, means that expenditure on infrastructure repairs and maintenance, and insurance claims from weather events will be lower. Renewal reserves will need to be retained to address climate change impacts in the longer term.
Mitigating Factors (if applicable)	Financial impacts will be mitigated by ensuring adequate insurance cover and appropriate maintenance is undertaken as a preventative measure.
Source	NIWA based on the IPCC Fifth Assessment Report.

Useful life of assets

Assumption: That assets will deliver the required level of service over their documented useful life.

Alternative	That older assets will fail earlier than their documented useful life
Impact	**Major** Critical asset failure would impact on the reliability of the service we provide to businesses, schools, rest homes, medical providers and the wider public. Insufficient investment for renewal of critical network and plant assets will increase the likely hood of these assets to fail. This failure also increases the chance of environmental risk, public health risk, reputational harm, and breaches of resource consent resulting in abatement notices and prosecution. Significant asset failure would require additional funding which would impact on debt levels and rates increases.
Likelihood	**Possible** Various factors can affect when an asset is replaced, including an extraordinary event such as extreme weather, increased demand from growth, or an increased rate of deterioration from material failure. Council has very few water supply assets dating from before 1950 and large numbers of sewer and stormwater reticulation with a default installation date of 1931. This network profile skews the current age-based renewals programme. The gaps in the accuracy of asset information impact on the timing of renewals and the reliability of service delivery. This is relevant to assessing the risk and timing of an optimised renewals programme. To address this, CCTV inspections have been conducted in older parts of the network. Council is in the process of preparing a procurement going out to tender for the CCTV and condition assessment programme. The budget for this has been added to the 2024-34 Long-term Plan along with the renewals programme to follow based on the information collated from the condition inspection information. The targeted renewals programme will reduce the likelihood of asset failure across the network.
Overall Risk	**Moderate** There is little evidence to indicate that large scale asset failures are imminent. The inspection programme will further define this risk to increase certainty and inform risk management practices.
Reasons & Financial Effect of Uncertainty	A renewals programme based on a combination of age, material type and criticality has been included in the Long-term Plan. Funding is included in the Long-term Plan for a CCTV and condition assessment programme. Information from these condition assessments will inform the renewals programme, minimising the risk of bulk failure of assets.
Mitigating Factors (if applicable)	Council has recognised where there are gaps in asset information and has implemented a maintenance and monitoring programme to inform a targeted renewals programme.
Source	IPWEA. (2015). International Infrastructure Management Manual. *Institute of Public Works Engineering Australasia.* International Edition.

Sources of funds for future replacement of significant assets

Assumption: That the depreciation reserves will adequately fund the renewals of assets over the 10 year period and the longer term (to 2054).

Alternative	That the depreciation reserves are insufficient to fund the renewals of assets over the 10 year period and the longer term
Impact	**Severe** There would be a shortfall in funds available to replace assets. This would require Council to either reduce service levels, increase debt and/or increase rates.
Likelihood	**Possible** The depreciation reserves have been depleted by the level of replacement of assets over the past three years. This recent investment in renewals is expected to reduce the demand on the fund over the early years of the Long-term Plan, however, it is possible that there will be insufficient depreciation reserves available to fund all renewal projects.
Overall Risk	**High (24)**
Reasons & Financial Effect of Uncertainty	Since 2009 Council has built depreciation reserves to fund the long term renewals of assets, however many assets were nearing the end of their life at that time so recent renewals have depleted the fund.
Mitigating Factors (if applicable)	Council will be carefully considering the demand on depreciation reserves within the Long-term budget planning process. If required, Council can access borrowings to supplement depreciation reserves at levels forecast within the Long-term Plan.

Alternative 1	That the DWSNZv2022 and associated national regulations and the delivery model remain unchanged.
Impact	**Minor** All drinking water supplies will be required to comply with the DWSNZ, DWQAR, and aesthetic values. Water supply activities will continue as planned in the Long Term Plan with no impact on budgets or programmes.
Likelihood	**Unlikely** The expectation is that there will be some form of legislation change to the delivery model as set by Central Government. However, it is uncertain that this will eventuate, and if so, how extensive these changes will be.
Overall Risk	**Low (2)** We are currently well placed to deliver under the current criteria and performance standards.
Reasons & Financial Effect of Uncertainty	Planned upgrades, renewals and maintenance works will continue to set out in the Infrastructure Strategy, the Long-term Plan, and the Forward Works Programme in the Three Waters Asset Management Plan.
Mitigating Factors (if applicable)	Following completion of planned upgrades to water treatment plans, all of Councils reticulated drinking water networks will comply with the current drinking water regulatory requirements.

Alternative 2	That the changes to the drinking water regulations and the delivery model are greater than anticipated.
Impact	**Moderate** All of Councils water supplies are already chlorinated and all surface water takes have UV treatment. Hence, we are well placed under the current regulatory requirements and can easily implement minor additional changes to achieve compliance if required. The changes to date have consisted of a more rigorous testing regime to monitor total coliforms and enumeration testing for E. coli. The changes to the water delivery model, however, could be significant as these could fundamentally change how and who is responsible for supplying drinking water. Councils' debt profile places council at financial risk if significant changes are needed, and costs incurred to comply with standard and requirements for drinking water supplies.
Likelihood	**Possible** The department of Internal Affairs Report on the Havelock North Drinking Water Inquiry: Stage 2, recommended significant changes to be made to the regulatory system for water supplies and to the Drinking Water Standards for New Zealand. The new regulations have since been released with relatively minor increases in compliance criteria.
Overall Risk	**Guarded**
Reasons & Financial Effect of Uncertainty	The delivery model is beyond the control of the TA's. Through its lobby group LGNZ, Council has recommended the status quo with respect to the delivery model. This may be amended however to a delivery model. This may be amended however to a more regional or national approach delivery model. It is likely that changes will result in additional capital and operational expenses for Council.
Mitigating Factors (if applicable)	Council is already well placed as all urban drinking water supplies are chlorinated. In addition, all surface water takes for water supply networks are UV treated. These mitigation measures were already in place when increased compliance requirements came into force in 2022.

Infrastructural Capacity

Assumption: That the infrastructure projects outlined in the Infrastructure Strategy are necessary to ensure that there is sufficient capacity to meet forecast population, household, and business growth.

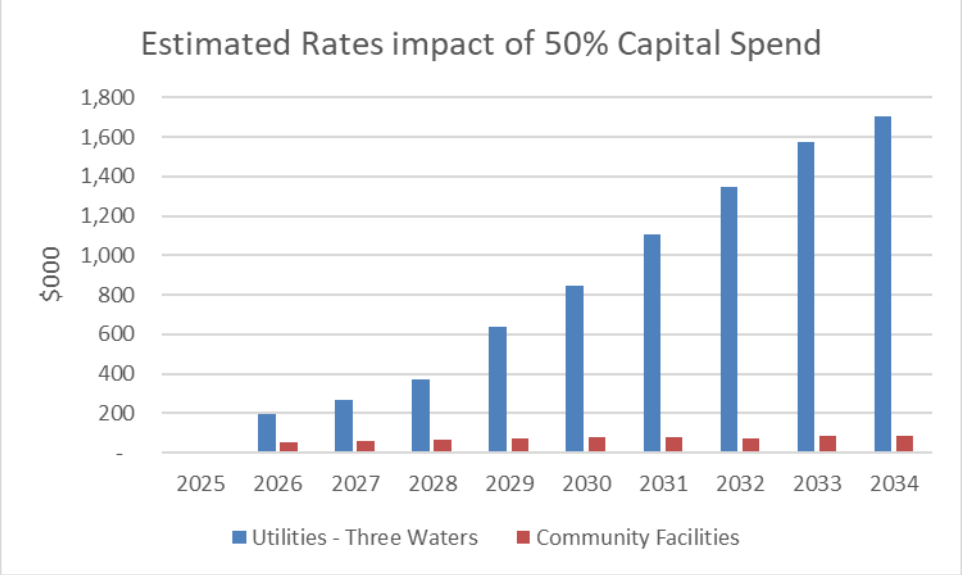
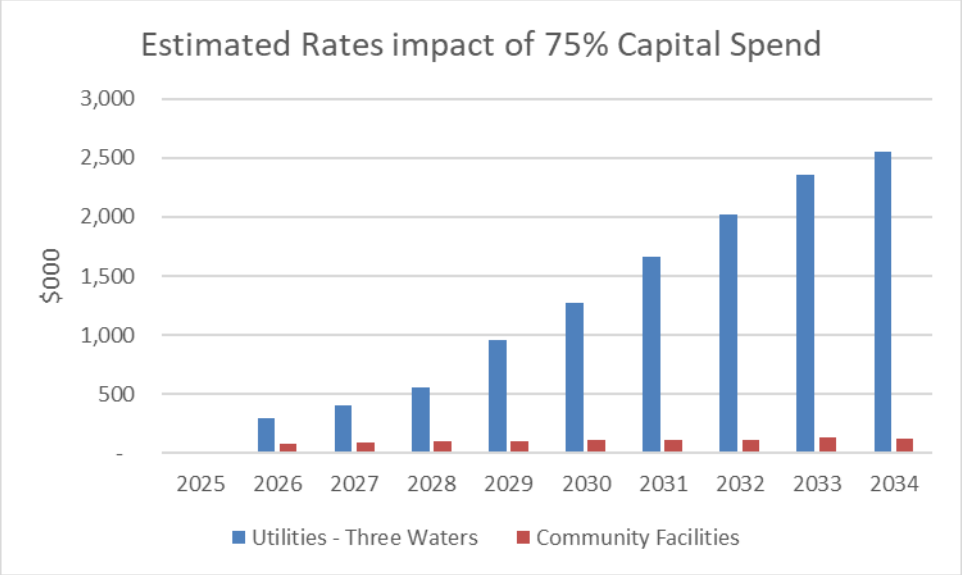
Alternative 1	That our infrastructure will have excess capacity due to lower than forecast growth
Impact	**Minor** Maintenance costs to maintain the current level of service may not be sustainable. This means that levels of service may need to be reduced.
Likelihood	**Unlikely** Population forecasts are based on the Infometrics high scenario population projections (May 2023). Business growth is based on trends from past and current development and the consideration of current and the expectation of future economic circumstances. Decisions around infrastructure investment are based on past and current development trends and information that Council holds on the capacity of the current networks. Changes in population growth rates, growth demand and the location of growth within the District can all influence what infrastructure projects are needed and when.
Overall Risk	**Low (2)**
Reasons & Financial Effect of Uncertainty	If the number of new households connecting to reticulated infrastructure networks is lower than forecast, the revenue from rates and development contributions will be lower. This means that the costs for maintenance and renewal will be higher per ratepayer.
Mitigating Factors (if applicable)	Any major changes to the growth trend will be identified through processes in place to monitor population growth and patterns of development across the district. As each project needs to be economically justifiable, projects are unlikely to proceed until there is sufficient demand.

Alternative 2	That our infrastructure will have insufficient capacity to meet growth demand.
Impact	**Moderate** Additional investment will be required in new infrastructure if the level of service is not being met. The Three Waters distribution and collection networks and treatment facilities have capacity to meet some increased forecast growth related needs. The networks overall are in good condition.
Likelihood	**Unlikely** Population forecasts are based on the Infometrics high scenario population projections (May 2023). Business growth is based on trends from past and current development and the consideration of current and the expectation of future economic circumstances. Decisions around infrastructure investment are based on past and current development trends and information that Council holds on the performance of the existing network. Changes in population growth rates, growth demand and the location of growth within the District can all influence what infrastructure projects are needed and when.
Overall Risk	**Guarded (4)**
Reasons & Financial Effect of Uncertainty	Growth significantly above forecast rates will mean that major infrastructure networks will need to be expanded earlier than planned. If infrastructure is not able to keep up with demand, levels of service may suffer, making the District a less attractive place to live.
Mitigating Factors (if applicable)	Funding for growth projects will be partially funded through development contributions. Growth will need to be significantly above forecast levels before additional investment in infrastructure is required. Any major changes to growth trends will be identified through processes in place to monitor development trends across the District. Council has

	proactively invested in growth related developments, particularly in Maewa (Precinct 4) and the Kawakawa Industrial area (Precinct 5).

Achievement of Capital Works Programme

Assumption:

Alternative 1	**That Council will not have the resources available to achieve 85% to 105% of its annual capital works programme over the life of the 10-year plan.**
Impact	**Moderate** Council has adopted the target to complete between 85%-105% of its capital works programme annually. This target in included as a Key Performance Indicator for the Chief Executive. If Council is unable to meet this target, the cost of capital (interest payments) to service debt on loans for capital works would be minimised. This would have a positive impact on rates but may impact on availability and/or levels of service to the community. The following graphs indicate the impact on rates resulting from 50% and 75% capital expenditure of utilities and community facilities capex over the life of the 10-Year Plan.  

Likelihood	**Likely** While Council is proceeding on the expectation that capital works programme targets will be met, it is acknowledged that average annual capital expenditure of 79% has been completed over the period 2015-2020. To support the completion of the capital works programme, internal resourcing has been boosted with the appointment of an additional Project Manager and Design Engineer, and administration support staff. The additional resources will support staged and integrated project management and procurement practices, with the objective of bundling multiple projects into tenders to attain contractor commitment and ensure delivery. This includes bundling of projects across multiple agencies. Allowances will be made at the time of tender acceptance to add stages to the contracts, and contract completion times may be extended to allows contractors to programme their work effectively. This has been considered within projected project milestone and completion dates. Factors that may affect delivery are the availability of additional specialist engineering expertise and external contractors (including prequalification requirements for contractors), the capacity of Regional Council to process resource consent applications within statutory timeframes, and the ability to procure products and equipment from offshore. An additional risk is elevated demand due to the large capital works programmes of both neighbouring Councils and central government in the region. It is expected that the bundling of projects will drive resource efficiency and support completion of capital projects across the region.
Overall Risk	**Moderate (8)** We are currently well resourced to deliver to capital works programme targets however factors outside the control of Council may impact on the achievement of targets.
Reasons & Financial Effect of Uncertainty	Planned upgrades, renewals and maintenance works will continue as set out in the Infrastructure Strategy, the Long-term Plan, and the Forward Works Programme in the Three Waters Asset Management Plan. Any deferral of planned capital works will have a positive impact on rates affordability in that year.
Mitigating Factors (if applicable)	Staging and integrated project management and procurement processes will be employed to support capital works programme delivery. As above, this includes seeking opportunities to bundle capital works projects across the wider region.

Resource Consents

Assumption: That applications to renew resource consents will be granted but that Council will face additional costs and delays through the application process, particularly in relation to wastewater discharges. Monitoring costs and requirements will be higher for consent renewals due to more stringent conditions.

Alternative 1	**That consents will be renewed in a timely manner and issued without any major changes to existing conditions or requirements.**
Impact	**Minor** If consents are renewed without major changes to conditions and requirements, there will be no need to increase the budget for consent monitoring and renewal included in the Asset Management Plans. Those that have already been adjusted in anticipation of new requirements, may have a surplus.
Likelihood	**Unlikely** Consents already approved under the One Plan have been subject to more stringent conditions and requirements than those issued under the previous Regional Plans. Given the recent Environment Court decision that ruled against Horizons Regional Council (NZEnvC ENV-2016-WLG-000038), Council thinks it is likely that the trend towards increasing consent costs, delays, and more stringent consent requirements will continue.
Overall Risk	**Low (2)**

Reasons & Financial Effect of Uncertainty	Council has a good understanding of its existing consent requirements and monitors expiry dates through Asset Management Plans. However, while Council can advocate to Regional Council, there is limited flexibility in terms of determining consent conditions.
Mitigating Factors (if applicable)	Council has a good working relationship with Horizons, and knowledge and understanding of working under the Horizons One Plan. The Council will monitor and work with Horizons to ensure it has sufficient notice of and is well-placed to manage any consent changes required. Council works in a partnership alongside Ngāti Kauwhata within Mana Whakahaere (Ōroua River Governance Group). This group was formed under the Ōroua Declaration in 2015 and meets at least once per year. During 2023, the group met four times. In relation to resource consents, Council's membership on this group helps to demonstrate Council's commitment towards improved outcomes for the Ōroua River and helps to ensure that Council activities impacting or improving the health of the Ōroua River are understood by Ngāti Kauwhata members. This in turn contributes to Ngāti Kauwhata representatives feeling well informed when making decisions on Resource Consent applications where iwi endorsement is required.

Alternative 2	**That existing resource consents are not renewed and/or granted**
Impact	**Severe** If existing consents cannot be renewed and/or granted, our existing treatment facilities would be potentially redundant. For new consents, new works could be delayed, impacting on provision of services. Council would need to develop alternative ways of managing infrastructure to find solutions that are able to be consented.
Likelihood	**Rare** While we are anticipating increased costs and time delays in meeting new consent requirements, we consider it highly unlikely that Council will fail to obtain consent. Council may need to make changes, such as eliminating any water-based treatment of wastewater discharges but should be able to find solutions that meet the requirements of the One Plan and are supported by iwi, the community, and other stakeholders.
Overall Risk	**Moderate (8)**
Reasons & Financial Effect of Uncertainty	If Council continued to operate its treatment facilities and/or discharge without consent, it may face enforcement action and fines. Affordability of services in small communities could become increasingly difficult.
Mitigating Factors (if applicable)	Council has a good working relationship with Horizons and knowledge and understanding of working under Horizons One Plan. The Council will monitor and work with Horizons to ensure it has sufficient notice of and is well-placed to manage any consent changes required. Council works in a partnership alongside Ngāti Kauwhata within Mana Whakahaere (Ōroua River Governance Group). This group was formed under the Ōroua Declaration in 2015 and meets at least once per year. During 2023, the group met four times. In relation to resource consents, Council's membership on this group helps to demonstrate Council's commitment towards improved outcomes for the Ōroua River and helps to ensure that Council activities impacting or improving the health of the Ōroua River are understood by Ngāti Kauwhata members. This in turn contributes to Ngāti Kauwhata representatives feeling well informed when making decisions on Resource Consent applications where iwi endorsement is required. Additional budget has been included in Asset Management Plans to offset the increased costs for consent renewals and to ensure compliance with new consent conditions.

Legislative Change

Assumption That the Manawatū District Council is prepared to respond to signalled legislative change. However, there will be resource implications as Council will need to increase its capacity to meet the requirements of additional central government legislation and legislative instruments.

Alternative	**That the Manawatu District Council will be unable to meet the requirements under new legislation and legislative instruments due to insufficient capacity.**
Impact	**Major** The impact of Council being unable to meet its obligations under new legislation and legislative instruments due to insufficient capacity and/or capability is dependent on what penalties are imposed by Government for non-compliance. If all or most councils are unable to meet new obligations, this will likely lessen the response from Central Government and may result in a reconsideration of the timeframes or scope of new legislation or legislative instruments. However, if the Manawatu District Council is alone in its inability to meet its obligations, the worse case scenario is that Government will appoint commissioners to take over the governance role of Council
Likelihood	**Possible** We are within a significant period of legislative change. The Coalition Government repealed the Natural and Built Environment Act 2023 and the Spatial Planning Act 2023 on 24 December 2023, and the Three Waters Legislation on 14 February 2024. The coalition Government has signalled several other changes to regulation and legislative instruments that will impact on Councils roles and responsibilities including: • Replacing the Resource Management Act 1991 (RMA) with new resource management laws premised on the enjoyment of property rights as a guiding principle; • Undertaking an urgent review into the implementation of the National Policy Statement (NPS) on Indigenous Biodiversity before any implementation, including ceasing the implementation of new Significant Natural Areas; • Streamlining the plan preparation process in Schedule 1 of the RMA • Introducing financial incentives for councils to enable more housing • Simplifying the planning system and related statutes including the Public Works Act and the Reserves Act • Replacing the NPS – Freshwater Management 2020 and the national Environmental Standards (NES) for Freshwater, including by - Rebalancing Te Mana o te Wai to better reflect the interests of all water users - Allowing district councils more flexibility in how they meet environmental limits and seeking advice on how to exempt councils from obligations as soon as practicable • Amending the NES for Plantation Forestry regulations to place a duty upon harvesters to contain and remove post-harvest slash • Establishing a National Infrastructure Agency that prioritises the delivery of regional and national projects of significance • Preparing a new Government Policy Statement (GPS) Transport (100-day plan) • Reducing expenditure on cycleways • Amending the Building Act and resource consent system to make it easier to build small structures of up to 60sqm. When considering the cumulative cost and resourcing requirements of new legislation and legislative instruments, it is possible that council will be unable to meet all its obligations. For example, Council may be unable to attract or retain staff with the necessary skills and experience to meet the requirements of new legislation or legislative instruments. Even if Council has the capability to meet new roles and

	responsibilities, the cost of doing so may exceed Councils debt cap or makes rates unaffordable.
Overall Risk	**Moderate (12)**
Reasons & Financial Effect of Uncertainty	If Central Government does not provide local government with the financial assistance it needs to meet new obligations, the costs will fall on ratepayers. The cumulative impact on rates may exceed the Councils debt cap or other financial controls or exceed ratepayers ability to pay. Council recognises that there is a national shortage of specialist staff, such as ecologists and planners, that will be needed to meet the new requirements of legislation. The inability to attract the necessary staff could result in more shared arrangements and outsourcing of work to consultants, potentially increasing costs.
Mitigating Factors	Council monitors, reports, and submits on new legislative requirements as they are notified by Government to advocate on behalf of the community and inform out preparedness to these legislative changes. Additional budget has been included within the Long-Term Plan in anticipation of the new responsibilities and resource implications of new legislative requirements.

4.3 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.6.

Acquiring new assets will commit the Manawatū District Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.4 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.[3]

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

Risk and opportunities identified to date are shown in Table 4.2

[3] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

Table 4.2 - Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Climate Change	Rising sea levels	Surface flooding	
Climate Change	Increased frequency of extreme weather events	There is a risk that assets will fail or need to be renewed earlier than expected	By continuing to ensure that the Manawatū District has the best possible information about its assets, the Council can better predict future demand and account for any potential required changes as a result of climate change.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change.
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing lifecycle costs.

To provide context, detail is first provided on:

- Existing assets on a per scheme basis; and
- Condition and performance of existing assets.

5.1 Background Data

Physical parameters

The assets covered by this AMP are shown in Table 5.1.

The tables below give a summary of the key information for Councils water, wastewater and stormwater schemes including main lengths, meters, points, pump stations and plant assets.

The age profile of the assets included in this AMP are shown in Figure 5.1.

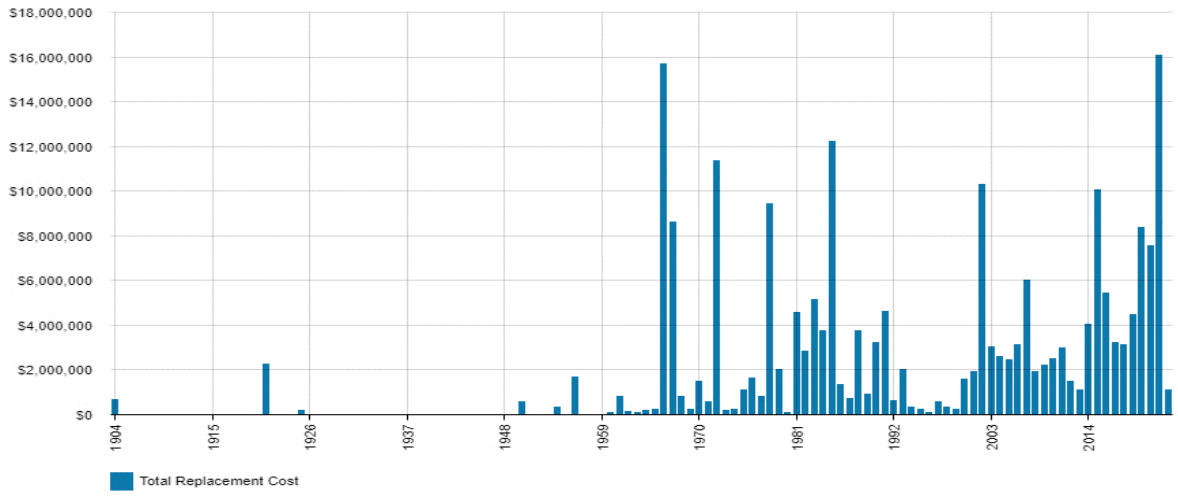
Table 5.1 - Assets covered by this Plan

Water Supply	Dimensions	Unit of Measurement	Replacement Value
Water supply main lengths	487,395	m	$148,095,741
Water plant	36,119	Ea, m, m^2	$41,372,735
Water meters	539	Ea	$771,693
Water points	12,818	Ea	$15,839,312
		TOTAL	**$206,079,481**

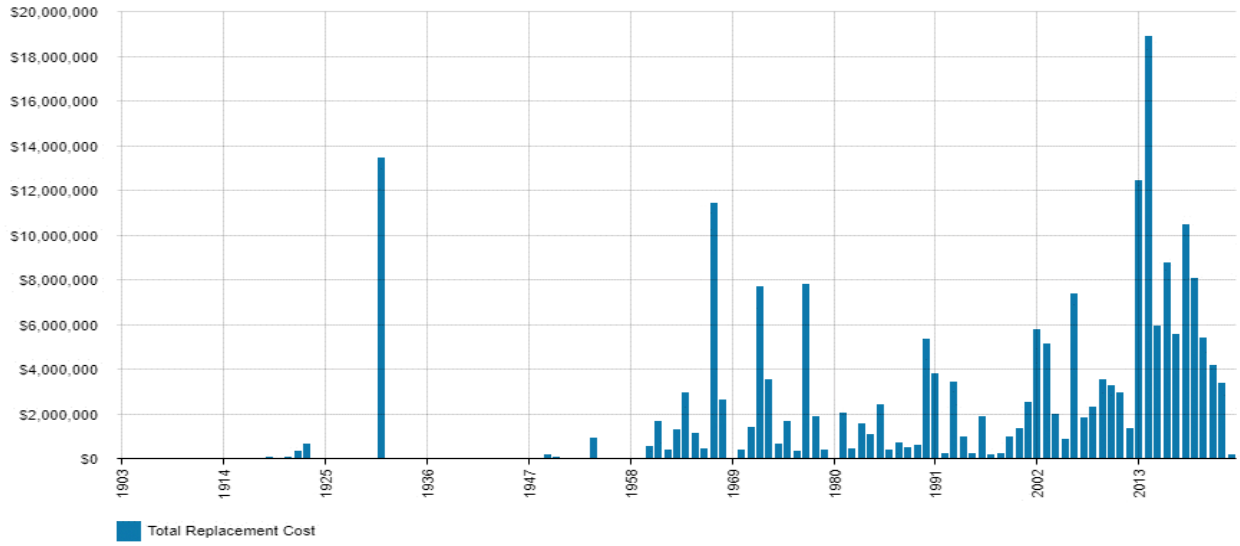
Stormwater	Dimensions	Unit of Measurement	Replacement Value
Stormwater main lengths	124,815	m	$87,090,848
Stormwater pump stations	68	Ea, m	$334,573
Open drains	126,209	m	$10,814,643
Stormwater points	2,158	Ea	$10,100,557
		TOTAL	**$108,340,621**

Wastewater	Dimensions	Unit of Measurement	Replacement Value
Wastewater main lengths	249,135	m	$89,174,602
Sewer pump stations	6,056	Ea, m	$7,323,063
Wastewater plant	171,063	Ea, m, m^2	$66,249,446
Wastewater point	3,012	Ea	$20,231,284
		TOTAL	**$182,978,394**

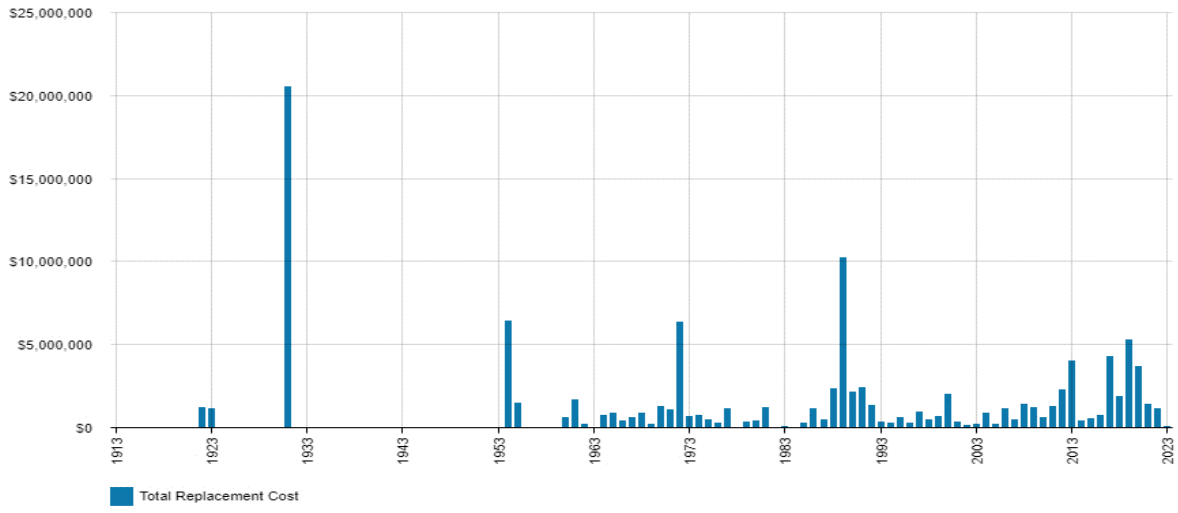
Figure 5.1 – Asset Age Profile
Asset Age Profile Graph – Water Supply



Asset Age Profile Graph – Wastewater



Asset Age Profile Graph – Stormwater



Water Supply Schemes

Table 5.2 Feilding – Water supply scheme overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	6464	
	No. Properties connected	6216	
	SUIP	6412	
System components	Source(s)	Surface water: - Ōroua River Groundwater: - Campbell Road Bore - Newbury Line bore	
	Treatment	Almadale Treatment Plant (surface water) Awa Street Treatment Plant (groundwater)	
	Reticulation	Pressure & Flow	On Demand Excluding Mt Taylor which is on a restricted supply
		Storage	Fraser Drive Reservoir
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$142,789,654
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$58,171,950
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$1,766,035

Table 5.3 Rongotea – Water supply scheme overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	332	
	No. properties connected	98	
	SUIP	98	
System components	Source(s)	Groundwater	
	Treatment	Rongotea Water Treatment Plant	
	Reticulation	Pressure & Flow	On Demand
		Storage	Reservoir at Water Treatment Plant Site
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$5,983,959
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$5,194,264
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$92,472

Table 5.4 Sanson – Water supply scheme overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	268	
	No. properties connected	253	
	SUIP	270	
System components	Source(s)	Groundwater: - Sanson Bore	
	Treatment	Treatment plant adjacent to the new bore	
	Reticulation	Pressure & Flow	Restricted supply
		Storage	Reservoir at WTP
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$5,986,913
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$4,674,875
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$71,390

Table 5.5 Himatangi – Water Supply scheme overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	465	
	No. properties connected	444	
	SUIP	445	
System components	Source(s)	Groundwater – Bore on Koputara Road	
	Treatment	Himatangi Beach Water Treatment Plant	
	Reticulation	Pressure & Flow	On demand
		Storage	Reservoirs at Water Treatment Plant Site
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$7,190,520
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$4,279,799
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$89,907

Rural water supply schemes

Table 5.6 Ohakea Rural Water Scheme - overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	74	
	No. Properties connected	74	
	SUIP	1001	
System components	Source(s)	Groundwater	
	Treatment	Water Treatment Plant adjacent to groundwater bore.	
	Reticulation	Pressure & Flow	Rural Water Scheme Restricted supply
		Storage	Reservoir
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$20,309,317
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$19,850,814
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$214,087

Table 5.7 Stanway-Halcombe Rural Water Supply – Asset overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	322	
	No. Properties connected	322	
	SUIP	1483	
System components	Source(s)	Shallow bores adjacent to the Rangitikei River.	
	Treatment	Water Treatment Plant adjacent to bores.	
	Reticulation	Pressure & Flow	Rural Water Scheme Restricted Supply
		Storage	Multiple Reservoirs
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$15,810,811
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$11,145,385
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$174,281

Table 5.8 Waituna West Water Supply – Asset overview

Description		Quantity/comment	
Scheme coverage	No. Properties within billing area	64	
	No. properties connected	64	
	SUIP	617	
System components	Source(s)	Groundwater	
	Treatment	Waituna West Water Treatment Plant	
	Reticulation	Pressure & Flow	Rural Water Scheme Restricted Supply
		Storage	Multiple reservoirs
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$7,303,612
	Depreciated Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$4,635,382
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$98,980

Wastewater schemes

Table 5.9 Feilding Wastewater (including Mt Taylor) – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	6615	
	No. properties connected	6369	
	SUIP	7224	
System components	Reticulation	Gravity network (excluding Mt Taylor which has a pressure system). Pump stations: • South Street • Denbigh Square • Fairview Ave • Simon Street • Timona Park • Mahinui Street • Port Street East #060 • Port Street East #110	
	Treatment Plant	Feilding Wastewater Treatment Plant Dual land/surface water discharge system.	
	Within Centralisation Scope?	Yes – Destination Treatment Plant	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$158,331,658

	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$97,872,653
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$2,446,805

Table 5.10 Rongotea Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	307	
	No. properties connected	294	
	SUIP	323	
System components	Reticulation	Gravity Network Pump Stations: • Trent Street • Tyne Street • Caravan Dump Site	
	Treatment Plant	Rongotea Wastewater Treatment Plant. Discharge to surface water.	
	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$7,471,554
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$3,205,192
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$107,616

Table 5.11 Sanson Wastewater – Asset overview

Description		Quantity/comment
Scheme coverage	No. properties within billing area	272
	No. properties connected	261
	SUIP	288
System components	Reticulation	Gravity Network Pump Stations: • Course Lane
	Treatment Plant	Sanson Wastewater Treatment Plant Dual land/surface wastewater disposal system. Disposal to land via irrigation on MDC property. Surface water discharge to the Piakatutu Stream.

	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$6,178,109
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$3,390,180
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$102,709

Table 5.12 Himatangi Beach Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	471	
	No. properties connected	345	
	SUIP	352	
System components	Reticulation	Pressure system with onsite pump stations	
	Treatment Plant	Himatangi Beach Wastewater Treatment Plant. Discharge to land (irrigation).	
	Within Centralisation Scope?	No	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$14,064,660
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$10,611,276
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$346,481

Table 5.13 Halcombe Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	132	
	No. properties connected	116	
	SUIP	157	
System components	Reticulation	Gravity network	
	Treatment Plant	Halcombe Wastewater Treatment Plant. Dual land/surface water disposal system. Disposal to land via irrigation on a eucalyptus plantation (MDC property). Surface water discharge to the Rangitawa Stream.	
	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2022)	**Total**	$4,316,260

	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2022)	**Total**	$1,939,803
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2022)	**Total**	$97,168

Table 5.14 Cheltenham Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	33	
	No. properties connected	33	
	SUIP	44	
System components	Reticulation	Gravity network servicing onsite septic tanks. Pump stations: • Kimbolton Road	
	Treatment Plant	Cheltenham Wastewater Treatment Plant. Discharge to land via a soakage trench.	
	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$1,057,167
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$651,600
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$18,512

Table 5.15 Kimbolton Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	85	
	No. properties connected	75	
	SUIP	103	
System components	Reticulation	Gravity network servicing onsite septic tanks. Pump Stations: • Edwards Street	
	Treatment Plant	Kimbolton Wastewater Treatment Plant. Discharge to surface water.	
	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$3,322,451
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$1,409,791
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$99,650

Table 5.16 Awahuri Wastewater – Asset overview

Description		Quantity/comment	
Scheme coverage	No. properties within billing area	14	
	No. properties connected	14	
	SUIP	20	
System components	Reticulation	Gravity network servicing onsite septic tanks. Pump Stations: • Triple R	
	Treatment Plant	Awahuri Wastewater Treatment Plant. Discharge to surface water, plans to pump to Manawatū WWTP.	
	Within Centralisation Scope?	Yes	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$382,102
	Depreciated replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$182,872
	Annual depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$5,670

Stormwater schemes

Table 5.17 Feilding stormwater – asset overview

Description		Quantity/comment	
Overview	Description	Well developed, urban stormwater network	
	Pre LTP 2021-2031	Harmonised stormwater rate	
	Post LTP 2021-2031 adoption	No change	
Scheme coverage	No. properties within billing area	6771	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$90,634,753
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$58,909,186
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$645,555

Table 5.18 Rongotea stormwater – Asset overview

Description		Quantity/comment
Overview	Description	Formal, village stormwater network
	Pre 2021-2031 LTP	Harmonised stormwater rate
	Post 2021-2031 LTP adoption	No change

Scheme coverage	No. Properties within billing area	285	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$3,068,891
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$2,350,620
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$21,928

Table 5.19 Sanson stormwater – Asset overview

Description		**Quantity/comment**	
Overview	Description	Formal, village stormwater network	
	Pre 2021-2031 LTP	Harmonised stormwater rate	
	Post 2021-2031 LTP adoption	No change	
Scheme coverage	No. Properties within billing area	263	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$3,246,015
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$2,718,250
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$23,673

Table 5.20 Halcombe stormwater – Asset overview

Description		**Quantity/comment**	
Overview	Description	Village stormwater service	
	Pre 2021-2031 LTP	Harmonised stormwater rate	
	Post 2021-2031 LTP adoption	No change	
Scheme coverage	No. Properties within billing area	132	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$334,261
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$286,226
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$2,827

Table 5.21 Kimbolton Stormwater – Asset overview

Description		Quantity/comment	
Overview	Description	No Village stormwater service	
	Pre 2021-2031 LTP	No rate	
	Post 2021-2031 LTP adoption	No rate	
Scheme coverage	No. properties within billing area	N/A	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$86,485
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$81,677
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$625

Table 5.22 Cheltenham Stormwater – Asset overview

Description		Quantity/comment	
Overview	Description	Village stormwater service	
	Pre 2021-2031 LTP	Harmonised stormwater rate	
	Post 2021-2031 LTP adoption	No change	
Scheme coverage	No. Properties within billing area	20	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$295,114
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$195,161
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$2,112

Table 5.23 Himatangi Beach stormwater – Asset overview

Description		Quantity/comment	
Overview	Description	Village stormwater service	
	Pre 2021-2031 LTP	Harmonised stormwater rate	
	Post 2021-2031 LTP adoption	No change	
Scheme coverage	No. Properties within billing area	457	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$118,682
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$57,413
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$1,736

Table 5.24 Tangimoana Stormwater – Asset overview

Description		Quantity/comment	
Overview	Description	Village stormwater service	
	Pre 2021-2031 LTP	Harmonised stormwater rate	
	Post 2021-2031 LTP adoption	No change	
Scheme coverage	No. Properties within billing area	210	
Value	Replacement cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$740,534
	Depreciated Replacement Cost (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$688,374
	Annual Depreciation (MDC Internal Asset Valuation as at 1 July 2023)	**Total**	$9,654

Table 5.25 Rural drainage schemes – Asset overview

Scheme		Quantity/comment		
Bainesse	Overview	Pre LTP	Rural drainage scheme	
		Post LTP adoption	No change	
	Scheme coverage	No. properties within billing area	56	
	Value (MDC Internal Asset Valuation as at 1 July 2023)	Replacement cost	Open Drains	$1,627,103
		Depreciated replacement cost	Open Drains	$1,627,103
		Annual depreciation	Open Drains	$0
Maire	Overview	Pre LTP	Rural drainage scheme	
		Post LTP adoption	No change	
	Scheme coverage	No. properties within billing area	36	
	Value (MDC Internal Asset Valuation as at 1 July 2023)	Replacement cost	Open Drains	$67,976
		Depreciated replacement cost	Open Drains	$67,976
		Annual depreciation	Open Drains	$0
Makowhai	Overview	Pre LTP	Rural drainage scheme	
		Post LTP adoption	No change	
	Scheme coverage	No. properties within billing area	61	
	Value (MDC Internal Asset Valuation as at 1 July 2023)	Replacement cost	Open Drains	$108,897
		Depreciated replacement cost	Open Drains	$108,897
		Annual depreciation	Open Drains	$0
Oroua Downs	Overview	Pre LTP	Rural drainage scheme	
		Post LTP adoption	No change	
	Scheme coverage	No. properties in billing area	223	
	Value (MDC Internal Asset Valuation as at 1 July 2023)	Replacement cost	Open Drains	$8,168,562
		Depreciated replacement cost	Open Drains	$8,168,562
		Annual depreciation	Open Drains	$0

Asset condition, capacity, and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.26.

Historically, the Three Waters capital and renewals programmes have been driven by asset age and expected useful life.

Councils' asset register records 'condition,' 'performance', 'capacity', and 'accuracy' fields on a per asset basis. However, this information is not used at present to support decision making as the confidence in this information is very low. This is due to the provenance of this information being unknown and it being historic practice to update this information when an asset is created, but not update over time as additional information is collected.

Table 5.26 - Known Service Performance Deficiencies

Location	Service Deficiency
Feilding Water Supply	• Oroua River low flow extraction • Industrial area fire demand • Disaster risk for pipelines and poor condition assets at the Almadale Water Treatment Plant
Manawatū Wastewater Treatment Plant	• Nitrogen reduction • Optimisation of irrigation • Separation of trade waste
Village Wastewater Treatment Plants	• Consent expiration for villages in conjunction with Horizons One Plan requiring land application for treated wastewater
Stormwater	• Effects of climate change and extreme weather causing increased frequency and magnitude of flooding events

(The above service deficiencies were identified from expert staff assessment.)

Asset condition

Asset condition relates to the physical state of an asset which typically impacts its ability to provide its intended service. Well-maintained assets are more reliable, efficient, and cost effective, and can provide a higher level of service to users over time.

Condition is currently monitored using a combination of condition assessments and known fault derived from reactive maintenance from our reticulation service team via our contact center service requests.

Condition is measured using a 1 – 5 grading system[4] as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AMP results are translated to a 1 – 5 grading scale for ease of communication.

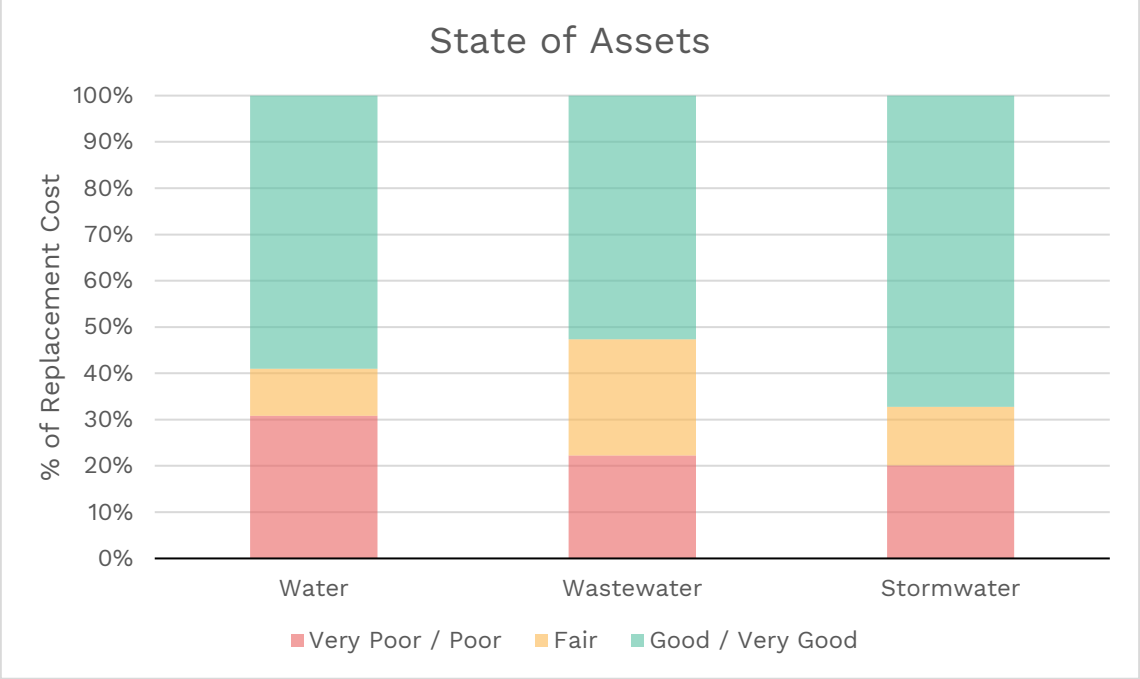
[4] IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Table 5.27 - Condition Grading System

Condition Grading	Description of Condition
1	**Very Good**: free of defects, only planned and/or routine maintenance required
2	**Good**: minor defects, increasing maintenance required plus planned maintenance
3	**Fair**: defects requiring regular and/or significant maintenance to reinstate service
4	**Poor**: significant defects, higher order cost intervention likely
5	**Very Poor**: physically unsound and/or beyond rehabilitation, immediate action required

The condition profile of our assets is shown in Figure 5.2.

Figure 5.2 - Asset Condition Profile



Asset condition is a measure of an asset's physical integrity. Knowing the condition of an asset enables more accurate prediction of asset development, maintenance and renewal/replacement requirements.

The Manawatū District Council identifies the condition of the three waters infrastructure assets by the age of the asset, through visual targeted inspections (including sampling) and maintenance monitoring.

Targeted inspections are carried out on asset components that are considered critical to Council and the community, have the potential to impact on public health and safety; or where there is a specific requirement, for example to meet regulatory requirements or for asset acquisition, disposal, or justification. Targeted inspections of infrastructure assets are carried out by Council staff, or a specialist Consultant to identify the condition of specific asset components at intervals specified by the Utilities Manager or upon request.

To identify the general condition of its three waters assets Manawatū District Council undertakes the underground reticulation inspections, which are carried out by Council staff during works or as issues are identified. Maintenance monitoring is also carried out to identify

the condition of infrastructure and any item(s) that need attention or could affect the integrity of the asset and the service it provides. Maintenance monitoring of stormwater includes:

- Underground reticulation inspections;
- Inspection of manholes; and
- Visual stream inspections for obstructions (twice per year).

Condition Grading - Visual targeted inspections (including sampling), and maintenance monitoring provide both qualitative descriptions and quantitative grading of asset component condition. Condition grading supports the development, maintenance, and renewal/replacement of an asset by enabling more accurate prioritisation of forward works programmes. The International Infrastructure Management Manual provides guidance on assessing the condition of assets and approaches to grading the condition. In line with this Manawatū District Council has developed a condition grading system to support identifying the condition of assets at the group level. Using the system, the assumed condition of assets are ranked from 1-5 as illustrated in Table 5.27 above.

5.2 Asset Development Strategy

Asset development is driven by the need to rectify deficiencies in the Level of Service, to provide for demand created by outside influences, and to allow for growth. Within the (10 year) life of this Plan the following works are planned. In addition to this a Feilding Water Strategy has been developed which is briefly described below.

Water Supply

- Feilding Water Resilience
- Precinct 4 Growth Works
- Precinct 5 Growth Works – Turners Road Extension
- Stanway-Halcombe Water Supply Upgrade

Wastewater

- Precinct 4 Growth Works
- Precinct 5 Growth Works – Turners Road Extension
- Feilding Wastewater Treatment Plant Upgrade
- Centralisation Project

Stormwater

- Precinct 4 Growth Works
- Precinct 5 Growth Works – Turners Road Extension
- Village Stormwater Improvement Works
- Urban Flood Protection

Stanway-Halcombe Rural Water Supply Protozoa Upgrade

The Stanway–Halcombe Rural Water Scheme is a water reticulation scheme provided by Council. It consists of shallow bores adjacent to the Rangitīkei River and a water treatment plant which chlorinates the water. The scheme was primarily designed to provide stock watering on a restricted flow basis. In recent years, there has been a reallocation of a proportion of units to lifestyle properties, as farms have been subdivided. This means that water that was not intended for human drinking purposes is now being used for this purpose.

The scheme does not comply with the Drinking Water Quality Assurance Rules (2022), and in response Council has commenced a project to construct a new Water Treatment Plant to achieve the required protozoa compliance.

Unfortunately, heavy rain experienced during Cyclone Gabrielle in the upper catchment of the Rangitikei River caused 100m of river bank to wash away beside the water scheme's river intake point. Because of the loss of filtration previously provided by the fine gravels within the bank, water turbidity levels have increased. Turbidity is caused by things in the water like dirt, sand or even tiny organisms making the water more impure. In response, a Boil Notice was put in place for water scheme users as Council cannot be confident that the water is compliant with bacteria standards due to the spikes in turbidity being experienced. The containerised Water Treatment Plant previously constructed as part of the protozoa upgrade project is incapable of treating this level of turbidity.

To address riverbank instability due to Cyclone Gabrielle, MDC and the Stanway-Halcombe Rural Water Scheme Committee have completed a project alongside Horizons Regional Council to install a new rock wall alongside the river water intake point. Secondly, a new membrane treatment and filtration system is required to enable the constructed Water Treatment Plant to cope with anticipated turbidity levels.

In late January 2024, the Emergency Management and Recovery Minister announced that $1,675,000 (exclusive GST) of Central Government Funding would be provided towards the rock wall and membrane treatment system required to address issues created for the Stanway Halcombe Rural Water Scheme by Cyclone Gabrielle. This Central Government grant funding means that the cost of the cyclone recovery projects to users of the scheme will be minimal.

It is intended for the Boil Notice to remain in place for the water scheme until the membrane treatment system is installed, and the new treatment plant commissioned. A timeframe of December 2024 has been set by Taumata Arowai (NZ drinking water regulator) for Council to have this upgrade project completed.

The project to complete the protozoa upgrade and installation of the new membrane treatment system is within Year 1 (2024-2025) of the Long Term Plan 2024-2034. This timing will allow Council to meet the deadline of December 2024 set by Taumata Arowai.

Feilding Water Resilience

Feilding Water Resilience is a multi-year investment programme to futureproof Feilding's potable water supply via a coordinated approach to capital works, renewals, resourcing consenting and land acquisition.

Council aims to achieve a number of benefits from this programme of investment:

- Reduce reliance on Ōroua River abstraction for Feilding potable water supply to underpin Council's commitment to the Ōroua Declaration, and to give effect to the National Policy Statement on Freshwater Management
- Improve natural disaster resilience of the Feilding potable water network
- Ensure water quality compliance in line with the Drinking Water Quality Assurance Rules (2022)
- Enable population growth in Feilding
- Increase industrial/commercial water capacity in Feilding to help achieve economic development aspirations

Council have planned and budgeted for a number of projects that make up the Feilding Water Resilience programme of work, both within the Long Term Plan 2024-2034, and past Long Term Plans. These projects and associated progress updates are described below:

- Additional storage at MacDonald Heights, Feilding (completed)

- Construction, consenting and commissioning of a new groundwater source for Feilding, including treatment and storage. A new production bore at Roots Street West, Feilding is currently within the testing and consenting stage

- Upgrade to treatment of existing groundwater sources at Campbell Road and Newbury Line to meet the Drinking Water Quality Assurance Rules (2022), and reconsenting of these groundwater sources

- New pipeline installation to connect the new groundwater source (bore) with storage at MacDonald Heights

- Upgrades to improve seismic resilience of the pipeline from the bore on Campbell Road to Feilding, and to lift the performance of trunk mains throughout the network based on condition assessments

- Decommissioning of Almadale Water Treatment Plant, including associated tanks and pipelines, as a final step once all other programme components are completed

Council has budgeted for these future programme components over multiple years within the Long Term Plan 2024-2034. This budget provision has been phased over the life of the Long Term Plan to reflect the significant cost impact of the projects, and Council's current funding pressures and debt cap limits.

Maewa Growth Works (Precinct 4)

Council is installing targeted lead infrastructure to enable growth in the new suburb of Maewa. This infrastructure includes roading, wastewater, water supply and stormwater networks, and is often planned to be completed in stages.

Although Council has a planned schedule of works for these growth works, we must also remain adaptive to development trends and demand for services. Current projects planned within the next 10 years are:

- Roots Street East upgrade

- New Roads 1B, 02 and 03

- Arnott Street Upgrade

- Reids Line West Upgrade

- Stormwater attenuation at Roots Street East

- Stormwater attenuation to the North of Makino Road

The works to enable growth within Maewa are recovered by Council through Development Contributions. Council's debt cap is impacted by these works whilst Council recovers the cost through development contributions received over time.

Growth works within Maewa have been costed in detail for Years 1 – 10 of the Long Term Plan.th budget is included within Council's Development and Financial Contributions Policy. Due to evolving demand pressures from development in the area, and cost fluctuations in the construction sector, these costings and staging will be re-evaluated annually.

Turners Road Extension

Council has commenced construction of an extension to Turners Road in Feilding (Precinct 5). Roading and service installation in this area will create access to 24 hectares of high-quality industrial land, enabling economic development benefits for the district. The road to date has been, and will continue to be, constructed to a quality industrial standard.
The project is planned to be completed over three stages:

- Stage One – Kawakawa Right Turn Bay, Kawakawa Road to Culvert

- Stage Two – Culvert to Darragh Road

- Stage Three – Culvert

Figure 5.3 Turners Road Extension Project stages

Stage One of the Turners Road Extension Project was completed in November 2023. All underground services have been installed, including sewer, water, stormwater, trade waste, power, phone, and fibre. Several industrial companies have already set up operations within this first stage of the road, many creating new jobs within the district. Council has utilised recycled crushed concrete for the construction of Turners Road Extension, which helps to contribute to Council's goals for a circular economy for waste within the district.

Due to cost escalations in the construction sector, budgetary pressures, delays to the project due to a number of external factors, and competing Council priorities, a decision was made in the Annual plan 2023/24 not to include the required budget to complete Stage Two of the project. Although this project is funded via Development Contributions, until these are recovered through new development, Council's debt cap is impacted.

Council has now included the required funding to construct Stages 2 and 3 of the project within Year 2 (2025 – 2026) and Year 3 (2026 – 2027) of the Long Term Plan 2024-2034. The need to stage the remainder of the project across two years is reflective of budgetary pressures and debt cap limits.

Manawatū Wastewater Treatment Plant Reconsenting

An application to Horizons Regional Council for reconsenting of the Manawatū Wastewater Treatment Plant needs to be made by Council in early 2026.

This reconsenting process will involve coordination of a significant amount of stakeholder inputs and technical components. Most importantly, it is fundamental that Council partners with local iwi when deciding the future direction of the Wastewater Treatment Plant. Part of this is ensuring that decisions made give effect to the Ōroua Declaration, and the National Policy Statement for Freshwater Management.

Council intends to take a business case approach for this reconsenting process. In partnership with iwi, this includes:

- Exploring aspirations (e.g. for the Ōroua River), objectives (e.g. gaining required consents) and critical success factors (e.g. value for money, achievable, affordable).
- Creating a long list of all possible options to achieve reconsenting.
- Comparing the long list of options with aspirations, objectives and critical success factors.

- Identifying a short list of options.
- Detailed financial and technical assessments of short listed options.
- Identification of preferred option to progress within consent application.

The major pressure for Council throughout this process is anticipated to be the cost associated with achieving full discharge of treated wastewater to land. Achieving this would require a significant amount of investment in additional land for irrigation surrounding the treatment plant, and therefore is anticipated to create affordability issues for the district's ratepayers. To contribute to the aspiration of full discharge to land, Council have included capital funding within Year 4 of the Long Term Plan 2024-2034 to purchase additional land for irrigation.

Council has anticipated the affordability tension related to full irrigation to land for some time, and part of the mitigation response has been construction of a native plant wetland at the Manawatū Wastewater Treatment Plant, with plans to install a second wetland in the near future.

The Manawatū Wastewater Treatment Plant Wetlands are designed to improve environmental outcomes for the Ōroua River by discharging treated wastewater to the wetlands before it is released into the river (when irrigation to land is not possible). This adds an extra filtration process that will help to break down any remaining nutrients in the treated wastewater. Council partnered with Ngāti Kauwhata on this project, with their Jobs for Nature team being heavily involved in the planting of the wetland.

A further project driven by environmental improvement objectives for the Ōroua River is the Stage 2 wetlands planned for the Manawatū Wastewater Treatment Plant. These wetlands will add additional filtering/dissipation of treated wastewater as a final step after the initial treatment and tertiary filtration through the first wetland. Funding for the Stage 2 wetlands is included within Year 2 (2025 – 2026) and Year 3 (2026 – 2027) of the Long Term Plan 2024–2034.

Budget for the process to achieve reconsenting of the Manawatū Wastewater Treatment Plant has been included within Years 1 to 3 of the Long Term Plan 2024-2034. A significant proportion of this reconsenting budget will be utilised for technical inputs, project management, planning and cultural engagement, as well as legal assistance if required.

Trade Waste Separation

Council is delivering a long term investment programme to separate trade waste streams in Feilding from domestic wastewater streams. Trade waste is the wastewater from industry that is higher in nutrients than domestic wastewater. This makes it more difficult to treat and dispose of and places an operational burden on the Manawatū Wastewater Treatment Plant.

Whilst Council prioritises irrigation of treated wastewater to land, discharge to the Ōroua River occurs whenever discharge to land is not possible, e.g. in wet conditions. Removing treated Trade Waste streams from this river discharge will help to reduce the nutrient load going to the Ōroua River, hereby supporting environmental and cultural outcomes. This in turn will help to give effect to the Ōroua Declaration, and furthermore the National Policy Statement for Freshwater Management.

An additional benefit of the separation of trade waste is the ability for Council to support industrial trade waste customers in Feilding with their ongoing operations. Many of these customers operate site specific wastewater management solutions, however it is anticipated that increasing environmental compliance requirements will reduce the feasibility of these solutions into the future. Providing a Council managed trade waste solution that meets environmental compliance requirements is therefore an enabler of economic development within the district. Installation of a portion of this trade waste pipeline is being completed with the Turners Road Extension project.

Other projects associated with the separation of trade waste included within the Long Term Plan 2024-2034 are:

- Year 1 - Trade waste pipeline installation from South Street to Darragh Road.
- Year 1 – Trade waste pipeline installation from Darragh Road to the Turners Road Culvert.
- Year 2 – Trade waste pipeline installation from Turners Road Culvert to Manawatū Wastewater Treatment Plant.
- Year 2 – Construction of reception/thickening facility.
- Year 3 – Construction of a new Anaerobic Digestor at Manawatū Wastewater Treatment Plant to digest industrial wastewater after processing through the reception/thickening facility.
- Year 4 – Trade waste pipeline installation from Campbell Road to intersection of Darragh and Turners Road.

Figure 5.4 Trade Waste Pipeline Installation Phases

Village Wastewater Centralisation

The objective of this programme of work is to provide a cost-effective, long-term solution to convey wastewater discharges from the villages of the Manawatū district to the Manawatū Wastewater Treatment Plant in Feilding. These villages include Sanson, Rongotea, Halcombe, Cheltenham and Kimbolton.

The benefits of this project include:

- Cultural and environmental benefits from removing treated wastewater discharge from over 100 km of waterways across the Manawatū district.
- Leveraging off the significant investment already made in the Manawatū Wastewater Treatment Plant in Feilding.
- Long-term certainty for the management of wastewater discharge from villages across the district.
- Significantly reduced wastewater consenting requirements, improving Council's environmental and financial risk profile.

An agreement has been formed between Council and the New Zealand Defence Force to incorporate wastewater management for the Ōhakea Airforce Base within the centralisation works. This agreement demonstrates the benefits of collaboration between central and local government, and also helps to support the ongoing operation of the Ōhakea Airforce Base within our district alongside its associated economic benefits.

Due to the significant cost of Village Wastewater Centralisation, Council has made the decision to prioritise centralisation of wastewater from Sanson, Rongotea and Halcombe (respectively) over stages in the Northernmost areas, Cheltenham and Kimbolton, see Figure 5.5. This prioritisation is deemed as appropriate given the growth pressures being experienced in the prioritised areas, and their proximity to the Manawatū Wastewater Treatment Plant. It is important to note that centralisation from Cheltenham and Kimbolton is not being removed from the scope of Village Wastewater Centralisation. Instead, these stages have been delayed outside of the 10 year period (2024-2034) until growth pressures become greater in these areas.

Short-term upgrades to Cheltenham and Kimbolton Wastewater Treatment Plants will be addressed outside of the scope of Village Wastewater Centralisation to achieve environmental compliance. Budget has been included within the Long Term Plan 2024-2034 to complete these short-term Wastewater Treatment Plant upgrades within Year 6.

A number of Village Wastewater Centralisation projects have already been completed by Council, including:

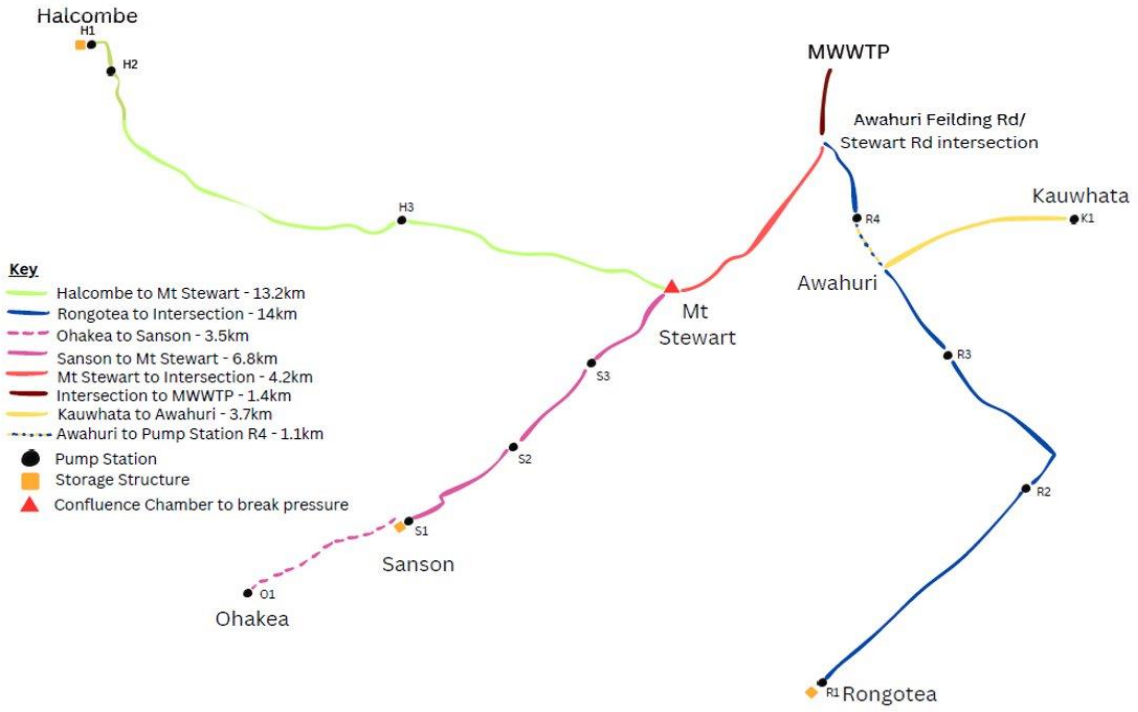
- Pipeline asset purchase
- Installation of pipeline from Sanson to the Manawatū Wastewater Treatment Plant (12.4km)
- Construction of the Sanson/Ōhakea Main Pump Station.

Within the 10 year planning period of the Long Term Plan 2024-2034, Council have included the following Village Wastewater Centralisation projects:

- Year 1 (2024 – 2025) – Completion of Rongotea to Awahuri Road pipeline installation and construction of pump stations. This project commenced in the 2023/2024 financial year.
- Year 2 (2025 – 2026) – Kauwhata to Awahuri Road pipeline (connecting to Rongotea pipeline)
- Year 2 (2025 – 2026) to Year 5 (2028 – 2029) – Halcombe to Mount Stewart intersection pipeline installation and construction of pump stations.

Council is facing affordability challenges for the completion centralisation stages from Cheltenham and Kimbolton based on distance, as well as cost escalations in the construction sector. Therefore, budget has been included within Year 6 (2029 – 2030) of the Long Term plan 2024 – 2034 to complete short term upgrades to the existing wastewater treatment plants in these two villages. These upgrades will need to include land irrigation of treated wastewater to meet iwi expectations, align with the National Policy Statement – Freshwater Management, and achieve the required Horizons Regional Council One Plan consent renewals.

Figure 5.5 Sanson, Rongotea and Halcombe Stages of Village Wastewater Centralisation



Feilding Stormwater Improvements and Halcombe Stormwater Improvements

Heavy rainfall events exacerbated by climate change have had a significant impact on the capacity and capability of the district's stormwater networks. Issues with flooding have been experienced in Feilding and Halcombe village, particularly in December 2021.

Council has completed extensive stormwater modelling for these areas to ensure that there is an evidence base to identify the best value for money solutions. These models also inform Council on the potential impacts of climate change and growth on our stormwater networks. Council intends to actively utilise these stormwater models when planning stormwater upgrades and growth projects into the future to ensure expenditure is achieving maximum impact.

A number of stormwater improvement projects are included within the Long Term Plan 2024-2034 for Feilding from Years 5 – 9. These projects are grouped via key areas of impact:

- Haybittle Street (Railway line Stormwater Diversion) – Year 5 (2028 – 2029) to Year 6 (2029 – 2030)
- Makino Road/Poplar Grove – Year 6 (2029 – 2030)
- Sandon Road/West Street – Year 7 (2030 – 2031)
- Glasgow Terrace/Giesen Road – Year 8 (2031 – 2032) to Year 9 (2032 – 2033).

Council will seek cost efficiencies through undertaking project phases concurrently wherever possible, e.g. land purchase, consenting and design.

Despite affordability challenges, Council has retained these stormwater improvement projects within the 10 Year planning period of the Long Term Plan 2024 – 2034 due to their importance in alleviating risk to the community and property from flood impacts. However, due to debt cap limits and rates impacts, the projects are planned late in the planning period, and have been spread across multiple years.

The Halcombe Stormwater Model is currently being used by Council to identify targeted stormwater network improvements for Halcombe Village, which is experiencing strong growth demand. Funding for district wide stormwater new works within Years 1 to 10 of the Long Term Plan 2024 – 2034 will be partly utilised for Halcombe stormwater improvements.

Manawatū Wastewater Treatment Plant Sludge Management

Wastewater sludge is the residual, semi-solid material that is produced as a by-product of the wastewater treatment process. Council needs to undertake a long-term programme of work to dispose of the sludge that is currently accumulating in storage at the Manawatū Wastewater Treatment Plant.

This wastewater sludge can be sent to landfill; however, this is not a positive outcome for the environment, nor is it affordable for Council. Instead, Council is exploring options to process this wastewater sludge in a way that supports circular economy principles for waste. This will involve feasibility assessments of sludge management options such as composting. To allow these feasibility assessments to occur before a solution is decided on, Council has included budget for the identified solution within Year 5 of the Long Term Plan 2024-2034.

5.3 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, chemicals, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt reinstatement, and pump maintenance.

Stormwater

Asset operations and maintenance are programmed to continue at the same funding levels as at present. Within these programs minor changes will be made to focus more on regular open drain maintenance and culvert entrances.

Wastewater

Asset operations and maintenance are programmed to continue at the same funding levels as at present until such time the centralisation project is complete. The completion of the centralisation project will reduce the costs of operating the existing ponds and wastewater treatment plants, however extra costs associated with the pumping system will be incurred. This will also enable the configuration and cost structure of the MWWTP to be reviewed and optimised.

Water

Asset operation and maintenance are programmed to continue at the same funding levels as at present. The major changes will be associated with the Feilding Water Resilience project and the subsequent decommissioning of the Almadale Water Treatment Plant.

The trend in maintenance budgets is shown in Table 5.4.

Table 5.4 Maintenance Budget Trends Three Waters

Year	Maintenance Budget $
2022/23	$1,451,413
2023/24	$1,498,312
2024/25	$1,506,587

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget

allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in the Risk Management Section of the Asset Management Plan.

Reactive maintenance is carried out in accordance with response levels of service detailed in section 3 Levels of Service.

Asset hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figures 5.6-5.8 show the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.6 - Operations and Maintenance Summary Water Supply

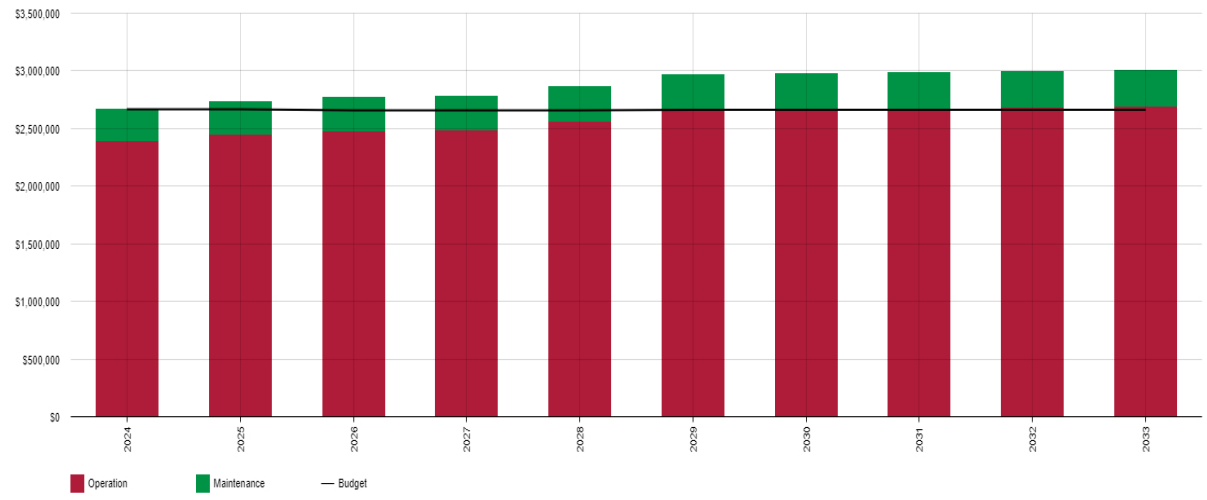


Figure 5.7 - Operations and Maintenance Summary Wastewater

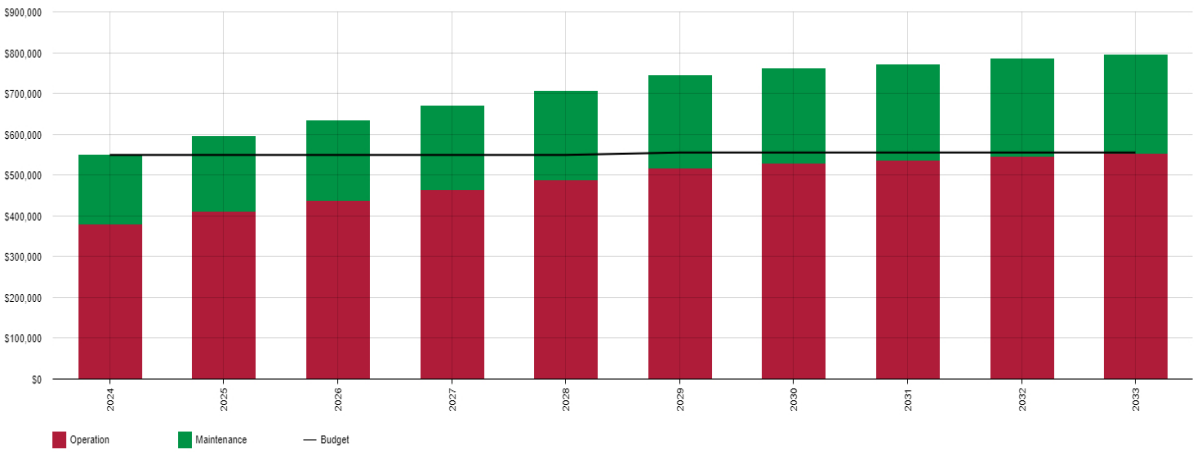
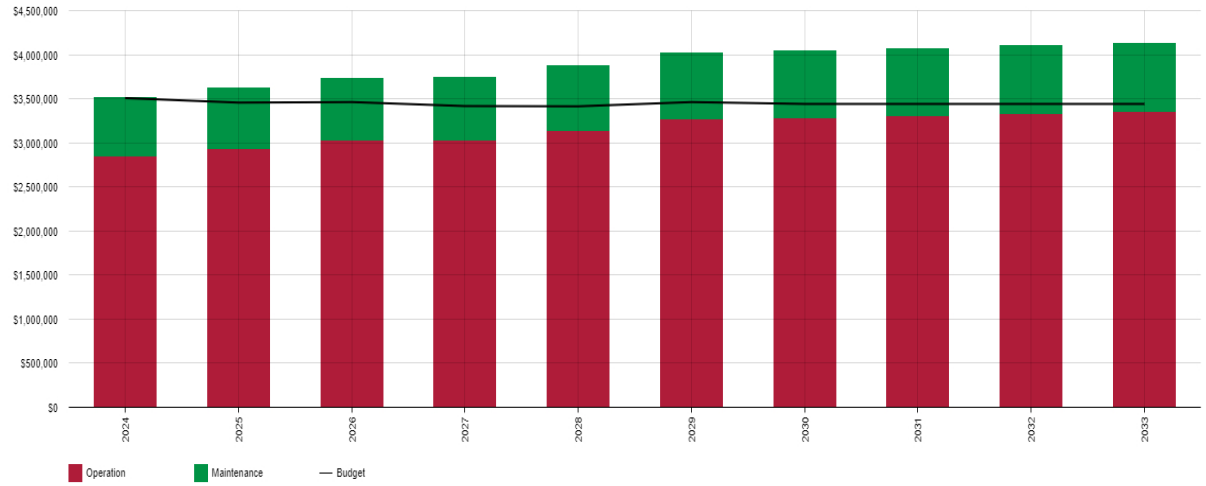


Figure 5.8 - Operations and Maintenance Summary Stormwater



(All figure values are shown in 2023/24 dollars).

The cost for operations and maintenance has been calculated from the current O&M budget and increased proportionately as new assets are forecast to be acquired. The current trend suggests that operations will be maintained at the current level, which is unlikely to affect performance of new assets but some maintnance activities may need to be deffered and are likely to increase the risk of lower levels of service in the future.

Deferred maintenance (i.e. works that are identified for maintenance activities but unable to be completed due to available resources) should be included in the infrastructure risk management plan.

5.4 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces, or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e., condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.5. Asset useful lives were last reviewed during the 1 July 2023 asset revaluation.[5]

Table 5.5 - Useful Lives of Assets

Asset Class	Asset Type	Useful life
Water Supply	Pipes	40 – 120 years
	Valves, hydrants	10 – 100 years

[5] Valuation Report: Utilities Assets 1 July 2023

	Pump stations	50 years
	Treatment, supply, and storage	5 – 100 years
Wastewater	Pipes	100 – 150 years
	Manholes	50 – 100 years
	Pump stations	10 – 100 years
	Treatment plant	4 – 100 years
Stormwater	Pipes	50 – 150 years
	Manholes, cesspits	80 – 100 years

The estimates for renewals in this AMP were based on the alternative method, using the asset register as a key input to the process.

Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g., replacing a bridge that has a 5t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g., condition of a playground).[6]

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce lifecycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[7]

5.5 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figures 5.9-5.11. A detailed summary of the forecast renewal costs is shown in Appendix D.

[6] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[7] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Figure 5.9 - Forecast Renewal Costs Water Supply

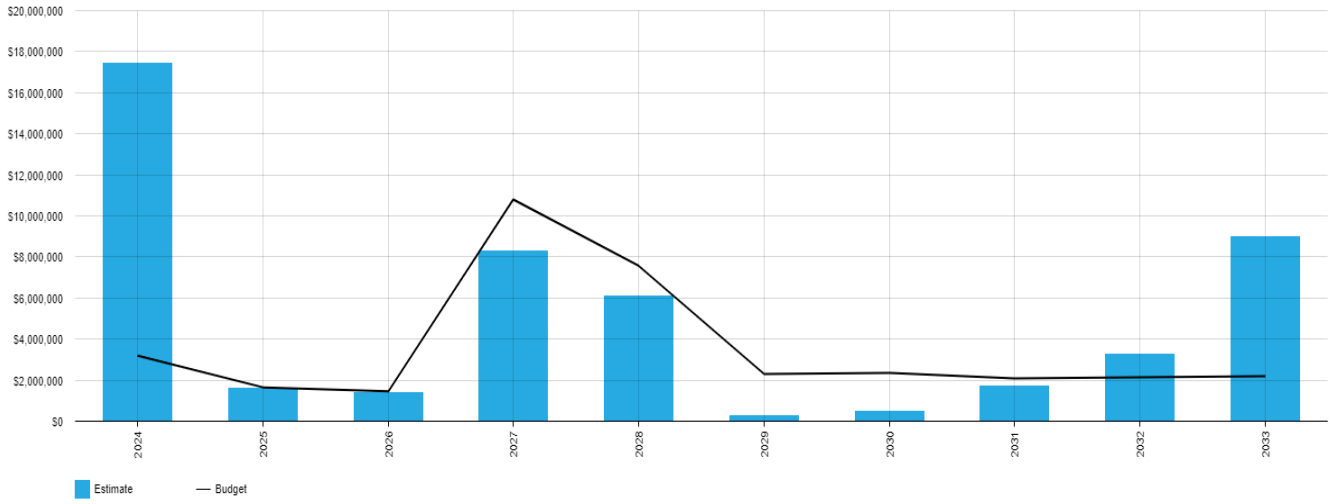


Figure 5.10 - Forecast Renewal Costs Wastewater

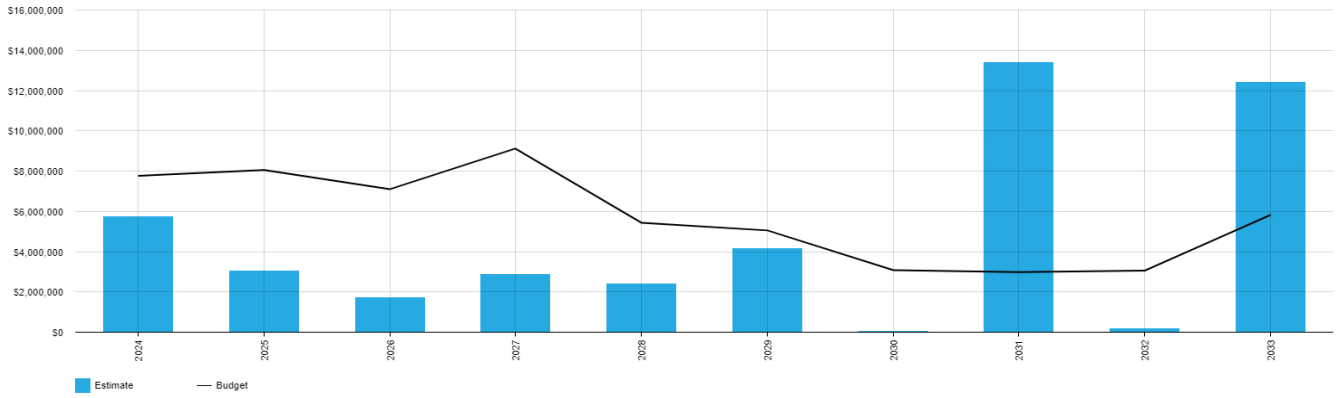
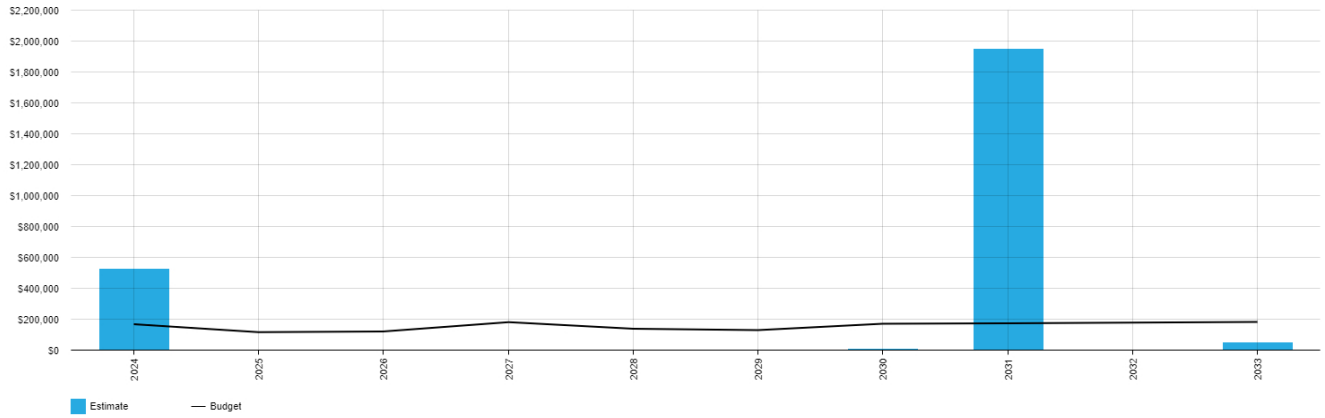


Figure 5.11 - Forecast Renewal Costs Stormwater



All figure values are shown in 2023 dollars.

Forecasted renewals budgets are not sufficient to cover the lifecycle costs of the Three Waters assets. This is due to budget constraints. In year 1 of the Long Term Plan, budget has been put in place for condition assessments of critical network assets, from this, an informed renewals programme will be put in place and asset lifecycle dates will also be reassessed to reflect a more realistic useful life of assets.

5.6 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its present capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Manawatū District Council.

Selection criteria

Proposed acquisition of new assets, and the upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled into future works programmes.

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised in Figures 5.12-5.14 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

Figure 5.12 - Acquisition (Constructed) Summary Water Supply

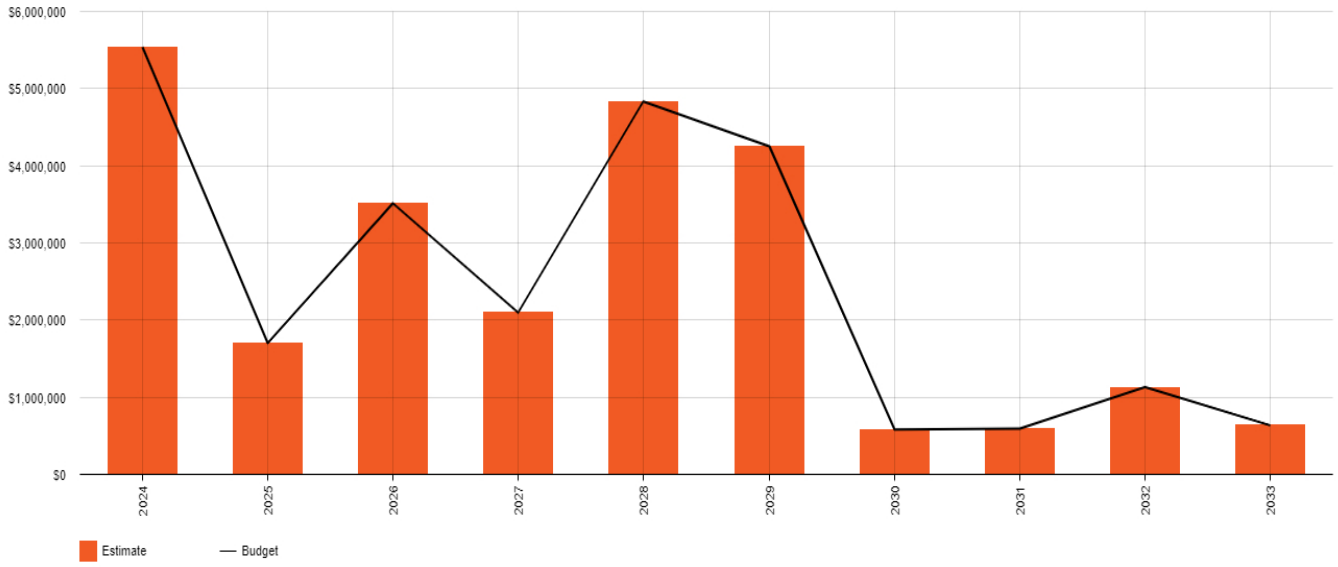


Figure 5.13 - Acquisition (Constructed) Summary Wastewater

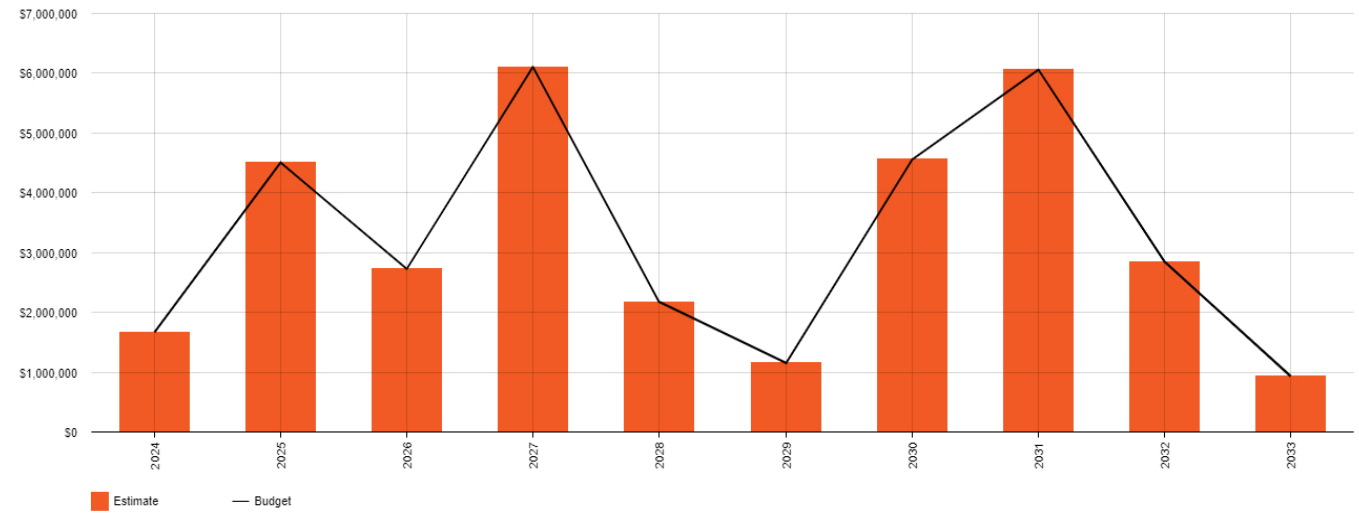
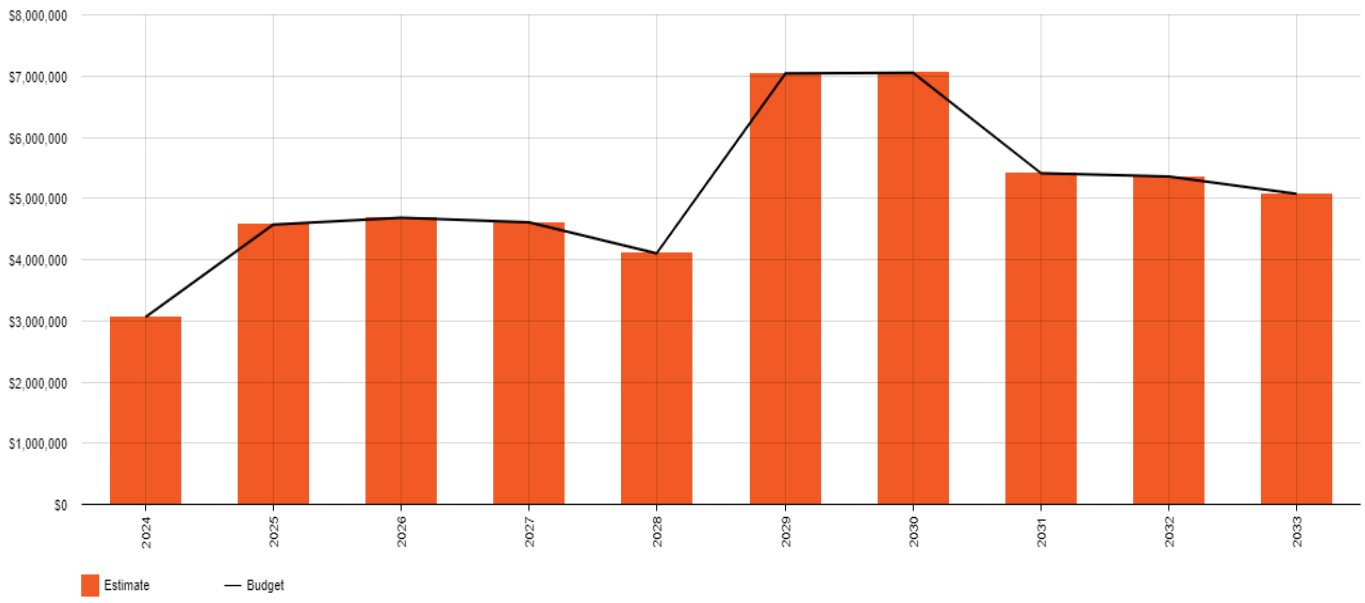


Figure 5.14 - Acquisition (Constructed) Summary Stormwater



(All figure values are shown in 2023 dollars.)

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance, and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figures 5.15-5.17.

Figure 5.15 - Acquisition Summary Water Supply

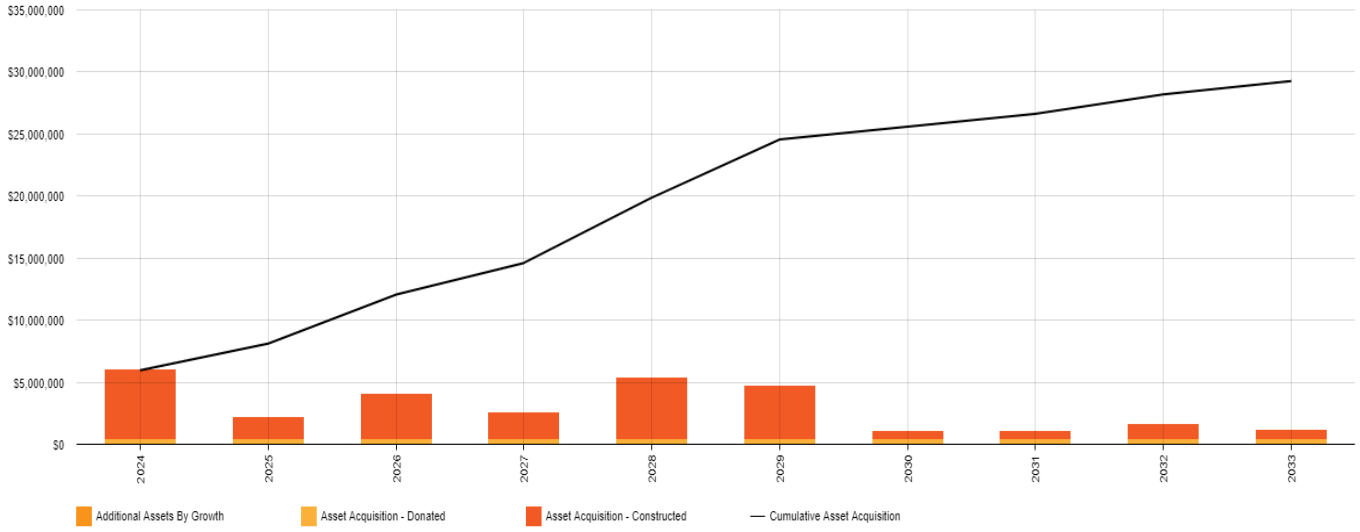


Figure 5.16 - Acquisition Summary Wastewater

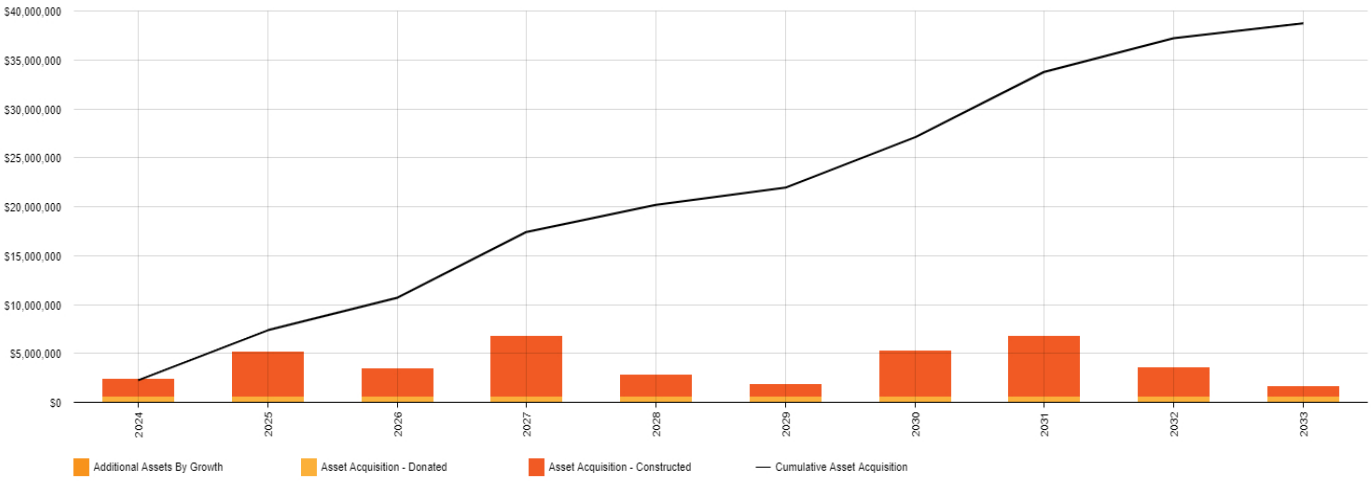
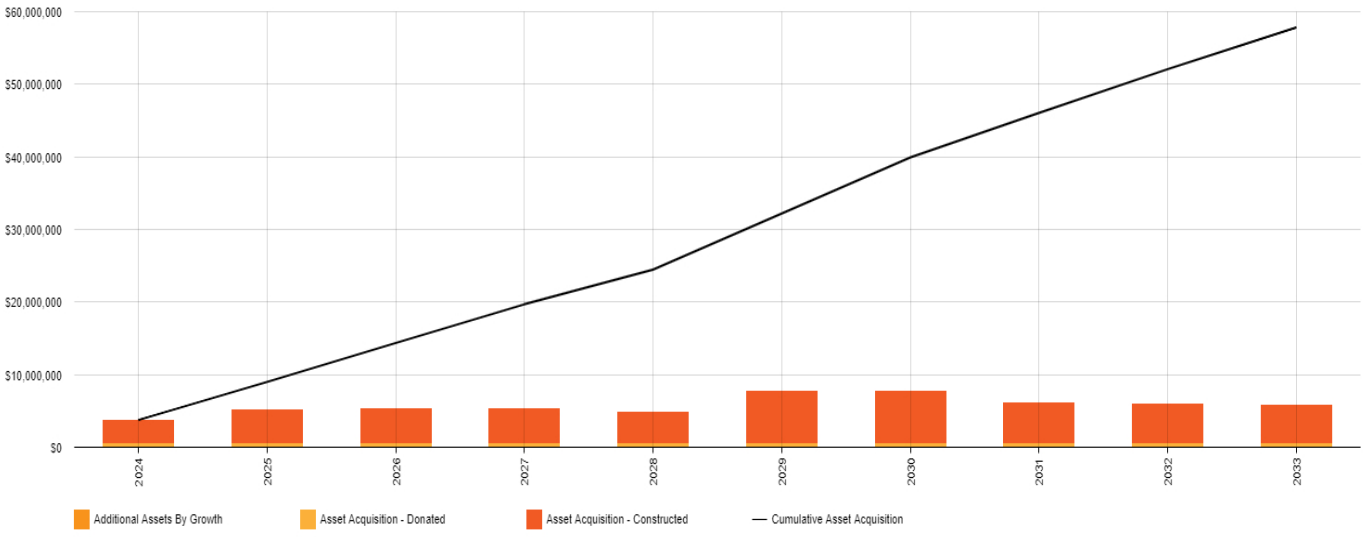


Figure 5.17 - Acquisition Summary Stormwater



(All figure values are shown in 2023/24 dollars.)

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

Forecast acquisitions are predominantly acquired from new works required for improvements or growth of urban residential and industrial areas.

The new works identified in the forward works programme are the enhanced treatment of wastewater, new water treatment at the Stanway/Halcombe rural water supply and the Himatangi beach water supply, and the urban flood projection works.

Growth works identified in the forward works programme are localised in precinct 4 for residential growth and precinct 5 for industrial growth.

These projects have been balanced within the forward works programme taking into account developer needs budget constraints.

In acquiring these new assets we will commit the funding of ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required.

5.7 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 5.6 - Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Almadale Water Treatment Plant	End of useful life	Following the commissioning of the Feilding Water Supply Strategy works	Undetermined	Undetermined
Sanson wastewater oxidation ponds	Wastewater Centralisation	2026/27	$250,000	$182,013
Rongotea wastewater	Wastewater Centralisation	2027/28	$250,000	$203,599
Halcombe Oxidation pond	Wastewater Centralisation	2030/31	$196,320	$152,032

5.8 Summary of Asset Forecast Costs

The financial projections from this asset plan are shown in Figure 5.18-5.20 These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the lifecycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.18 - Lifecycle Summary Water Supply

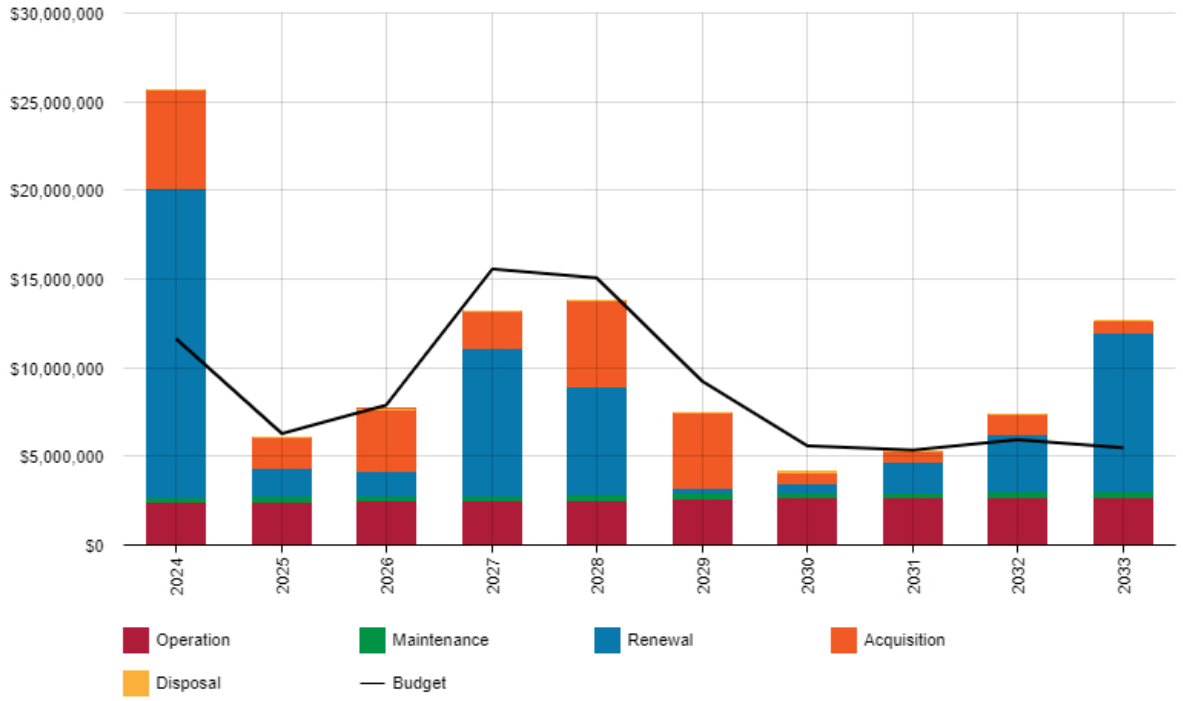


Figure 5.19 - Lifecycle Summary Wastewater

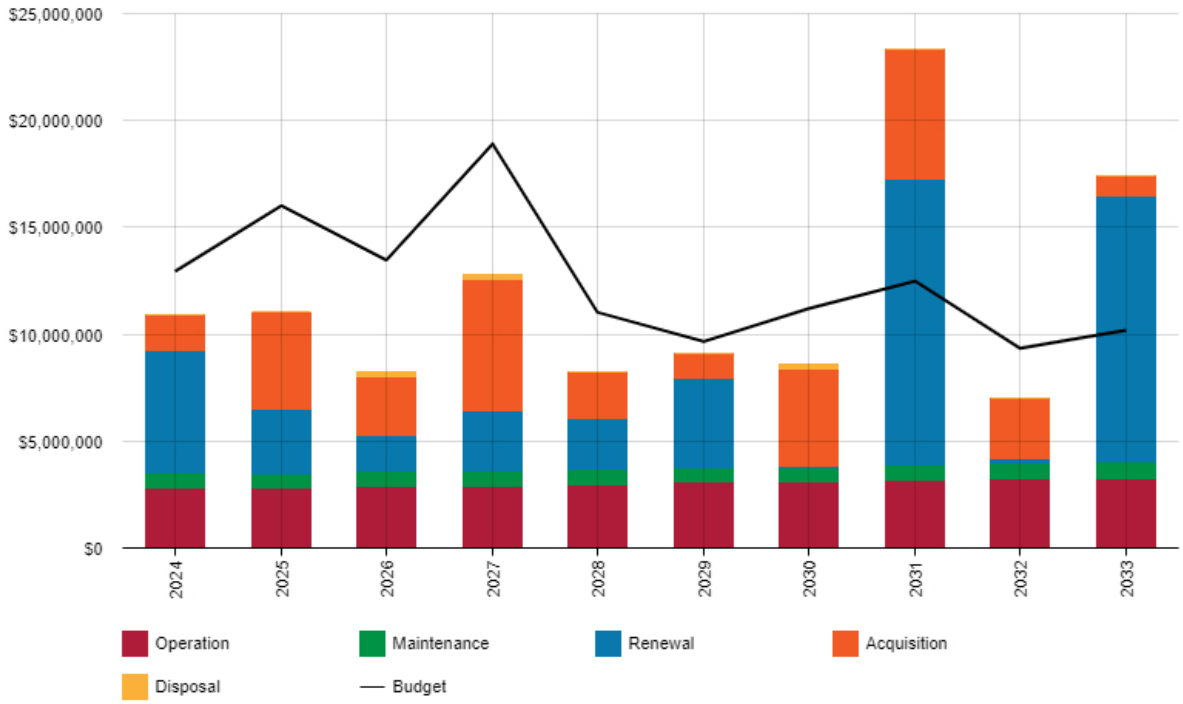
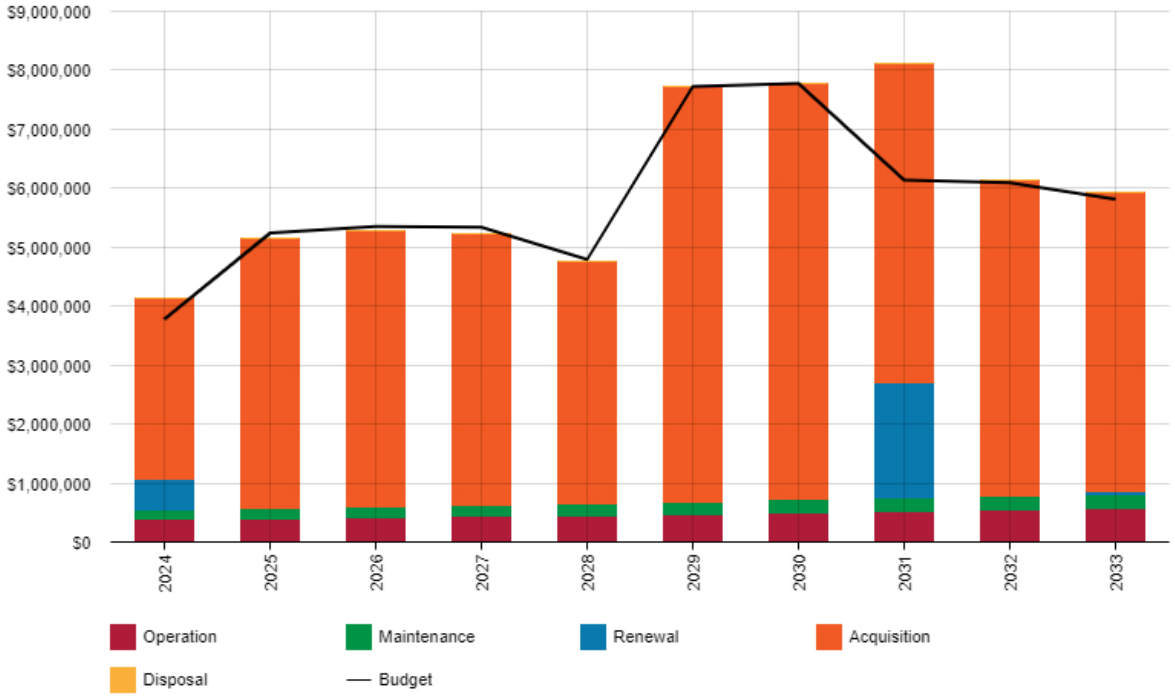


Figure 5.20 - Lifecycle Summary Stormwater



(All figure values are shown in 2023/24 dollars).

The lifecycle summary shows how the proposed budget aligns with the forecasted acquisition, operation, maintenance, renewal and disposal needs of the entity.

Water supply and wastewater show peaks of budget allocations before the lifecycle forecast requirement. This is due to the renewals programme which has identified the need to replace asbestos water and wastewater pipeline before the calculated renewal date. This replacement shows the pragmatic approach by Council to commit to replacement of these failing and hazardous lines before any loss to service is experienced.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[8].

An assessment of risks[9] associated with service delivery will identify risks that will result in a loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

The Council faces a range of business risks inherent in the functions of being a local authority. The Council's objective is to integrate risk management practices and procedures that are targeted to and appropriate for Council's strategic and operational goals, and business functions. The Council evaluates risk at the corporate and activity level. Once the risk cost is known, the organisation can then evaluate the risk reduction opportunities available. Risk treatments are the management practices and processes to eliminate the probability and/or lessen the consequences of the risk event.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption. By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

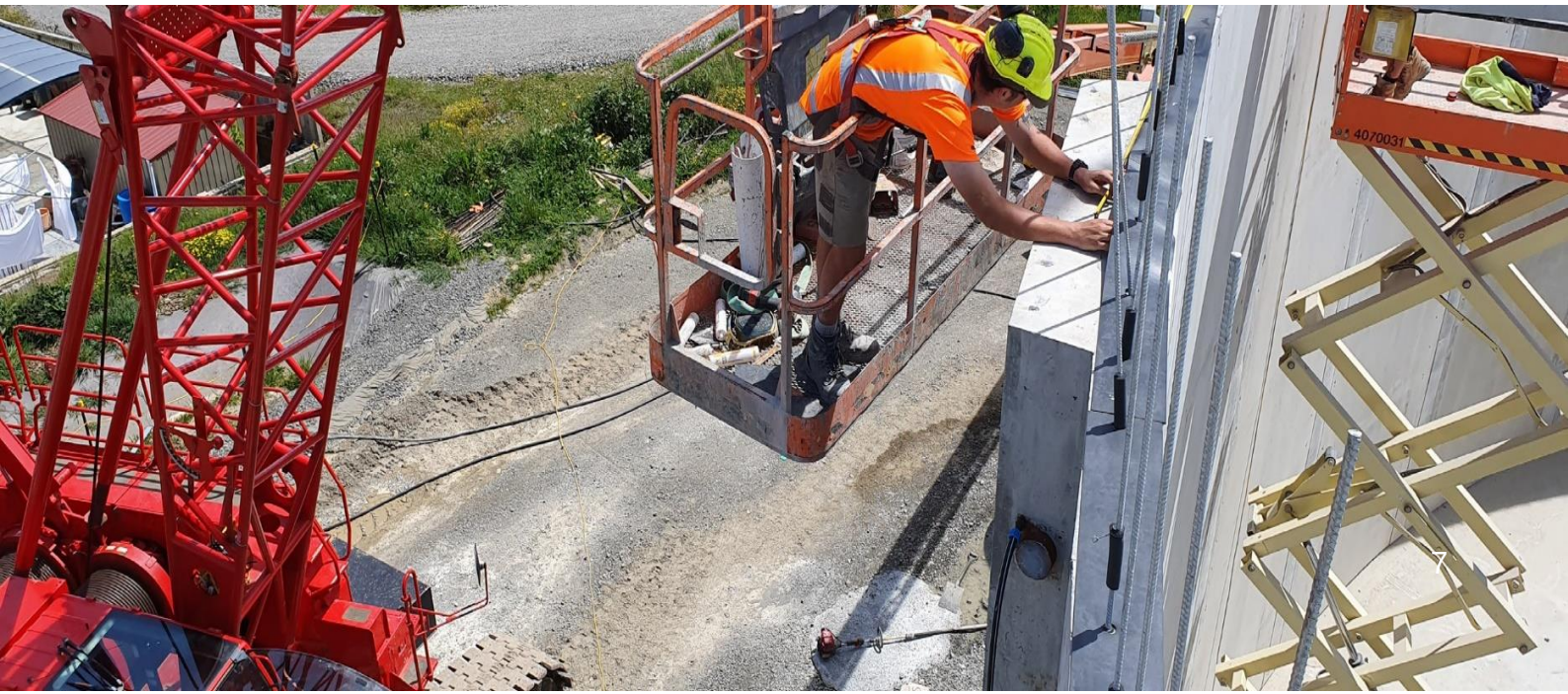


Table 6.1 Critical Assets

Wastewater critical assets

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
District Wide Wastewater Treatment Plants	Process train or operational failure causes large volumes of partly treated sewage to be discharged into the environment. Process train or operational failure causes a major consent compliance breach.	Reactive operational procedures	Low	The areas where the risk control can be improved are as follows: • Develop a calibrated inflow rainfall response curve based on valid data and rainfall measurement closer to the centre of the catchment so that any hydraulic capacity upgrades are designed to a robust flow estimate. The impact of I-I control can also be monitored • Identify the hydraulic constraints at the WWTP and develop a plan to manage these in high flow events. An added investment in I-I reduction, particularly inflow management, is an investment in hydraulic capacity. • Progressively make the WWTP more seismically resistant • Develop a list of potential plant failures and a response to each one. Develop and report on a formal programme of managing each of the identified failure modes.
District Wide Sewage pump stations	Pump stations overflow and large volumes of untreated sewage are discharged into the environment, or the discharge creates an immediate public health risk. Some pump stations do not meet the requirements of the Engineering Standards (e.g., no standby pump, wrong pump selection, insufficient capacity, storage requirements inadequate).	Reactive operational procedures	Low	• Ongoing land development, and the need to avoid overflows has resulted in some pump stations being undersized when compared to our current standards. • Investigate and confirm which pump stations are inadequate • Develop a programme of upgrades to be included in the LTP • Develop and report on a formal programme of pump station inspection, cleaning, and maintenance

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
Kimbolton Road to Kawakawa Road to MWWTP trunk main Awahuri-Feilding Road to Kawakawa Road trunk main	Pipes cannot contain flows and large volumes of untreated sewage are discharged into the environment or the discharge creates an immediate public health risk. Critical failure modes are: • Liquefaction of soils in a major seismic event • Overflows caused by build-up of sediment in the pipes due to infrequent inspection and maintenance	Flow monitoring undertaken in 2019. Complaints register. Programme of work for trunk mains upgrades for growth has been developed.	Medium	• Confirm from knowledge of soil types if and where liquefaction is likely (or not) to impact on sewers identified. • All the sewers identified require a one-off clean to remove sediment and to enable a CCTV inspection to take place. • Develop and report on a formal programme of sewer inspection and cleaning based on the CCTV inspection. • Prioritise and estimate timing of growth upgrades based on analysis of flow monitoring undertaken in 2019. Confirm when further flow monitoring is required.
Pressure sewer systems at Mt Taylor and Himatangi	General system failure due to structural asset fault causing many pump stations or the discharge system to fall in a short period of time and require significant levels of maintenance or replacement. This is due to variations in the types of pump ownership, power charge regimes, and the different types of operations regimes. There is also a significant risk of downstream effects in particular H2S impacts on the downstream reticulation and treatment systems due to long retention times of untreated sewage within the system.	Reactive operational procedures.	Low	• The differing approached to the management of pressure sewer systems need to be examined to determine a common approach going forward. • The risks around aged sewage should be examined in details and responses to managing this determined
Centralisation pipeline and pumping stations	Pipes cannot contain flows and large volumes of untreated sewage are discharged into the environment or the discharge creates an immediate public health risk.	Reactive operational procedures		

Water critical assets

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
SCADA system	System failure as a result of a power outage caused by a lightning strike or network failure. This in turn leads to Drinking Water Standards non-compliance due to gaps in available records.	Reactive operational procedures.	Low	This is a common issue. Suggested solutions include: • Uninterrupted Power Supplies (UPS) at all times • Lightning rods at all sites • Solar power plus storage at all sites
Firefighting network	The water network cannot meet the requirements of the 'SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice'. Therefore, in the event of a fire in the CBD and industrial zones the risk of a fire becoming uncontrolled is higher than necessary.	Existing network capacity and hydrant testing.	Medium	As requirements for firefighting have increased, and land rezoned, our networks have been upgraded as renewals take place. This has left a lag to be caught up. Extra storage for firefighting has been acquired at MacDonald Heights. A model to determine the sizing and timing of the network has been commissioned. Funding for this work is part of the Feilding Water Strategy programme of works.
District Wide Treatment	The Campbell Road Bore is the critical water source as the volume of water produced by this bore cannot be reliably replaced by the existing other sources for Feilding at present.	Reactive operational procedures.	Medium	The Campbell Road bore has produced water for 15 years with no apparent signs of failure risk. A third bore for Feilding is in the current stages of procurement. This bore, in conjunction with the Newbury Line bore, requires a minimum capacity to match the capacity of the Campbell Road Bore. If sufficient capacity cannot be obtained a further water source will be required. Leakage reduction and demand management techniques may also reduce this risk. A programme to reduce leakage is the first step. The only other reliable technique to reduce demand for a prolonged period is universal metering. This is not thought to be required at this point in time.

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
Campbell Road to Kimbolton Road trunk main	If this trunk main fails, the supply to Feilding cannot be maintained for any length of time. This is due to the dominant role of the Campbell Road Bore in Feilding's water supply. Critical failure modes are: • Failure due to ground movement • Failure at culvert crossings • Failure on Aorangi Bridge	Reactive operational procedures. Seismic resilience report.	High	The resilience report contained the following recommendations: • Confirm that parts for repair can be readily obtained in a case of a breakage • Replace 'bellows' on Aorangi Bridge • Provide second water supply pipelines to maintain flows to all areas at all times • A model to determine the sizing and timing of the network has been commissioned • Funding for this work is part of the Feilding Water Strategy programme of works

Stormwater critical assets

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
Duke Street Culvert	The culvert has insufficient capacity to discharge calculated flows in the 1% AEP rainfall event. Note the critical event is a catchment wide rainfall event not a Feilding wide or Precinct 4 wide event. Flows are currently managed by the Reids Line floodgates. Release of too much flow will cause inundation and property damage upstream of the culvert. Note failure of the floodgates to operate in a timely fashion will also result in inundation and property damage downstream of the culvert as evidenced previously.	Reliance on Horizons Regional Council to operate flood gates in a timely fashion and at the right trigger flow.	Low	Horizons Regional Council are currently constrained financially to carry out their plan to automate the floodgates, purchase the land on which the floodway lies, and improve the floodway. Consideration needs to be given to diverting funding currently directed towards stormwater capital expenditure to assist Horizons to advance their plan.

Critical asset description		Effectiveness of Controls		Analysis and evaluation
Critical Asset	**Failure mode(s)**	**Current controls(s)**	**Control rating**	
Inadequate stormwater systems	Undersized primary and secondary stormwater systems in some catchments will result in inundation and property damage in the 1% AEP rainfall event.	Catchments have been identified and a programme of works commenced.	Medium	Works are currently prioritised to meet growth, hydraulic neutrality, and political requirements. Consideration of the cost of property damage and post-event political requirements need to be factored into decision making and communicated to the affected communities and property owners. Resource availability is a key issue in delivering projects to deliver solutions in a timely manner.
Stormwater outlets where discharges could cause environmental harm	Contaminated stormwater is discharged to receiving waters without adequate controls.	Working with dischargers where identified. Compliance monitoring indicates at-risk catchments and outlets.	Medium	This is an issue that is becoming more prominent for environmental and cultural reasons. The risk of environmental harm can be estimated by permitted activity in a catchment and by known activities. The appropriate ‘Best Management Practice” (BMP) solution can then be identified and implemented.

6.2 Risk Assessment

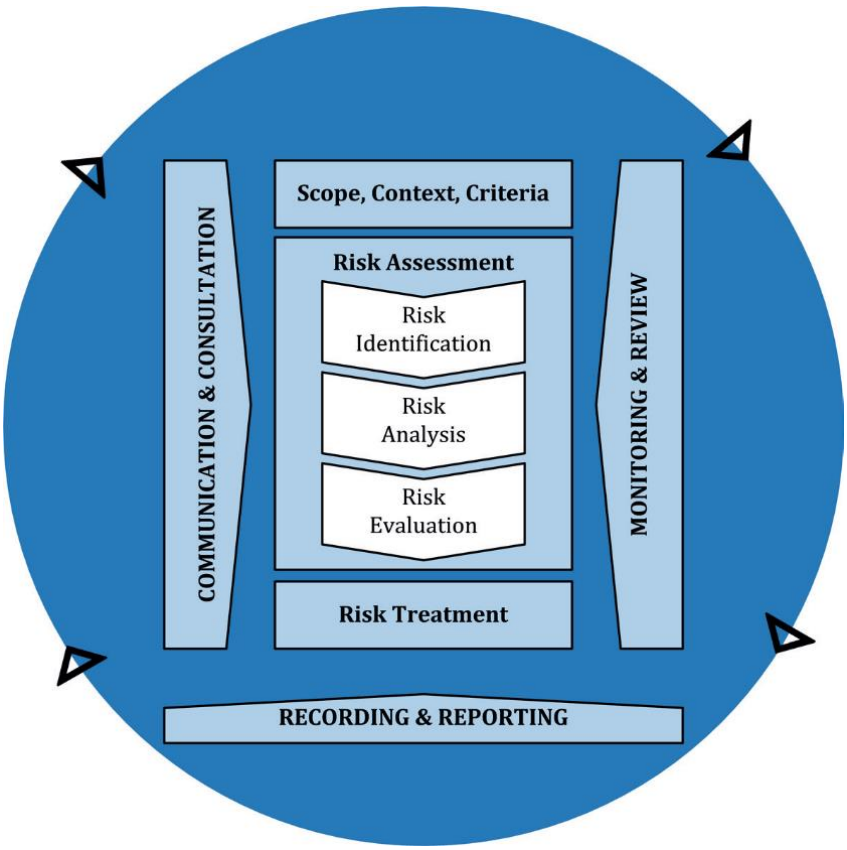
The risk management process used is shown in Figure 6.1 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

Fig 6.1 Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9



The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks[10] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Risk Management section of the Three Waters Asset Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.4. It is essential that these critical risks and costs are reported to management and the Manawatū District Council Councilors.

Table 6.2 Risk analysis matrix - Key

Likelihood guide	Likelihood of occurrence			Risk severity rating level				
Is expected to occur in most circumstances	Every year or more	Almost certain	5	Guarded (5)	Moderate (10)	High (20)	Extreme (40)	Extreme (80)
Will probably occur in most circumstances	Every 3 years	Likely	4	Guarded (4)	Moderate (8)	High (16)	Extreme (32)	Extreme (64)
Might occur at some time	Every 10+ years	Possible	3	Low (3)	Guarded (6)	Moderate (12)	High (24)	Extreme (48)
Could occur at some time	Every 30+ years	Unlikely	2	Low (2)	Guarded (4)	Moderate (8)	High (16)	Extreme (32)
May occur only in exceptional circumstances	Every 100+ years	Rare	1	Low (1)	Low (2)	Guarded (4)	Moderate (8)	High (16)
				1	2	3	4	5
			Risk impact	**Minor**	**Moderate**	**Major**	**Severe**	**Worst Case**

Table 6.3 Risk level description - Key

Risk level	Description
Low	These risks will not be a priority for treatment and in some cases, it may be acceptable for no treatment action to be taken. However, the status of these risks should still be reviewed periodically to ensure no changes which would result in the risk increasing
Guarded	Treatment when resources are available. The risk should be able to be managed via existing controls and normal operating procedures
Moderate	This level of risk should not automatically be accepted for risk mitigation but rather a cost-benefit analysis is required to determine if treatment is necessary
High	Action plans and sources required. The level of risk is likely to endanger capability and should be reduced through mitigation where possible.
Extreme	Requires ongoing executive level oversight. The level of risk warrants that all possible mitigation measures be analysed in order to bring about a reduction in exposure.

Table 6.4: Risk Registers

District Wide – Three waters

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District WW & SW	Failure to deliver renewals programme Insufficient funds Insufficient resources	Operational Financial Compliance Health & Safety	8	5	E	Ensure qualified and experienced staff are hired Maintain sufficient staffing levels, propose realistic programme	8	3	H
District 3W	Failure to deliver upgrade programme Insufficient funds Insufficient resources	Operational Financial Compliance Health & Safety	8	5	E	Ensure qualified and experienced staff are hired Maintain sufficient staffing levels, propose realistic programme	8	3	H
District WW & WS	Consent conditions not met	Compliance Environmental Financial Reputation	16	5	E	Monitoring of performance; maintenance; capital works	4	2	M
District SW						Work with premises to manage flows and quality	8	2	H
District 3W	Lack of easements causing access issues	Operational	4	3	M	Proactively use key easements are in place Use Public Works Act if necessary	4	2	M

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District WW & WS	Volcanic ash fall with potential damage to intakes, pipelines, pumps, plant equipment and vehicles could lead to loss of service. Potential impacts on treatment, especially microbiological	Compliance Operational Environmental Financial Health & Safety Reputation	8	1	M	Ensure all water surfaces covered Shield sensitive equipment Shut down exposed equipment in event of ash fall	2	1	L

Wastewater Risk Register

Service or Asset at Risk	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Failure of mains on private property	Compliance Operational Environmental Financial Health & Safety Reputation	4	2	M	Proactive condition assessment and asset renewal Relocate assets off private property where feasible Enforce building and bylaw controls	4	1	G
District	Pump station overflows	Compliance Operational Environmental Financial Health & Safety Reputation	2	3	G	Reduce I&I Maintain and replace assets as required Monitor flows	2	2	G

Service or Asset at Risk	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Odour issues detected outside site boundary	Compliance Operational Environmental Reputation	8	2	H	Manage trade wastes Install and maintain appropriate treatment, or find alternative	8	1	M
District	Loss of electricity supply	Operational	4	4	H	Use on-site standby generator(s)	2	4	M
District	Systems cannot cope with increased flows from development	Compliance Operational Financial Reputation	4	2	M	Plan for development; secure additional sources Manage demand	2	2	G
District	Inability to meet response time targets	Compliance Operational Reputational	1	4	G	Ensure adequate staffing levels Manage risks to staff such as pandemics, anticipating and managing after hours events.	1	3	L
Feilding	Liquefaction from seismic event	Compliance Operational Environmental Financial Health & Safety Reputation	8	1	M	Locate assets out of high-risk areas where possible Ensure adequate foundations for structures in high-risk areas	8	1	M
Feilding	Failure of river crossing	Compliance Operational Environmental Financial Health & Safety Reputation	4	2	M	Proactive assessment, maintenance and renewal Liaison with Horizons and landowners to keep debris clear	4	1	G
Feilding & Sanson	Mains failure under railway line	Operational Financial Compliance	4	2	M	Use directional drilling Proactive leak detection and renewals	2	1	L

Service or Asset at Risk	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
Awahuri	Failure of mains under SH3	Compliance Operational Financial Health & safety Reputation	4	2	M	Proactive condition assessment and asset renewal Relocate assets off highway where feasible Work with NZRA to minimise risk of breakage	4	1	G
Sanson	Failure of mains under SH1						8	1	
Awahuri	Damage caused by flooding	Compliance Operational Environmental Financial Health & Safety Reputation	8	2	H	Build resilience into assets to reduce likelihood of damage being caused	8	1	M
Sanson							2	1	M
Feilding							8	1	G

Stormwater risk register

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Damage to roads from mains failures	Operational Financial Reputation Compliance	2	5	M	Proactive condition assessment; prioritisation of renewals in roads	2	4	M
District	Failure of mains on private property	Compliance Operational Environmental Financial Health & Safety Reputation	4	2	M	Proactive condition assessment and asset renewal Relocate assets off private property where feasible Enforce building and bylaw controls	4	1	G

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Systems cannot cope with increased flows from development	Compliance Operational Financial Reputation	4	2	M	Plan for development; secure additional sources Manage demand	2	2	G
District	Inability to meet response time targets	Compliance Operational Reputation	1	4	G	Ensure adequate staffing levels Manage risks to staff such as pandemics	1	3	L
Feilding	Mains failure under railway line	Operational Compliance Financial	4	2	M	Use directional drilling Relocate where possible	2	1	L
Sanson	Failure of mains under SH1	Compliance Operational Financial Health & Safety Reputation	4	2	M	Proactive condition assessment and asset renewal Relocate assets off highway Work with NZTA to minimise risk of breakage	4	1	G

Water supply risk register

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Loss of water supply for more than 8 hours to multiple properties	Operational Financial Health & Safety Reputation	4	5	H	Maintain register of key consumers e.g., dialysis patients, major industries, schools, medical, dental, rest homes, relevant commercial premises Minimum 1 day storage in reservoirs Council and contractors hold spares of key components Rural water supplies require consumers have on-site storage	2	3	G

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Poor water quality	Compliance Operational Financial Health & Safety Reputation	8	3	H	Maintain register of key consumers e.g. dialysis patients, major industries, schools, medical, dental, rest homes, relevant commercial premises	8	1	M
District	Leaks in roads	Operational Financial Reputation Compliance	2	5	M	Proactive leak detection; prioritisation of renewals in roads	2	4	M
District	Failure of AC mains	Operational Compliance	2	5	M	Pressure management Renewals programme	2	4	M
District	Reservoir failure Seismic event	Operational Financial	8	2	H	Feed reticulation directly Assess seismic strength	8	1	M
District	Trunk main failure Burst Flood damage	Operational Compliance Financial	8	2	H	Proactive leak detection and asset renewals	8	1	M
District	Poor water quality at dead ends in reticulation	Compliance Operational Health & Safety Reputation	4	4	H	Flushing programme Loop mains Backflow prevention	4	3	M
District	Reticulation failure High pressure	Operational Financial Compliance	4	5	H	Proactive leak detection and asset renewals	2	4	M
District	Loss of electricity supply	Operational	4	4	H	Use on-site standby generators	2	4	M

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
District	Insufficient water supply for firefighting	Operational Financial Health & Safety Reputation	8	2	H	Test hydrant pressure and flow Liaise with FENZ Programme improvements where need identified Upgrade Sanson reticulation	4	2	M
District	Inability to meet response time targets	Compliance Operational Reputation	1	4	G	Ensure adequate staffing levels Manage risks to staff such as pandemics	1	3	L
District	Demand for water exceeds supply	Compliance Operational Financial Reputation	4	2	M	Plan for development secure additional sources Manage demand	2	2	G
District	Intake damaged Flooding Liquefaction	Operational Financial	8	2	H	Inspect regularly and communicate with Horizons about condition of river, particularly aggradation	8	1	M
District	Rising main failure	Operational Compliance Financial	8	2	H	Proactive leak detection and asset renewals	8	1	M
District	Damage to bores Seismic events Flooding Liquefaction	Operational Financial	8	2	H	Ensure casings meet specifications; ensure any bore can be used for supply	8	1	M
Feilding	Clarifier failure Seismic event Structural failure	Compliance Operational Financial Health & Safety	8	2	M	Get clarifier inspected Programme renewal	8	1	M

Location	Risk	Risk types	Gross risk			Management	Net Risk		
			Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
Feilding, Sanson & Stanway-Halcombe	Flood damage Damage to or destruction of plants, pumps, pipelines and reservoirs could lead to loss of supply	Compliance Operational Environmental Financial Health & Safety Reputation	8	2	H	Provide enhanced flood protection of key assets Ensure alternative options available, located out of flood zone	2	2	G
Feilding & Waituna West	River crossing failure	Operational Compliance Financial	8	2	H	Crossing is above flood level	8	1	M
Feilding & Stanway Halcombe	Mains failure under railway line	Operational Financial Compliance	4	2	M	Use directional drilling Proactive detection and renewals	2	1	L
Sanson	Failure of mains under SH1	Compliance Operational Financial Health & Safety Reputation	4	2	M	Proactive condition assessment and asset renewal Relocate assets off highway where feasible Work with NZTA to minimise risk of breakage	4	1	M
Stanway-Halcombe	Scheme becomes uneconomic to operate Decline in demand	Financial Health & Safety Reputation	8	1	M	Manage costs Harmonise rates across district	8	1	M
Waituna West			8	1	H		8	1	
Waituna West & Stanway-Halcombe	Break down in relationship between council and committee	Operational Compliance Reputation	8	3	H	Regular attendance at meetings, good customer service and prompt resolution of issues	8	2	M

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

Resilience recovery planning, financial capacity, climate change risk assessment and crisis leadership.

Our current measure of resilience is shown in Table 6.5 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.5 - Resilience Assessment

Threat / Hazard	Assessment Method	Current Resilience Approach
Earthquake	Impact on individual critical assets	Medium
Flood	Impact on individual critical assets	Medium
Extreme weather event	Impact on individual critical assets	Medium

Assets assessed in our resilience approach are:

Earthquake critical assets:

- Large sewers on liquifiable soil
- Treatment plant process components
- Pipe on rail crossings and bridges
- Intake structures on riverbanks
- Containment structures (reservoirs and tanks)

Flood:

- Large pipelines adjacent to river and stream banks
- Reids line diversion structure (flood gates)
- Other assets in flood plains such as water intakes

Extreme weather events:

- Assets vulnerable to high wind and snow events e.g., power lines and road closures

We do not currently measure our resilience in service delivery, however we have plans in place to mitigate the effects of extreme events. This will be included in future iterations of the AMP.

Mitigation to extreme events:

- Barrows Road water intake will become redundant once new bore in Feilding is commissioned
- Improvement works to make water main crossing of Aorangi Bridge more flexible identified
- Rail and stream crossings identified and inspected according to risk
- back up generation installed at key infrastructure sites
- Stanway Halcombe water intake to be replaced

- Horizons planning to upgrade Reids Line spillway
- List of stormwater improvements in Feilding identified and included in Forward Works Programme

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AMP are based on the objective to achieve the optimum benefits from the available resources.

What we cannot do

There are some capital projects that are unable to be undertaken within the next 10 years. These include:

- Precinct 4 growth:
  - Arnott Street stage 2
  - Reid Line West – Norfolk to Arnott
  - Reid Line West – Pharazyn to Arnott
  - Reid Line West – Pharazyn to Makino
  - Roots Street – Echo to Turoa
  - Wastewater trunk main upgrades
  - Wastewater centralisation Cheltenham
  - Wastewater centralisation Kimbolton

Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users.

There are no operations and maintenance service trade offs anticipated within this long term plan.

A service trade off for acquisition is applicable to Council's growth projects, some of which have been delayed outside of the 10 year planning period of the Long Term Plan due to affordability challenges and growth forecasts. This trade off is not anticipated to create service consequences to current levels of service as development in growth precincts is dependent on infrastructure servicing to progress.

For renewal, there is a service trade-off within the Long Term Plan as a consequence of the wastewater centralisation stages from Cheltenham and Kimbolton to the Manawatū Wastewater Treatment Plant being delayed outside of the 10 year planning period due to affordability challenges. To mitigate the risk of reducing levels of service, Council have budgeted within Year 6 of the Long Term Plan to address the renewal of the resource consent required to operate the facilities and will continue to operate and maintain the sites until such time as they are no longer online.

7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Sustainability and Projections

Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AMP for this service area. The two indicators are the:

- Asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- Medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[11]

Water Supply:	72%
Wastewater:	125%
Stormwater:	61%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years, the percentage of funds we expect to have available for the optimal renewal of assets.

The forecast renewal works along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10-year financial planning period

This AMP identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is on average per year:

Water Supply:	$7,821,332
Wastewater:	$8,324,701
Stormwater:	$927,863

The proposed annual (budget) for operations, maintenance and renewal funding is:

Water Supply:	$6,237,244
Wastewater:	$9,195,740
Stormwater:	$708,170

[11] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

This shows an annual 10 year funding shortfall of:

Water Supply:	$1,584,088
Wastewater:	$-871,039
Stormwater:	$219,693

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AMP and ideally over the 10 year life of the Long-Term Financial Plan.

Forecast Costs (outlays) for the long-term financial plan

Table 7.1 shows the forecast costs (outlays) required for consideration in the 10 year long-term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the AMP (including possible revision of the long-term financial plan).

We will manage the 'gap' by developing this AMP to provide guidance on future service levels and resources required to provide these services in consultation with the community.

Forecast costs are shown in 2023/24 financial year dollar values.

Table 7.1 - Forecast Costs (Outlays) for the Long-Term Financial Plan

Water Supply

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	5,535,964	2,392,245	274,862	17,436,984	10,000
2025	1,702,586	2,458,563	282,629	1,604,648	0
2026	3,514,146	2,472,331	285,413	1,369,922	0
2027	2,098,020	2,516,207	290,551	8,291,093	0
2028	4,833,063	2,544,363	293,849	6,084,987	0
2029	4,251,840	2,610,879	299,040	266,351	0
2030	579,800	2,662,820	305,138	498,328	50,000
2031	593,710	2,674,124	306,462	1,723,421	0
2032	1,130,263	2,685,583	307,804	3,287,664	0
2033	635,477	2,702,998	309,843	8,974,224	0

Wastewater

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	1,659,887	2,851,919	656,572	5,713,178	0
2025	4,507,382	2,830,405	663,359	3,021,995	0
2026	2,727,965	2,912,578	667,688	1,707,900	250,000
2027	6,105,922	2,912,731	677,679	2,849,010	250,000
2028	2,176,533	2,996,135	697,804	2,392,346	0
2029	1,152,167	3,082,063	705,476	4,159,304	0
2030	4,558,090	3,082,798	710,739	45,431	196,320
2031	6,059,659	3,150,400	726,221	13,407,983	0
2032	2,847,829	3,237,673	746,207	180,941	0
2033	933,560	3,282,871	756,557	12,421,053	0

Stormwater

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	3,060,068	379,791	169,300	525,784	0
2025	4,572,611	392,908	174,921	0	0
2026	4,683,851	411,318	182,811	0	0
2027	4,609,677	430,118	190,868	0	0
2028	4,102,721	448,658	198,814	0	0
2029	7,042,169	471,824	206,000	0	0
2030	7,052,746	498,877	217,594	8,222	0
2031	5,411,325	525,968	229,204	1,967,208	0
2032	5,357,739	547,314	238,353	0	0
2033	5,074,721	568,472	247,420	46,872	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Entity's budget and Long Term financial plan.

The financial strategy of the entity determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset valuations

The best available estimate of the value of the three waters assets included in this AMP are shown below. The assets are valued at the cost of constructing a new asset or modern equivalent asset (MEA) using present day technology, and maintaining the original service potential:

Replacement cost (Current/Gross)	$511,348,408
Depreciable Amount	$207,716,491
Depreciated Replacement Cost	$303,631,917
Depreciation	$6,458,718

Valuation forecast

Asset values are forecast to increase as additional assets are added to service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on an A - E level scale[12] in accordance with Table 7.2.

Table 7.2 - Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The asset register has known data completeness and integrity limitations, which include (but are not limited to):

Issue	Comment
Missing or inadequately classified treatment plant components	Water and wastewater treatment plant assets are recorded at component level with unit rates and TUL's depending on the component. It is a known issue that some treatment plant assets are recorded in the wrong community and some items of plant are not recorded.
Missing or inadequately classified reticulation assets	While the majority of the reticulation assets (line and point classes) is known to be complete there are occasions where unrecorded assets are found in the field. These records are updated as and when this occurs.
Missing spatial data for schemes other than Feilding	It is a known issue that a number of reticulation assets in the villages in Manawatū lack geospatial information. This primarily affects the reliability of the GIS and has no impact on the valuation.

[12] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Inaccurate attribute age data	Construction date information pre-2000 is understood to have been estimated solely from pipe material information rather than from as-builts or other Council records. Many of the older reticulation assets with missing contract or as bult documents have been given a construction date of 1931. A condition assessment programme is being prepared to inspect and plan for the replacement of the '1931' assets as their condition deteriorates.

The above are recognised limitations, and in some cases action is already being undertaken to address the issues.

The estimated confidence level for and reliability of data used in this AMP is shown in Table 7.3.

Table 7.3 - Data Confidence Assessment for Data used in AMP

Asset Class	Water	Wastewater	Stormwater	Comments
Pipelines	10% A	20% A	10% A	Assets constructed since 2010: High accuracy in terms of quantities, descriptions, location and initial recognition of costs
	80% B	80% B	70% B	Constructed 2000-2010: Good accuracy in terms of quantities, descriptions and location
	10% C		20% C	Constructed pre-2000: Good accuracy in terms of location and quantities but average descriptions
Points	40% A	40% A	20% A	See comments for pipelines above
	60% B	60% B	70% B	
			10% C	
Plant & equipment	20% B	10% B		Since 2010: Average accuracy. Components described at a high level only
	60% C	60% C		2000-2010: Good accuracy. Adequate component descriptions, but initial purchase costs not recorded
	20% D	30% D		Pre 2000: Average accuracy, little supporting documentation
Pump Stations		30% A	60% A	
		60% B	40% B	
		10% C		
Three Waters Overall confidence	B Reliable	C Uncertain	B Reliable	

Data confidence and quality is improving as time passes as all new data is entered (by MDC Staff) and is subject to minimum requirements to ensure adequate asset information is captured.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[13]

Accounting and financial data sources

This AMP utilises accounting and financial data. The source of the data is from Ozone accounting software.

Asset management data sources

This AMP also utilises asset management data. The source of the data is Assetfinda asset management database.

8.2 Improvement Plan

It is important that an entity recognise areas of their AMP and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AMP is shown in Table 8.1 below.

Table 8.1 - Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Asset audit at treatment plants	Asset Management Officer	Staff time	December 2024
2	Develop an Asset Management and Risk Management Policy	Assets and Strategy Teams	Staff time	December 2024
3	Review and identify opportunities for trend monitoring of performance measures	Assets Team	Staff time	December 2024
4	Monitor industry changes and opportunities	Compliance Team	Staff time	On going
5	Review and improve operation and maintenance documentation	Three Waters Technical staff	Staff time	December 2024
6	As built and data validation improvements	Project staff	Staff time	December 2024
7	Develop a condition assessment programme	Assets Team	Staff time	July 2025
8	Software training for asset management staff	Assets Team	Staff time and contractor time	December 2024
9	Update the Asset Management Plan once the 2024-3034 LTP is adopted. This will include (but is not limited to) the following: • Load adopted LTP programmes and budgets into lifecycle models and re-run the NAMS+ modelling • Update lifecycle charts and tables with new model output • Analyse adopted LTP programmes and budgets for impacts on LoS and risk profile and update relevant sections of AMP	Assets and Strategy Teams	Staff Time	September 2024

[13] ISO 55000 Refers to this as the Asset Management System

8.3 Monitoring and Review Procedures

This AMP will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AMP will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AMP has a maximum life of 4 years and is due for complete revision and updating within the 2023/24 financial year.

8.4 Performance Measures

The effectiveness of this AMP can be measured in the following ways:

- The degree to which the required forecast costs identified in this AMP are incorporated into the long-term financial plan,
- The degree to which the 1–5-year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AMP,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles, and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Infrastructure Strategy 2024–2034',
- Long Term Plan 2024-2034 and Budget'.
- Valuation Report: Utilities Assets 1 July 2023

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions

Council plans to construct targeted lead infrastructure to enable growth in Growth Precinct 4 (residential) and Growth Precinct 5 (industrial). A number of these growth works require acquisition of new assets, or upgrades to existing assets.

Future growth projects within the AMP which include asset acquisition are:

- Roots Street East upgrade (Precinct 4)
- New Roads 1B, 02 and 03 (Precinct 4)
- Arnott Street Upgrade (Precinct 4)
- Reids Line West Upgrade (Precinct 4)
- Turners Road Extension Stages 2 and 3 (Precinct 5).
- Wastewater trunk mains located at Russell Street to Railway, South Street to Kawakawa Road, and Denbeigh Street to Kimbolton Road.
- Stormwater attenuation at Roots Street East (Precinct 4 East)
- Stormwater attenuation to the North of Makino Road (Precinct 4 West).

Installation of a dedicated trade waste line to separate industrial wastewater from Feilding will involve acquisition of new assets, including a receiving facility at the Manawatū Wastewater Treatment Plant. For this initiative, asset acquisition is driven by environmental improvements for the Ōroua River.

A further project driven by environmental improvement objectives for the Ōroua River is the Stage 2 wetlands planned for the Manawatū Wastewater Treatment Plant. These wetlands will involve asset acquisition to improve filtering/dissipation of treated wastewater as a final step after the initial treatment and tertiary filtration through the first wetland.

Feilding stormwater improvement works at Makino Road/Poplar Grove, Haybittle Street (Railway Line Stormwater Diversion), Glasgow Terrace/Giesen Road and Sandon Road/West Street will involve asset acquisition of new stormwater assets such as catchpits, kerb and channel, U-drains, attenuation areas, as well as upgrades to existing assets, e.g., upsizing pipeline. This acquisition is driven by the demand that high intensity rainfall events is placing on the stormwater network in Feilding.

Council's work to ensure our Water Treatment Plants meet NZ Drinking Water Standards requires asset acquisition, namely, to achieve water supply continuous source monitoring and fluoridation. This category of asset acquisition also includes the upgrade of the Stanway-Halcombe Rural Water Scheme to achieve protozoa compliance.

Table A1 - Acquisition Forecast Summary

Water Supply

Year	Constructed	Donated
2024	$5,535,964	$438,635
2025	$1,702,586	$438,635
2026	$3,514,146	$438,635
2027	$2,098,020	$438,635
2028	$4,833,063	$438,635
2029	$4,251,840	$438,635
2030	$579,800	$438,635
2031	$593,710	$438,635
2032	$1,130,263	$438,635
2033	$635,477	$438,635

Wastewater

Year	Constructed	Donated
2024	$1,659,887	$602,386
2025	$4,507,382	$602,386
2026	$2,727,965	$602,386
2027	$6,105,922	$602,386
2028	$2,176,533	$602,386
2029	$1,152,167	$602,386
2030	$4,558,090	$602,386
2031	$6,059,659	$602,386
2032	$2,847,829	$602,386
2033	$933,560	$602,386

Stormwater

Year	Constructed	Donated
2024	$3,060,068	$687,482
2025	$4,572,611	$687,482
2026	$4,683,851	$687,482
2027	$4,609,677	$687,482
2028	$4,102,721	$687,482
2029	$7,042,169	$687,482
2030	$7,052,746	$687,482
2031	$5,411,325	$687,482
2032	$5,357,739	$687,482
2033	$5,074,721	$687,482

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions

As new assets are acquired and commissioned, the associated consequential operational cost is factored into the asset's lifecycle cost. This ensures Council has plans in place to operate the asset to the levels of service included in the Long Term Plan. The current forecasted operational budgets within this AMP are considered sufficient to continue providing existing services at current levels for the planning period.

Table B1 - Operation Forecast Summary

Water Supply

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2024	$2,392,245	$61,320	$2,392,245
2025	$2,392,245	$32,652	$2,453,565
2026	$2,382,245	$11,328	$2,476,217
2027	$2,382,245	$72,410	$2,487,545
2028	$2,382,245	$90,250	$2,559,955
2029	$2,390,245	$7,833	$2,658,205
2030	$2,390,121	$9,756	$2,665,914
2031	$2,390,121	$10,866	$2,675,670
2032	$2,390,121	$6,510	$2,686,536
2033	$2,390,121	$6,510	$2,693,045

Wastewater

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2024	$2,851,919	$129,872	$2,851,919
2025	$2,800,769	$85,496	$2,930,641
2026	$2,816,004	$43,995	$3,031,372
2027	$2,772,529	$107,310	$3,031,892
2028	$2,768,054	$89,832	$3,134,727
2029	$2,817,579	$34,812	$3,274,084
2030	$2,795,329	$19,223	$3,286,646
2031	$2,795,329	$23,425	$3,305,868
2032	$2,795,329	$23,259	$3,329,294
2033	$2,795,329	$23,259	$3,352,553

Stormwater

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2024	$379,791	$32,832	$379,791
2025	$379,791	$26,050	$412,623
2026	$379,791	$25,412	$438,673
2027	$379,791	$25,519	$464,085
2028	$379,791	$20,606	$489,605
2029	$386,191	$12,906	$516,611
2030	$386,191	$8,248	$529,517
2031	$386,191	$8,248	$537,765
2032	$386,191	$7,674	$546,012
2033	$386,191	$7,674	$553,687

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions

With the addition of funds included in this planning period for the management of sludge production at the Manawatū Wastewater Treatment Plant, and the consideration of projected maintenance for new acquisitions, the forecasted maintenance budgets are considered sufficient to continue providing existing services at current levels for the planning period.

Consideration has been made for reactive maintenance budgets based on the review of the past 5 years expenditure in these areas.

Table C1 - Maintenance Forecast Summary

Water Supply

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2024	$274,862	$7,182	$274,862
2025	$274,862	$3,824	$282,044
2026	$274,862	$1,327	$285,868
2027	$274,862	$8,481	$287,194
2028	$274,862	$10,570	$295,675
2029	$273,200	$917	$304,583
2030	$273,200	$1,143	$305,500
2031	$273,200	$1,273	$306,643
2032	$273,200	$762	$307,915
2033	$273,200	$762	$308,678

Wastewater

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2024	$656,572	$29,742	$656,572
2025	$656,572	$19,579	$686,313
2026	$645,572	$10,075	$694,893
2027	$645,572	$24,575	$704,968
2028	$645,572	$20,572	$729,543
2029	$644,907	$7,972	$749,450
2030	$644,907	$4,402	$757,422
2031	$644,907	$5,365	$761,824
2032	$644,907	$5,327	$767,189
2033	$644,907	$5,327	$772,515

Stormwater

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2024	$169,300	$14,071	$169,300
2025	$169,300	$11,164	$183,371
2026	$169,300	$10,891	$194,535
2027	$169,300	$10,937	$205,426
2028	$169,300	$8,831	$216,363
2029	$169,300	$5,531	$225,194
2030	$169,300	$3,535	$230,725
2031	$169,300	$3,535	$234,260
2032	$169,300	$3,289	$237,795
2033	$169,300	$3,289	$241,084

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions

Council's asset renewals programme has been developed by an assessment of asset criticality, age and material type. This method, in conjunction with the Asset Valuation Report 2023, has allowed Council to develop a 10-year budget. This budget includes funding within year one to conduct condition assessments on assets identified for optimised targeted renewals.

Table D1 - Renewal Forecast Summary

Water Supply

Year	Renewal Forecast	Renewal Budget
2024	17,436,984	3,194,856
2025	1,604,648	1,650,407
2026	1,369,922	1,460,716
2027	8,291,093	10,801,484
2028	6,084,987	7,569,846
2029	266,351	2,301,407
2030	498,328	2,356,638
2031	1,723,421	2,089,850
2032	3,287,664	2,137,842
2033	8,974,224	2,187,128

Wastewater

Year	Renewal Forecast	Renewal Budget
2024	5,713,178	7,768,003
2025	3,021,995	8,050,627
2026	1,707,900	7,105,514
2027	2,849,010	9,117,909
2028	2,392,346	5,437,216
2029	4,159,304	5,052,379
2030	45,431	3,080,751
2031	13,407,983	2,987,111
2032	180,941	3,055,708
2033	12,421,053	5,819,618

Stormwater

Year	Renewal Forecast	Renewal Budget
2024	$525,784	$167,253
2025	$0	$116,659
2026	$0	$120,152
2027	$0	$181,044
2028	$0	$138,911
2029	$0	$130,052
2030	$8,222	$170,093
2031	$1,967,208	$174,174
2032	$0	$178,174
2033	$46,872	$182,281

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions

Council has planned to continue the programme of work to centralise village wastewater to the Manawatū Wastewater Treatment Plant. The associated disposal of wastewater treatment plant assets located in Sanson, Rongotea, Halcombe, Cheltenham and Kimbolton will be conducted two years after completion of those stages of centralisation. Wastewater centralisation stages for Sanson, Rongotea and Halcombe have been prioritised within the 10 year planning period, with Cheltenham and Kimbolton being delayed beyond year 10. Prioritisation of stages is required to match budget constraints.

The Feilding Water Resilience project encompasses a number of projects to strengthen the resilience of Feilding's water supply, and to enable growth. Once a new groundwater source and treatment plant for Feilding is commissioned, and treatment for the existing Campbell Road and Newbury Bores is upgraded, the Almadale Water Treatment Plant can be decommissioned. This is scheduled for year 7 of the planning period.

Table E1 – Disposal Activity Summary

Water Supply

Year	Disposal Forecast	Disposal Budget
2024	$10,000	$250,000
2025	$0	$263,448
2026	$0	$263,448
2027	$0	$0
2028	$0	$0
2029	$0	$0
2030	$50,000	$0
2031	$0	$0
2032	$0	$0
2033	$0	$0

Wastewater

Year	Disposal Forecast	Disposal Budget
2024	$0	$0
2025	$0	$0
2026	$250,000	$174,470
2027	$250,000	$263,099
2028	$0	$0
2029	$0	$0
2030	$196,320	$125,734
2031	$0	$0
2032	$0	$0
2033	$0	$0

Stormwater

Year	Disposal Forecast	Disposal Budget
2024	$0	$0
2025	$0	$0
2026	$0	$0
2027	$0	$0
2028	$0	$0
2029	$0	$0
2030	$0	$0
2031	$0	$0
2032	$0	$0
2033	$0	$0

Appendix F Budget Summary by Lifecycle Activity

The table below combines all aspects of the asset lifecycle costs from the sections above into one table. This table outlines the total funding required to fully fund asset acquisition, operation, maintenance, renewal, and disposal of the Three Waters Assets.

Table F1 – Budget Summary by Lifecycle Activity

Water Supply

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	5,535,964	2,392,245	274,862	17,436,984	10,000
2025	1,702,586	2,458,563	282,629	1,604,648	0
2026	3,514,146	2,472,331	285,413	1,369,922	0
2027	2,098,020	2,516,207	290,551	8,291,093	0
2028	4,833,063	2,544,363	293,849	6,084,987	0
2029	4,251,840	2,610,879	299,040	266,351	0
2030	579,800	2,662,820	305,138	498,328	50,000
2031	593,710	2,674,124	306,462	1,723,421	0
2032	1,130,263	2,685,583	307,804	3,287,664	0
2033	635,477	2,702,998	309,843	8,974,224	0

Wastewater

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	1,659,887	2,851,919	656,572	5,713,178	0
2025	4,507,382	2,830,405	663,359	3,021,995	0
2026	2,727,965	2,912,578	667,688	1,707,900	250,000
2027	6,105,922	2,912,731	677,679	2,849,010	250,000
2028	2,176,533	2,996,135	697,804	2,392,346	0
2029	1,152,167	3,082,063	705,476	4,159,304	0
2030	4,558,090	3,082,798	710,739	45,431	196,320
2031	6,059,659	3,150,400	726,221	13,407,983	0
2032	2,847,829	3,237,673	746,207	180,941	0
2033	933,560	3,282,871	756,557	12,421,053	0

Stormwater

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2024	3,060,068	379,791	169,300	525,784	0
2025	4,572,611	392,908	174,921	0	0
2026	4,683,851	411,318	182,811	0	0
2027	4,609,677	430,118	190,868	0	0
2028	4,102,721	448,658	198,814	0	0
2029	7,042,169	471,824	206,000	0	0
2030	7,052,746	498,877	217,594	8,222	0
2031	5,411,325	525,968	229,204	1,967,208	0
2032	5,357,739	547,314	238,353	0	0
2033	5,074,721	568,472	247,420	46,872	0