New Plymouth District Council

WASTEWATER

Asset Management Plan

2024 – 2034

Te Kaunihera-ā-Rohe o Ngāmotu
New Plymouth District Council

Contents

Preamble/Foreword

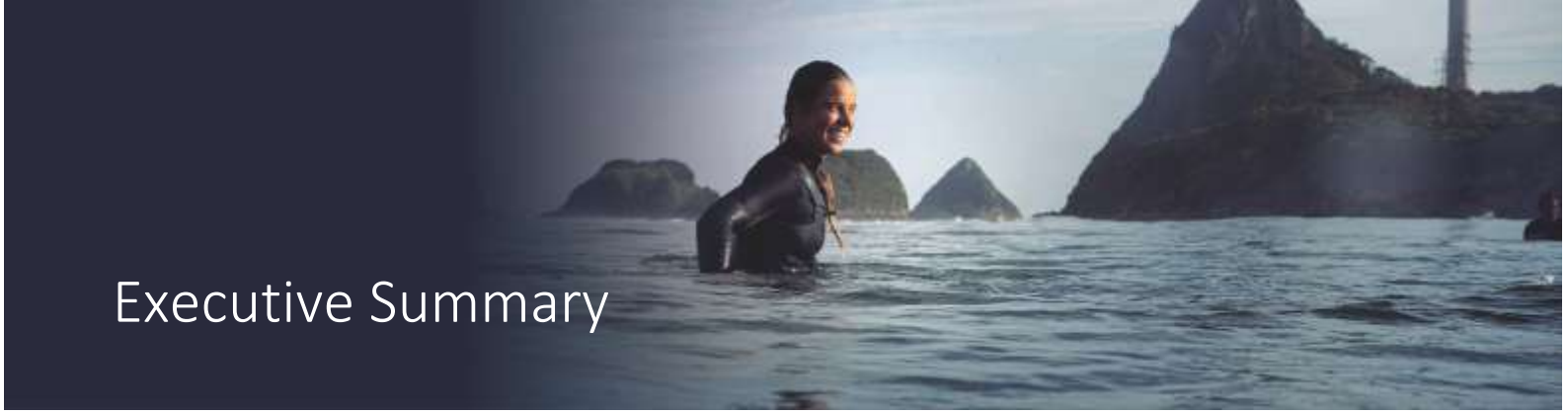
This 2024 Asset Management Plan has been prepared as part of the 2024-2034 Long-Term Plan (LTP) supporting information.

Asset management is considered by New Plymouth District Council to be an essential element of governance for local authorities and allows us as an organisation to take a planned approach towards our service delivery arrangements, levels of service, associated risks and financial forecasts. This Asset Management Plan (AMP) provides clarity to the organisation regarding the level of work required to implement comprehensive and quality lifecycle asset management strategies. This will ensure the delivery of targeted and essential infrastructure to the district and its residents.

The overall intent for this AMP is to provide a high-level document that supports the legislatively required 2024-2034 LTP and focuses on providing a desired level of service through the management of assets in the most cost-effective manner for present and future customers.

This AMP is the result of a substantial body of work over an 18-month timeframe, produced from the efforts of a cross-functional team of representatives including service managers, engineers, financial planners, senior managers, data technicians as well as asset management champions throughout the organisation.

This AMP has been produced concurrently with the 2024-2034 LTP, and all financial information is aligned with the approved budgets under the 2024-2034 LTP.



Executive Summary

This Asset Management Plan is a key supporting document for the Long-Term Plan, to assist in driving the achievement of Council's strategic vision, to describe the assets required to deliver this service, to outline the required Levels of Service we will need to deliver, the necessary actions to ensure we meet the expectations of our community, and the consequences of the decisions made by the elected Council.

1.1 Our Assets

The Council owns and operates wastewater assets and services as part of its duty to ensure that public health and wellbeing is protected efficiently. The wastewater activity operates and maintains the reticulation network that collects and treats sewage from more than 27,000 properties each day across the urban areas of New Plymouth, Bell Block, Waitara, Inglewood and Ōākura.

Through a network of 692 kilometres of sewer pipes, 34 pump stations and a centralised Wastewater Treatment Plant (WWTP), 25 million litres of wastewater is treated every day. The flows of trade waste are monitored as they enter the network. Treated sludge is converted into a commercially sold biosolid fertiliser BioBoost©, a certified product that recycles biosolids and nutrients. NPDC is the only council in the country to do this.

These assets have a gross current replacement value of $874.7M and depreciated replacement value of $439.7M.

1.2 Our Drivers

The agreed Customer Levels of Service (LoS) for wastewater treatment and disposal are:

- Provide an effective wastewater treatment and disposal system
- Comply with all resource consents for wastewater discharge from our system
- Respond to customer and maintenance requests in a timely manner
- Ensure customers are satisfied with the performance of our wastewater system

Since the 2021-2031 LTP, the level of understanding of how the district's wastewater network operates has increased greatly through the creation of wastewater network models, a significant investment that was started in 2020. These models enable us to better understand the implications of population growth, the current network constraints and how to relieve them, and the benefits that operational improvements to the wastewater system will provide.

Aging infrastructure in poor condition and a renewals backlog.

Our wastewater infrastructure is aging leading to an increasing backlog of assets requiring renewal. There are 94km of wastewater mains in poor or very poor condition ($110M). The current backlog of wastewater pipe assets that are due for renewal has a replacement value of $25M.

We have limited understanding of the wastewater treatment and disposal plant and equipment (P&E) assets, and a review of asset criticality and condition assessment should be carried out. The current backlog of wastewater P&E assets that need to be renewed has a replacement cost of $15M.

Reducing impact of wastewater network on the environment.

River water quality testing in Urenui has shown there are issues with the performance of private septic tanks contaminating the surrounding environment and stormwater systems. In addition, the communal septic tanks servicing the Urenui Domain and Onaero campground baches are underperforming and the disposal fields are also at risk of coastal erosion. In Inglewood and Waitara, overflows of untreated wastewater are occurring to waterways via the stormwater system and onto private property from the network at frequencies that are unacceptable to the local communities. This is due to a combination of pipe age and poor condition, pipe capacity, network layout and very high levels of Inflow and Infiltration (I&I).

Growth occurring that needs to be enabled.

Growth areas that are currently planned are unable to be fully developed without major upgrades to the wastewater network. The current wastewater network layout and capacity in the Inglewood-Bell Block and Smart Road catchments will limit growth in the future. The current overflow risk that exists in Inglewood and Waitara also restricts growth that can occur in these catchments. Growth areas in New Plymouth also require upgrades to the downstream network to provide additional capacity. The hydraulic capacity of the WWTP is now reached during heavy rain. The operational interventions that currently manage this will not be possible in the future, so a long-term solution is needed to manage the increased flows that come with growth and climate change.

Improve resilience and maintain operational efficiency of the Wastewater Network.

At the WWTP the main control building and laboratory has a low level of seismic resilience, poor staff working conditions and the laboratory lacks capacity for expected workloads. Preliminary seismic assessment of the Waitara Transfer Pump Station shows that this building and associated infrastructure is at risk of failure during a seismic event due to lateral spread of the stopbank, on which the facility is located, by several metres towards the river. We have a low level of understanding of the risks to wastewater pipe bridges. Many of our pump stations do not have any emergency storage and the overflow risk caused by this is unknown.

1.3 Our Plan

Continue the asset renewal program.

We are continuing with the asset renewals programme for reticulation, P&E to maintain current Levels of Service to reduce the backlog. We are looking to adopt an asset criticality framework and to create a programme to develop and implement a condition inspection of the wastewater treatment and disposal assets.

Urenui and Onaero sewer system.

Council intends to complete the Urenui and Onaero Sewer System in this LTP, which involves the disconnection of existing septic tanks and a new collection and reticulation network for the Urenui and Onaero communities. A

conveyance system will bring these communities along with the Urenui Campground and Onaero Domain to a new local treatment plant, where treated wastewater will be disposed to land.

Inglewood and Waitara wastewater overflow programmes.

A ten year programme of wastewater network upgrades and I&I reduction designed to greatly reduce the existing overflows and provide additional network capacity for growth will be rolled out across Waitara and Inglewood.

Wastewater Treatment Plant Upgrades.

At the WWTP the following major upgrade projects are proposed:

- The Thermal Dryer Facility will be completed in order to continue conversion of treated sludge into a dried biosolid fertiliser.
- The main control and laboratory building will be replaced.
- The WWTP Masterplan will be updated, and a buffer storage facility constructed, designed to divert and detain the peak flows that occur during heavy rain.

These will address the major risks that exist at the WWTP and allow it to continue operating efficiently with capacity to accommodate the future growth of the district.

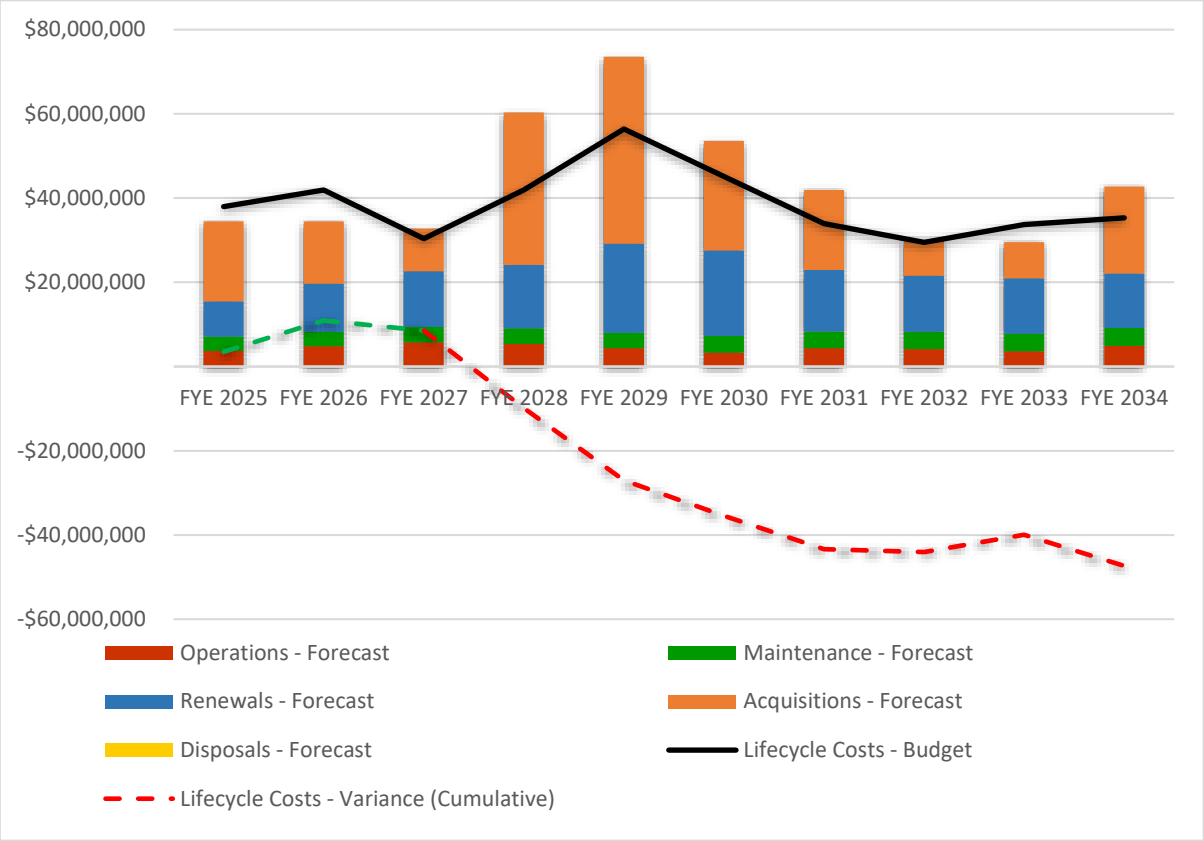
Enabling Growth.

A number of projects are proposed to enable growth to occur in areas that are currently unserviced or require major upgrades.

1.4 The Cost

The financial projections for this AMP are shown in Figure 1.4.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

Figure 1.4.1: Lifecycle Costs Summary



All figure values are inflated. The forecast values only consider the projects included in the first budget submission of the LTP and excludes the projects that have been removed from the budget request before the submission. Section 6.4 makes reference to some of these projects and budgets.

The forecast value shown in the graph considers the projects included in the first ELT/TRU budget submission and excludes the projects that have been requested but were removed or delayed before the submission. For the ELT/TRU submission an approximately 20% reduction in budget was requested for the first three years of the LTP and some projects were delayed due to affordability and resourcing issues. Some examples of the projects that the budgeting reduced, or the project was delayed from the ten-year period in the ELT/TRU submission include:

- Te Henui Pump Station Upgrade
- Eastern Sewer Realignment
- Smart Road Growth Sewer

Overall, the organisations budgets are in reasonable shape for the forecasted costs. There are some clear financial gaps between the funds Council has available versus funds that Council needs to spend in order to meet the future demands of district residents.

1.5 The Risks

There are a number of risks implicit within the wastewater activity which are mostly captured at a high level in the Drivers and Plan sections above.

The major risks not addressed in the LTP is the seismic resilience of the Waitara Transfer Pump Station, and the subsequent health and safety and service disruptions that could occur as a result of a seismic event.

Since the previous 2021 AMP a new risk has arisen in terms of delivering on the work programme and aspirations within the AMP. This is the risk of delayed or non-delivery due to lack of resources created by the current restructure. The restructure is currently impacting capacity to delivery due to unfilled roles and may continue to impact resourcing depending upon its final outcome.

1.6 Future Change

We want to keep on working together with Mana Whenua therefore we need to continue our journey towards partnership with local Iwi and hapū.

We need to better understand the condition of our assets, especially the P&E.

We need to work towards creating and implementing a wet-weather performance standard, in order to better prioritise upgrade projects.

2.1 Background

2.1.1 Organisation Context

New Plymouth District Council (NPDC or Council) serves the New Plymouth District (the district) situated in North Taranaki, in the North Island of New Zealand. Dominated by the majestic Taranaki Maunga, the Taranaki region has historically been built upon the dual economic pillars of the dairy and petrochemical industries but has recently pivoted away from this dual reliance towards a wider economic foundation encompassing other industries to build regional economic resilience. While the district has New Plymouth as its only city it also encompasses a number of smaller towns including the communities of Waitara, Inglewood, Urenui and Ōākura. The district is currently home to a population of approximately 89,000 people, a figure which is forecasted to reach around 93,500 by 2029.

Figure 2.1.1 Taranaki local authority boundaries (image courtesy of TRC)

Providing adequate delivery of services and meeting the expectations and demands of a growing population will bring a number of challenges and opportunities which the organisation will need to plan for, fund, operate and maintain to provide the appropriate levels of service over the planning period.

The current operating environment of NPDC is being significantly impacted by the ongoing effects of the global COVID pandemic, the international instability caused by the war in Ukraine and the political reforms initiated by both the previous and the current central governments. These challenges have created increased financial pressure to all Council departments and to the majority of Council's across New Zealand. More detail about these issues is covered in Section 4 – Demand.

2.1.2 Affordable Water Reform

Under the previous Government's affordable water reforms, the responsibility for the delivery of NPDC's stormwater, wastewater and drinking water activities was planned to move to management under a new Water Service Entity from 1 April 2025. As a consequence of the 2023 general election a new government has been elected. This government has indicated in their manifesto that they would

repeal the existing legislation supporting this change within their first 100 days in power, however, what form the replacement law might take and the subsequent impact to Council is unknown.

This AMP has been developed under the assumption that change will come in some form at an unknown future time. The proposals and recommendations within are based upon the best available information for the existing assets and future needs of the region at the current point in time. Current assumptions are that NPDC will be responsible for these assets for the first two years of this plan, minimum, with any further changes to be determined once new legislation has been adopted.

2.1.3 Service Context

The Council owns and operates wastewater assets and services as part of its duty to ensure that public health and wellbeing is protected efficiently. The wastewater activity operates and maintains the reticulation network that collects and treats sewage from more than 27,000 properties each day across the urban areas of New Plymouth, Bell Block, Waitara, Inglewood and Ōākura.

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2.1.4 Asset Summary

The assets involved in providing the wastewater service include assets in the following major categories:

- Treatment plants
- Outfalls
- Pumpstations
- Reticulation network assets such as:
    - Valves
    - Manholes
    - Wastewater mains
    - Pipe bridges
- Consents[1]
- Hydraulic models[1]

These assets had a combined gross current replacement value of $874.7M and depreciated replacement value of $439.7M as at 30 June 2022.

[1]Under Council's Asset Accounting Policy, consents and hydraulic models are recognised as assets and should be capitalised. Undertaking this asset capitalisation process is identified as an improvement action in Section 8.2

2.2 Asset Management Planning

2.2.1 Goals and Objectives

AMPs are developed by NPDC to provide guidance on how to manage infrastructure and property assets to meet defined levels of service. They are used as supporting documents for the Infrastructure Strategy and Long-term Plan (LTP), which are required under the Local Government Act (LGA), clauses 101B and 93 respectively.

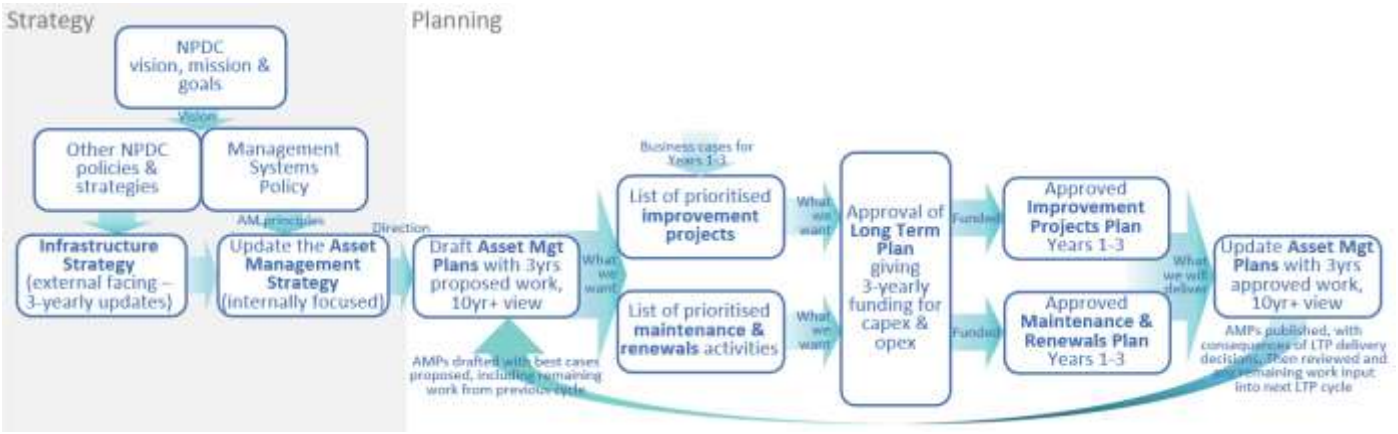
This AMP identifies and addresses the following key elements:

- Defining the levels of service and monitoring overall performance
- Identifying and managing the impacts of changing demand
- Assessing the complete lifecycle requirements for the asset portfolio and developing cost-effective strategies for management of those assets
- Identifying, assessing, and treating risks and improving asset resilience
- Outlining the trade-off between service and risk
- Connecting the forecast costs to the financial LTP, and
- Identifying and acting on opportunities for improvement

2.2.2 Process

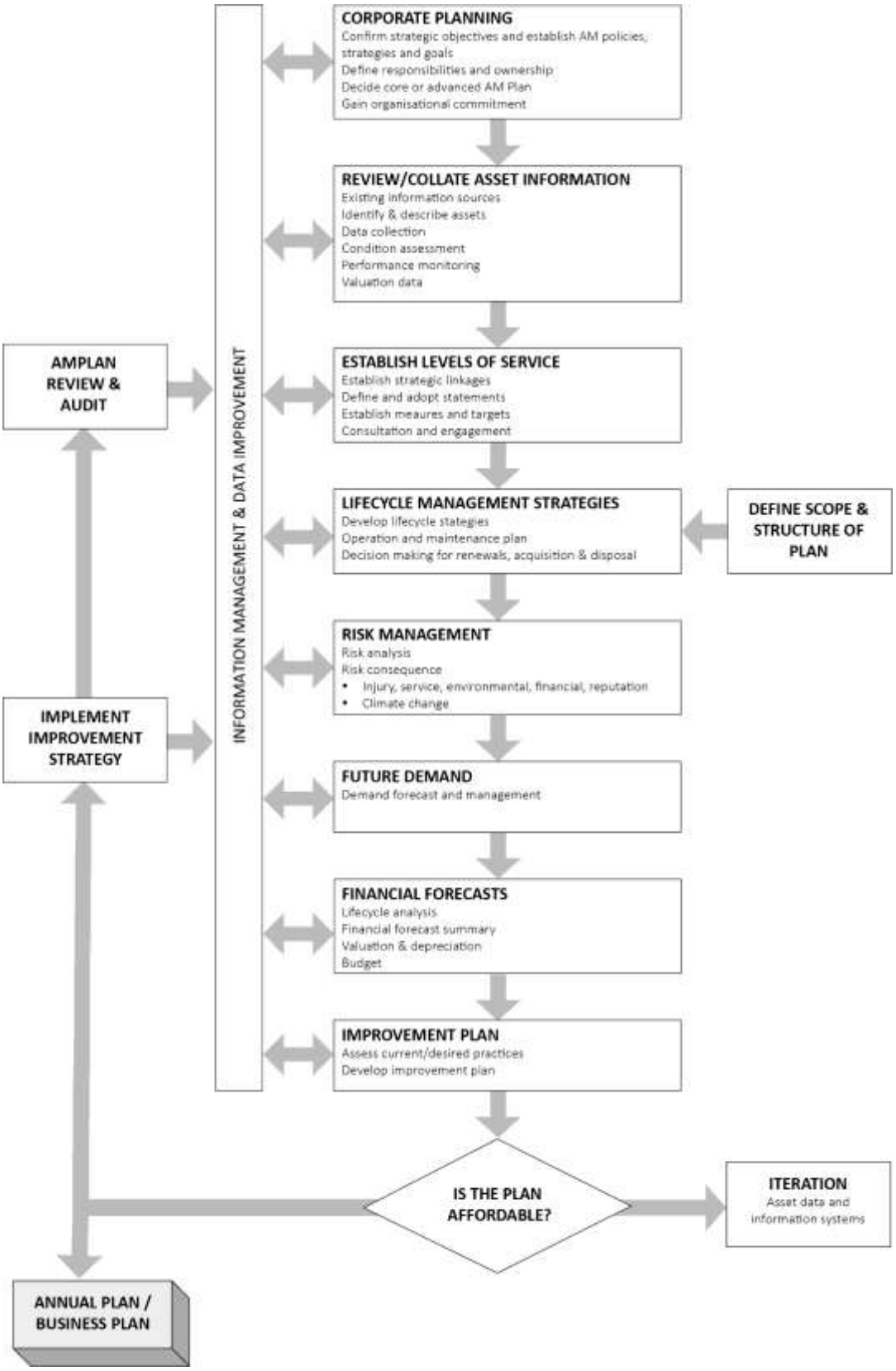
The development of AMPs is part of an overall governance process that is outlined in the Asset Management Strategy. A summary of this process is given in Figure 2.2.2.1

Figure 2.2.2.1: Asset management governance process



NPDC's AMPs are prepared following the International Infrastructure Management Manual (IIMM) Road Map as shown in Figure 2.2.2.2.

Figure 2.2.2.2: IIMM Asset management planning road map



2.2.3 Key Stakeholders

The key stakeholders involved in the preparation and implementation of this AMP are outlined in Table 2.2.3.

Table 2.2.3: Key stakeholders

Stakeholder	Role in Asset Management Plan
New Plymouth Council Elected Members & Mayor	• Represent the needs of community • Define the long-term vision, mission and goals for the district • Ensure that services remain financially sound and sustainable • Hold Council staff to account for delivery of services at the desired service level
NPDC Chief Executive	• Endorsement of AMPs, and actions contained within • Drive engagement at organisation's top-level for alignment of AM planning with LTP and other organisational-wide strategic plans, strategies, and policies • Sets standards, timeframes and expectations for AMPs and strategic direction of organisation
General Manager Operational Excellence	• Delivery of Council's Infrastructure Strategy and key supporting documents • Sponsor the development of the asset management plans including authorising appropriate resources • Set high level priorities and timeframes for plan preparation • Endorse, support, and provide resources for the implementation of actions resulting from the plan • Support improvement of asset management practices, including supporting implementation of relevant new policies, processes and procedures
Manager Three Waters	• Delivery of day-to-day operations, maintenance and minor renewals • Management of internal and contract resources
Operational team	• Delivery of day-to-day operations, maintenance and minor renewals • Management of internal and contract resources
Project Managers	• Deliver capital project works to meet operational needs and fulfil the change requirements defined in the relevant business case • Lead significant acquisition, renewal and disposal works including planning, procurement and commissioning of new assets
External parties – regulators	• Set requirements in the form of regulations and legislation
External parties - community	• Provide feedback by responding to Council surveys and public engagement sessions
Tangata whenua	• Fulfil customary role as kaitiaki over land, water, wāhi tapu, flora and fauna and other taonga.
District Planning	• Provide growth assumption
Transport and Open Spaces Planning	• Ensure the projects account for wastewater implications and vice versa

Levels of Service

Under the LGA, Council is required to "meet the current and future needs of communities for good quality local infrastructure, local public services and performance of regulatory functions in a way that is most cost effective". This requirement translates into a level of service (LoS) – a statement by Council that clearly identifies what it intends to deliver in terms of providing local infrastructure, public services and regulatory functions.

This AMP section outlines the major contributors for defining levels of service statements, the level of service targets that Council is aiming to meet, how those service targets are measured, and the consequences to our communities where levels of service are not achieved. By defining levels of service statements and linked performance measures Council is able to measure performance towards achieving strategic goals and outcomes, as well as identify where performance results achieved differ from performance targets – these are level of service gaps. Where available budget plays a key role in level of service underperformance, the consequences to the organisation and the communities needs to be stated.

3.1 Customer Research

Understanding the requirements of our partners and stakeholders is critical to delivering the service that best meets their needs. Council utilises several consultation tools to understand the priorities of residents, visitors, special interest groups, community boards, local businesses, and iwi. These include:

- Annual independent community survey – Research First
- In-house visitor feedback surveys
- Council website hosted surveys
- Formal consultation for Long-term plan and Annual plan documents
- Public and Council meetings
- Hearings
- Social media posts

3.1.1 Community Survey

An independently managed community survey is undertaken annually by Research First to understand customer satisfaction across all of Council's activities. Feedback from the 2023 New Plymouth Community Survey has been summarised in the Table 3.1.1 and Figure 3.1.1 below.

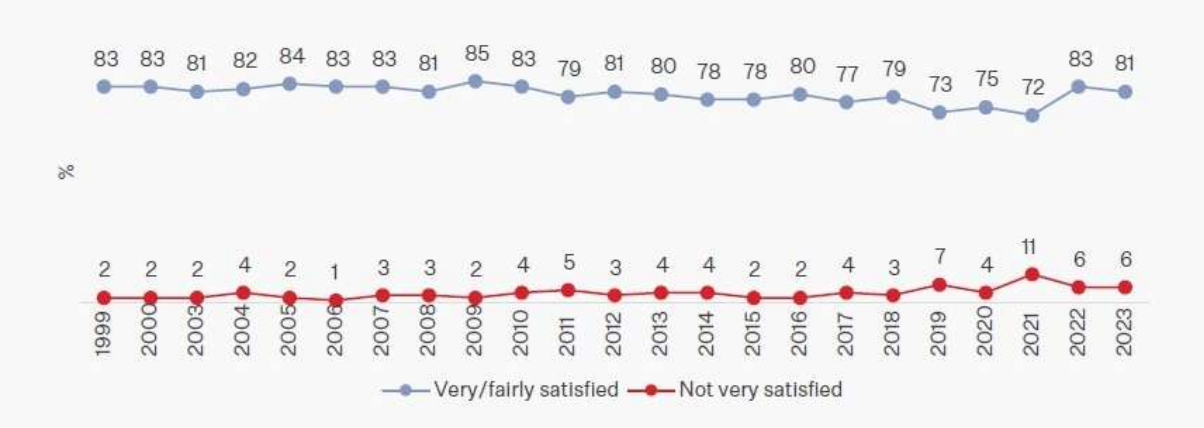
Overall residents are satisfied with the wastewater treatment activity (8 in 10 residents), especially when compared to the provincial peer group average of 67% fairly/very satisfied for 2023. This result is consistent with last year and in line with the long-term average.

Across the district, 77% of residents had a sewerage system provided by NPDC. Of those residents 95% were satisfied with their sewerage service. This indicates that those areas that do not have a sewerage system (Clifton) provided by NPDC are less satisfied.

Table 3.1.1 Feedback from 2023 New Plymouth Community Survey

Performance Measure	Satisfaction Level			
	Not Very Satisfied	Fairly Satisfied	Very Satisfied	Don't Know
Overall satisfaction with wastewater service	6%	25%	56%	13%

Figure 3.1.1 Level of satisfaction with wastewater over time



3.1.2 Other feedback

NPDC has been through the first round of consultation for the LTP during mid-2023. Participants were asked for their views on five specific areas, with an open option to provide their own thoughts on any issues they considered important. From the five specific areas only two have direct impacts on the water supply activity 10-year asset management: 1 - Wild weather: Preparing for wild weather events, and 2 - Rates: Keeping rates affordable.

Residents have shown to be in agreement as to the importance of both areas under consideration. They expressed a strong desire for the affordability of rates to be maintained and were more supportive of reducing the programme of works and other large-scale projects than a reduction in the level of services. The focus should be on the essential services. Just over half of the representative survey would be prepared to accept some increase in rates to pay for better preparation for wild weather events.

Residents have a strong viewpoint on the importance of future-proofing the district's infrastructure (including wastewater networks) for wild weather events. Opinions highlighted the importance of infrastructure resilience against extreme weather events and the need for improved community

safety. The respondents discussed several solutions to improve the district's preparedness for extreme weather events in the future. These include prioritising infrastructure to withstand severe weather events, reducing emissions and transitioning to a greener future, enhancing emergency response and disaster management strategies, supporting community resilience, and prioritising core services while reducing unnecessary spending.

3.2 Strategic and Corporate Goals

3.2.1 NPDC's Vision, Mission and Goals

This AMP is prepared under the direction of the New Plymouth District Council's Vision, Mission and Goals, as shown in Figure 3.2.1. This strategic framework is available on NPDC's website at the following weblink: https://www.npdc.govt.nz/planning-our-future/our-vision/.

Figure 3.2.1: NPDCs Vision, Mission and Goals

3.2.2 Alignment

How these goals are aligned to the Asset Management Strategy focus areas and how they will be addressed by this AMP is summarised in Table 3.2.2.

Table 3.2.2: Organisational goals, asset management strategy focus areas and how these are addressed in this Plan

Goal	How Goal and Objectives are addressed
Trusted **Building credibility**	We are working on an integrated approach with the Wastewater Network Modelling project to better understand the opportunities and priorities for future improvement and investment in wastewater infrastructure so that the district's communities have safe, reliable and efficient wastewater treatment with minimum environmental impact. The Asset renewals programmes for reticulation, P&E are in place to maintain current Levels of Service.
Thriving Communities and Culture **Equitable & inclusive**	NPDC is committed to collaborate with our iwi and hapū. The wastewater network modelling project will keep on identifying the current deficiencies and future upgrade requirements in the level of service and account for growth in a planned way.
Environmental Excellence **Efficient & resilient**	The Inglewood and Waitara wastewater overflow programmes will reduce the frequency and volume of overflows to the environment that are currently occurring. The Urenui and Onaero sewer project will address the multiple issues that are present with the current collection and disposal system by constructing a new treatment plant and land disposal system, taking care of our environment while embracing Te Ao Māori. The wastewater modelling project will help us understand the current wet weather performance of the different catchments within the wastewater network, and target upgrades that will have the most impact on the environment. We are looking to build and manage future NPDC assets according to low carbon principles.
Prosperity **High performing & equitable economy**	Through integrated planning, we are working on a holistic view that lets for more targeted and integrated expenditure through integrating the improvements identified for growth, operational efficiency, renewals and leading to reduced costs for an equivalent outcome. The overflow reduction programmes and upgrades to the NPWWTP will help us to grow a resilient, equitable and sustainable economy.

3.2.3 Te Mana o Te Wai

Te Mana o te Wai (mana of the water) is about recognising the vital importance of clean, healthy water for maintaining the health of our water bodies, freshwater ecosystems and the communities that rely upon them for their sustenance and wellbeing. It is a concept that has been introduced by the National Policy Statement for Freshwater Management (NPS-FM) 2020 and will be the foremost fundamental concept that will guide our approach to water in New Zealand moving forward. Te Mana o te Wai imposes a hierarchy of obligations by prioritising the health and wellbeing of water bodies and freshwater ecosystems first. The second priority is the health needs of people (such as drinking water) and the third is the ability of people and communities to provide for their social, economic and cultural wellbeing.

The NPS-FM allows for the development of local definitions for Te Mana o te Wai that will need to be incorporated into the approach. This work is currently underway as part of the Natural Resources Plan for Taranaki.

3.2.4 Other Strategies

In addition to the above, there are other strategies with drivers and goals that are relevant to the management of our infrastructure. These strategies and their relevant drivers/goals are captured in Table 3.2.4.

Table 3.2.4: Other strategic objectives and how these are addressed in this Plan

Strategy	Objective/ driver	Description
Infrastructure Strategy	Ensuring our existing assets remain fit for purpose	The Asset renewals programmes for reticulation, P&E are in place to maintain current Levels of Service. Section 5.3 describes the details of our renewals plan. Section 5.2 has details about what we are looking in terms of Operation and Maintenance and the improvements that are needed in this area.
	Resilience and adapting to climate change	Section 4.7 describes how we are managing the impacts of climate change.
	Providing for sustainable growth and the changing needs of our community	The wastewater network modelling project will allow for the assessment of the impacts on the network of future growth, and the required upgrade projects that will allow this growth and address these impacts to be planned efficiently. We are looking to build and manage future NPDC assets according to low carbon principles.
Asset Management Strategy	Improve our planning	We are investing in planning by continuing the Wastewater Network Modelling Project (Refer to Section 4.2).
	Improve our asset data	The implementation of the Wastewater hydraulic models will support in the improvement of our understanding of constraints in the wastewater network and where overflows occur so we can operate the network more effectively.
	Improve our processes	The improvements actions that are described in Section 8.2 will help us to improve our processes to function more efficiently.
	Reduce our emissions	We are looking to build and manage future NPDC assets according to low carbon principles.
He Puna Wai	Partnership with iwi	NPDC is committed to collaborate with the iwi and hapū and, and as part of the He Puna Wai agreement, has been working together with the iwi in a spirit of partnership and collaboration to develop sustainable long term strategy for District's Three Waters systems. Alongside He Puna Wai, NPDC host the Three Waters Hui. This working group consists of local

		hapū and iwi representatives together with NPDC officers, where collaboration and presentation of ideas related to the Three Waters long term planning and projects are tabled and discussed. NPDC is working in partnership with Ngāti Mutunga to develop the Urenui and Onaero sewer project.
Environmental Sustainability Policy	Mitigate and adapt to climate change Protect and increase natural biodiversity	This internal policy seeks to provide leadership in the area of climate change adaption, requiring NPDC to consider appropriate resilience levels for assets. This internal policy requires council to protect existing ecosystems and biodiversity, and avoid polluting the environment.

3.3 Legislative Requirements

There are many statutory and legislative requirements relating to the management of assets. Requirements that have a significant impact on the delivery of the wastewater treatment activity are outlined in Table 3.3. Other statutory and regulatory requirements are captured in Appendix 1.

Table 3.3: Significant Statutory and Legislative Requirements

Legislation/ regulation	Relevance to service/ assets
Water Services Act 2021	This act aims to ensure that drinking water suppliers provide safe drinking water to consumers, establishes a framework to provide transparency about the performance of Three Waters operators, provides mechanisms to build and maintain capability and establishes a framework for continuous improvement.
The Water Services Economic Efficiency and Consumer Protection Act 2023	Establishes an economic regulation and consumer protection regime for Three Waters activities.
Civil Defence Emergency Management Act 2002 and Amendments	Requires that an Emergency Management Plan (EMP) be maintained and reviewed annually and that it is accepted as suitable by independent review
NPDC Proposed District Plan	The District Plan includes objectives, policies and rules that manage the adverse effects of activities on the environment with a focus on land use and subdivision activities. The proposed plan improves NPDC's tools for managing the impact of development as it pertains to stormwater. Most notably is the use of a non-statutory layer for the stormwater flooding areas.
National Policy Statement for Freshwater Management (NPS-FW) (2020)	The NPS-FW provides local authorities with direction on how to manage freshwater under the RMA. This regulation introduces the concept of Te Mana o te Wai as explained in Section 3.2.3.
Land Development and Subdivision Infrastructure Standard 2019	This Standard provides criteria for design and construction of wastewater infrastructure it is based on NZS 4404:2010.

3.4 Customer Values

As a Local Government organisation, Council's primary customers are ratepayers who do not have a choice of supplier. In addition, Council is providing services to community groups, businesses, emergency services and visitors to the region. It is therefore essential that Council not only meet statutory requirements in delivering services, but that there is a strong understanding of customer needs and expectations including:

- What is important to the customer
- Whether the customer sees value in what is provided and
- How customer satisfaction is expected to change based on the current budget

Table 3.4 describes the key deliverables from the perspective of the customer, and how these values are expected to be impacted over the ten-year term of this AMP. These are measured in terms of customer satisfaction which is typically determined through direct feedback via survey, service requests or complaints.

Table 3.4.1: Customer Values

Measure	Reporting Level	Current Performance	Target				Expected trend
			2024 /25	2025 /26	2026 /27	2034 /35	
Service objective	**Ensure customers are satisfied with the performance of the wastewater system**						
The total number of complaints (per 1,000 connections) received about any of the following: • sewerage odour; • system faults or blockages; • NPDC's response to any of these issues.	Annual Report	5.38 	13 or less				No change. It is expected that the target will be reviewed.

Current performance can be seen at a glance using the icons within the table. Results included are from 2022/2023 period. These icons are described in Table 3.4.2.

Table 3.4.2: Key

Icon			
Status of current performance	Performance target met	Substantially achieved, target not met by a slim margin (~2%)	Target not met.

3.5 Levels of Service

The standard of service provided by Council is defined by the agreed level of service. The agreed LoS for Wastewater Treatment are:

- Provide an effective wastewater treatment and disposal system.
- Comply with all resource consents for wastewater discharge from our system.
- Respond to customer and maintenance requests in a timely manner.
- Ensure customers are satisfied with the performance of our wastewater system.

The same level of service may be measured by considering either or both perspectives. This ensures that customers are able to interpret performance in a manner that is understandable to them, while regulators can also see that Council performance is meeting the required targets.

Council's performance against these LoS is measured using replicable, factual measures that are SMART:

- **S**pecific – it is clearly defined what the measure relates to,
- **M**easurable – success or failure can be measured without interpretation bias,
- **A**chievable – something that is possible to achieve,
- **R**elevant – something Council can reasonably be expected to have an impact on,
- **T**ime-bound – a timeframe for completion or measurement is defined.

They are further grouped into two key categories:

- Customer Performance Measures (C): measure how the customer receives or experiences the service, in the context of what matters most to the customer, and
- Technical Performance Measures (T): measure the service the organisation provides in terms that are relevant to delivery, this includes technical indicators that may not be easily understandable to the layperson.

Table 3.5 outlines the measures used to determine the overall performance of these assets.

Table 3.5.1: Level of Service Measures

Relevant Services	Wastewater Treatment							
Level of Service Statement	Provide an effective wastewater treatment and disposal system							
Measure	**C /T**	**Reporting Level**	**Latest Result (2022/23)**	**Target**				**Expected trend**
				2024/25	**2025/26**	**2026/27**	**2034/35**	
The number of dry weather sewerage overflows per 1,000 connections to the wastewater system.	C	LTP	0.16 	1.5	1.5	1.5	1.5	Performance is expected to be maintained at current level due to ongoing renewals and maintenance.
Level of Service Statement	Comply with all resource consents for wastewater discharge from our system							
The number of abatement notices received.	C	LTP	1 	0	0	0	0	Performance is expected to improve due to ongoing maintenance and upgrade programs
The number of infringement notices received.	C	LTP	0 	0	0	0	0	Performance is expected to maintain at current level due to ongoing renewals and maintenance.

The number of enforcement orders received.	C	LTP	0 	0	0	0	0	Performance is expected to maintain at current level due to ongoing renewals and maintenance.
The number of convictions received.	C	LTP	0 	0	0	0	0	Performance is expected to maintain at current level due to ongoing renewals and maintenance.
Level of Service Statement	Respond to customer and maintenance requests in a timely manner							
The median response time to sewerage overflow callouts (from the time NPDC receives notification to the time that service personnel reach the site).	C	LTP	0.64 	1 hr or less	1 hr or less	1 hr or less	1 hr or less	Performance is expected to maintain at current level
The median resolution time for sewerage overflow callouts (from the time NPDC receives notification to the time that service personnel confirm resolution of the fault or interruption).	C	LTP	2.02 	4 hour or less (<250 dia)	4 hour or less (<250 dia)	4 hour or less (<250 dia)	4 hour or less (<250 dia)	Performance is expected to maintain at current level
	C	LTP	0 callouts 	8 hour or less (>250 dia)	8 hour or less (>250 dia)	8 hour or less (>250 dia)	8 hour or less (>250 dia)	Performance is expected to maintain at current level
Level of Service Statement	Ensure customers are satisfied with the wastewater treatment and disposal service.							
The total number of complaints received about sewerage odour; system faults or blockages; or NPDC's response to issues with the sewerage system (per 1,000 connected properties).	C	LTP	5.38 	13 or less	13 or less	13 or less	13 or less	Performance is expected to maintain at current level
Level of Service Statement	Provide a good quality and safe wastewater treatment system.							
The percentage of residents satisfied with the quality and safety of the district's wastewater treatment system.	C	LTP	New measure	80	80	80	80	Future trend to be determined once current performance is better understood.

Current performance can be seen at a glance using the icons within the table. These icons are described in Table 3.5.2.

Table 3.5.2: Key

Icon			
Status of current performance	Performance target met	Substantially achieved, target not met by a slim margin (~2%)	Target not met.

Development and implementation of a technical level of service for the wet weather performance of the wastewater network is a future goal. With the newly-created hydraulic model and wastewater network modelling project the tools to successfully create this will be possible. This is captured as an improvement in Section 8.4.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Future Demand

4.1 Demand Drivers

Demand drivers are those factors which impact the extent to which an asset or service is required and used, or the type of service required. Demand drivers include factors such as:

- Population size, growth and demographics
- Urban development including residential dwelling growth, location, makeup and quantity
- Consumer requirements, preferences, expectations and patterns of use
- Technology type, use, rate of change, level of interaction and customer expectations
- Legislative environment including central government reform
- Environmental factors such as those occurring through climate change

The specific factors relevant to each service and the impact of those drivers are expanded upon below.

4.2 Demand Forecasts

NPDC prepares and adopts a range of non-financial forecasting assumptions to support the preparation of significant plans including AMPs and the LTP. These assumptions present a likely future scenario of projected changes in key demand drivers. By adopting one set of forecasting assumptions Council can have confidence that each plan will be aligned and focused towards fulfilling the same organisational objectives and long-term outcomes for the community.

4.3 Wastewater Network Modelling and Planning

During the last 4 years the Wastewater Network Modelling project has been working to identify the current deficiencies and future upgrade requirements to address the current network performance and future growth requirements. The project pursues an integrated approach to planning for the four reticulated wastewater catchments; Te Henui, Glen Avon, Inglewood/Bell Block and Waitara. We are seeking to better understand the opportunities and priorities for future improvement and investment in wastewater infrastructure so that the districts communities have a safe, reliable and efficient wastewater network with an appropriate level of service.

The project aim is to have targeted and integrated expenditure through integrating renewal, LoS and growth projects leading to reduced costs for an equivalent outcome. This project uses previously completed assessment and calibrated hydraulic models to further analyse and evaluate the impacts of growth, climate change, operational optimisations, and regulatory changes on the district's wastewater network.

4.4 Demand Impact and Management Plan

The impact of relevant demand drivers on wastewater and how those impacts are managed is shown in Table 4.3.

Council utilises a variety of demand management strategies to control the extent to which demand has an impact on customer satisfaction and levels of service. These demand management strategies include:

- Changing the management of existing assets such as:
    - balancing peak and off-peak demand,
    - optimising utilisation,
    - reducing wastage,
- upgrading existing assets,
- providing new assets, and
- reducing levels of service to meet customer appetite/willingness to pay.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population growth and land use intensification	Estimated district population in 2024: 89,000	2034 projected population: 98,800 (11% increase)	Additional load placed on wastewater network and treatment plant from increased number of connections.	Growth models were developed considering land use infill and greenfield areas based on the District Plan growth assumptions. Calibrated hydraulic models are used to assess the level of service and system performance, accounting for this growth (current and future). Specific projects are considered to enable growth (Puketapu, Smart Road, Patterson Road, Eastern Sewer Realignment).
Economic activity	NP District GDP 2022: $7.02B	Expected to increase at a steady rate of 1.5%/year	Increased demand/load placed on wastewater network and treatment plant.	Commercial/Industrial Growth Projections have been included as part of the 30 years growth model used as base data for the hydraulic models. Masterplan update for WWTP planned.
Government reforms	Three Waters Reform, Resource Management Act Reform and Local Government Act review all underway but expected to be repealed or changed within 6-months.	Formal reforms to be repealed in favour of a Local Government led approach. Increased compliance costs anticipated. May be a drive for regionalisation of	Variety of proposed changes to legislation to replace the reforms. More certainty required to identify resourcing implications.	Council to continue standard practice of monitoring and reviewing change when new legislation is drafted.

		management of some major assets.		
Earthquake strengthening	Legislative change requires buildings meet a higher standard for earthquake strengthening	Ongoing expectation that buildings be more able to protect against impacts of earthquakes	Existing wastewater facilities require detailed seismic assessments and subsequent strengthening	Risk assessments and upgrade projects are planned for existing facilities which require seismic strengthening. The WWTP Main Admin and Laboratory building is planned to be replaced in part due to poor seismic rating.
International instability	War in Ukraine and the Covid pandemic is driving up the cost of fossil fuels and causing supply chain shortages & delays	Significant cost increases in fossil fuel (e.g.: gas for boilers, diesel for generators). Significant delays sourcing equipment parts from overseas	Increased opex and capex costs	A combination of a reduction in the proposed scope of work and an increase in budgets.
Improved iwi engagement	Te Tiriti O Waitangi is becoming a significant driver for NZ activities	Relationship with local iwi and hapū developed into full partnership	Increased cost to fund and time to facilitate iwi/hapū involvement. Increased focus on the environmental and cultural considerations for everything	Additional time and budget is allowed in the planning stages of projects to account for this effort.
Climate change	Refer to section 4.7			

4.5 Asset Programmes to meet Demand

The new assets required to meet demand may be acquired, constructed or donated. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit Council to ongoing operations, maintenance and renewal costs for the entire length of time that the asset provides a service to the community. Forecasting these changes in costs is currently completed inconsistently or not at all. This has a flow-on effect whereby forecast costs for operations and maintenance can be underestimated, or at worst, not taken into account for long term budget planning. Development and implementation of a process for lifecycle costing is recorded as an improvement action in Section 8.

4.6 Sustainability

Council has a vision of becoming a Sustainable Lifestyle Capital. Council's sustainability efforts are driven by a focus on:

- conservation of energy and resources (such as water)
- nurturing, and reducing our impacts on the environment
- increasing biodiversity in our district
- increasing recycling and working towards zero-waste
- sustainable procurement practices
- planning and building communities and infrastructure that interact with the environment, and
- working toward net-zero emissions

NPDC's commitment is captured in a number of documents as shown in Figure 4.6.1

Figure 4.6.1: Decision-making documents relevant to sustainability

* Policies internal to NPDC

Table 4.6.2 summarises the changes to the wastewater treatment activity that could be made to increase overall sustainability.

Table 4.6.2 Sustainability initiatives

Proposed new/ changed asset	Long-term impact/ sustainability concern	Outcome of planned change	Implementation Plan
Education around what can go into the wastewater system	Anything other than the "Three P's" (Poo, Pee, toilet Paper), especially wet wipes and fats that are flushed down toilets can lead to blockages and subsequent overflows from the wastewater network, leading to negative impacts to the ecosystem.	The public are better informed about the consequences of their actions so better connected with their environment so make better decisions.	NPDC currently has a basic 3 Waters education program, mostly targeting schools.
Inflow and Infiltration reduction programmes	High volumes of stormwater that enter the wastewater network require increased pipe capacity to convey it and increased energy usage to pump it through the network and treatment plant before discharging to the environment.	Reducing levels of Inflow and Infiltration will allow NPDC to potentially delay or reduce the scale of pipe upgrades, along with reducing energy usage in our pump stations and treatment plant and reducing the volume of treated wastewater that is discharged to the environment.	Inflow and Infiltration reduction programmes are planned to occur in the Inglewood and Waitara networks alongside widespread network upgrade programs.
Emissions reduction	Reduce long-term carbon emissions. This will help us to mitigate and limit the impacts of climate change.	NPDC reaching net zero emissions by 2050. Decarbonisation process will save 20% to 30% of NPDC's emissions year on year and offers potential cost savings of close to $1billion by 2050. NPDC's use of resources and materials for operations and infrastructure projects are the organisation's largest source of emissions when you exclude closed landfills. NPDC can reduce these emissions by integrating low carbon principles within its planning, design, procurement and supply chain.	NPDC is looking to implement a decarbonisation programme to procure, design, build and manage future NPDC assets according to low carbon principles. For the programme to reduce the most emissions, decarbonisation requires the reduction of the whole-of-life carbon within the things we buy and infrastructure we build.

NPDC, like many organisations, is working to improve sustainability and resilience in recognition of the requirements of the Paris Agreement to minimise the increase in global average temperature and address climate change. The New Zealand Government signed this agreement and NPDC as a territorial authority of New Zealand are bound to meet these requirements.

Council has made a commitment to reducing the district's overall contribution to greenhouse gas emissions and has prepared a District-wide Emissions Reduction Plan that outlines the current state, identifies how reducing emissions could impact climate change, what NPDC's role in emissions reduction is, and specific actions that will be taken as we work towards meeting the national targets as indicated in Aotearoa New Zealand's first emissions reduction plan.

4.7 Climate Change Adaptation

Climate change is anticipated to result in a number of impacts, such as greater extremes of temperature and weather, more frequent severe weather events, and elevated sea-levels. These impacts are likely to have direct consequences on Council assets, the services they provide, and the communities that depend on those services.

In addition to reducing the production of emissions, Council has identified the potential impact of climate change on its wastewater treatment assets and the actions that will be taken to manage these issues is indicated in Table 4.7.1 below.

Table 4.7.1 Managing the Impacts of Climate Change on our Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Severe weather events	Rainfall associated with severe weather events is projected to increase by between 9% and 35% (depending on the location, duration and RCP) by 2090.	Potential for increased frequency and volume of wet weather overflows from the wastewater network. WWTP reaching hydraulic capacity more frequently, increasing risk of overflow.	System performance modelling to understand overflow risk areas. Upgrade programmes to increase network capacity, reduce Inflow and Infiltration, provide additional pump station emergency storage, renew WWTP masterplan and provide buffer storage.
Average rainfall	There is a 2%-8% (RCP4.5-8.5) 8% increase in annual rainfall projected by 2090 for most urban areas. The most significant projected increase is under an RCP 8.5 scenario a 12-16% increase is projected for all urban areas in winter.	Exacerbates the overflow risk associated with the increased severe weather events by making the soil saturated pre-event and thus increasing infiltration rates.	To be considered in the antecedent conditions used when creating hydraulic models and assessing system performance and overflow risks.
Increased temperature	Average temperatures are expected in increase with climate change.	Increased temperatures could affect some biological treatment processes at the WWTP.	WWTP masterplan update to consider temperature changes.
Community environmental expectations	Community expectations are changing in key areas such as ecological and environmental impacts.	Community awareness of wastewater overflows increases and pressure to reduce these increases.	Implement overflow reduction programmes across high-risk catchments (Inglewood, Waitara) to reduce current overflows.
Elevated sea-level	By 2090 0.5m (RCP4.5) to 0.7m (RCP8.5) of sea level rise is projected relative to the 1986-2005 baseline.	Wastewater assets located in low lying or coastal areas are at higher risk of inundation during storms, leading to failure or having to relocate.	Investigate potential mitigation options or relocation of wastewater assets at risk of sea level rise.

Lifecycle Management Plan

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

5.1 Background data

5.1.1Asset data and information

Asset data is collected and managed by Council within several key systems including:

- TechOne Enterprise Asset Management system (TechOne/ EAM) – manages financial information, customer information and requests, asset registers and history, work order management and maintenance scheduling. It is linked with the TechOne Enterprise Content Management (ECM) system which manages records.
- ArcGIS – manages spatial records (GIS)
- RedEye – manages all drawings including concept, working and as-built drawings
- SharePoint – supports the sharing of working and in-draft documentation, the collection of data into lists and the sharing of information and processes to internal parties via 'wiki' pages
- Water Outlook - for gathering and managing the Supervisory Control and Data Acquisition (SCADA) system and processing data
- Infoworks - for pipe network modelling
- P3M - Council's Portfolio, Programme and Project Management (P3M) framework is used to identify the need of new wastewater assets and to manage the operational and capital expenditure projects.

The quality of Council's asset data is essential for supporting effective decision-making in relation to our maintenance, renewal and upgrade work programmes. Information such as asset condition, remaining useful life (RUL) and asset valuations are central to the discussions in this AMP.

Asset data is captured through a variety of processes including;

- acquiring new assets (e.g. capital projects, community developments, operational renewals)
- undertaking maintenance work
- completion of new valuations or condition assessments, and
- asset disposal.

Consistent and timely capture of data has been identified as an area for improvement – both externally with contractors and subcontractors at asset installation, completion and commission stages, as well as internally between teams – and will ensure that maintenance is undertaken appropriately, and assets capitalised promptly within the system.

5.1.2Asset hierarchy

An asset data hierarchy is a systematic and structured framework of business units, processes, systems and equipment into generic groups based upon organisational relationships and functions. The hierarchy allows Council to identify its assets and related components, as well as creating a clear and logical framework for asset management. A well-defined asset hierarchy is critical to Council's overall AMIS. The asset hierarchy includes the asset class and components used for asset planning and financial reporting, and service level hierarchy used for service planning and delivery. Data is continually updated with details from asset condition assessments and as asset repairs, improvements and completion of other operational works.

Current data confidence levels are indicated in Table 7.5.2.

The organisation's asset hierarchy is currently a work in progress, as Council is undergoing a system migration to an updated online version of TechOne. The migration towards an updated version of TechOne is a multi-stage rollout, and will deliver improvements to our asset data such as

- Recording of land assets within the asset management system for whole-of-life asset management and reporting
- Implementing the review and alignment our asset data schemas delivered by the AIR project. This will align ADAPTs asset register to relevant asset management standards as well as identifying the business processes that they support.
- Providing the organisation an opportunity to undertake a data cleanse of our asset data prior to the data migration, to improve overall asset data accuracy and asset data system integrity.

5.1.3Scope

The assets covered by this AMP are listed in Table 5.1.3.1.

Table 5.1.3.1: Wastewater Assets

Asset category	Description	Amount + Unit	Gross Current Replacement Value ($million)	Depreciated Replacement Value ($million)
Treatment Plant	Outfalls	3 no	$5.3	$2.3
	NPWWTP	1 no	$120.2	$64.3
Pump Stations	Pump Stations	34 no	$24.9	$14.2
Reticulation Network	Valves	613 no	$1.2	$0.7
	Manholes	7,746 no	$44.2	$21.2
	Reticulation Mains	485 km	$599.6	$290.0
	Rising Mains	66.8 km	$83.7	$65.3
	Laterals (Service)	204 km	$57.3	$32.0
	Laterals (Service)	47 km	$0	$0

	Pipe Bridges	75 no	$0	$0
Consents		4	$0	$0
Hydraulic Models		4	$0	$0
		Total value	**$874.7**	**$439.7**

Notes:

- Valuations for all assets in Table 5.1.3.1 were conducted in June 2022 and these asset valuations are undertaken every three years.
- The resource consents and hydraulic models are recognised as assets under the Asset Accounting policy and should be capitalised. These assets have not yet been capitalised and undertaking this process is identified as an action in Section 8.2.
- Some service laterals have not been included and capitalised in the asset management system; the estimated Replacement Cost of these assets is $13M.
- The resource consents listed are the required ones to discharge wastewater to the environment as part of the treatment and distribution network.

The assets described in this plan are primarily owned and maintained by NPDC. Council also provides support and assists in the management of assets wholly or partly owned by other parties including (but not limited to) those owned by Taranaki Regional Council (TRC), through joint ventures, via Council Controlled Organisations (CCO's), shared community assets, and assets owned by community groups that utilise Council facilities.

These assets are typically excluded from the full lifecycle planning process as, while Council has a vested interest, the organisation cannot dictate future actions to be taken in the management of these assets. Table 5.1.3.2 details the assets that are specifically being excluded from this lifecycle management plan section and the reason(s) why.

Table 5.1.3.2: Assets excluded from this plan

Asset	Details	Why excluded
New Plymouth Airport Wastewater collection and disposal system	The pipe network, pump stations and disposal field that services the NP Airport and surrounding precinct.	These assets are owned by the NP Airport Council Controlled Organisation and maintenance responsibility lies with them.
Privately owned pipes that convey wastewater	There are a number of privately owned pipes that discharge to the wastewater network.	These pipes are privately owned; operation and maintenance responsibility lies with the owners.
Privately owned pump stations and storage assets	There are a number of privately owned pump stations and associated emergency storage that hold and pump wastewater before discharging to the NPDC network.	These pump stations are privately owned; operation and maintenance responsibility lies with the owners.
Privately owned septic tanks and disposal field	There are a number of privately owned septic tanks and associated disposal fields that collect and treat wastewater before disposal to the environment.	These septic tanks and disposal fields are privately owned; operation and maintenance responsibility lies with the owners.

While these assets are excluded from the AMP, their proper operation and maintenance are importance to the functioning of the wastewater network and in many cases (such as private septic tanks and disposal fields) this is not occurring. This represents a risk to the environment and NPDC having to intervene such as with the Urenui and Onaero sewer project.

5.1.4Asset capacity and performance

Council aims to construct and maintain assets to meet design standards and specified performance requirements where these are available. However, there are insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.4.

Table 5.1.4: Known service performance deficiencies

Asset & Location	Service Deficiency	Management Plan
Inglewood & Waitara Wastewater networks	Wastewater overflows are occurring to the environment multiple times per year in wet weather events.	Widespread overflow reduction programmes are planned for Inglewood and Waitara.
Urenui Campground Wastewater disposal field	Consented discharge volumes are breached consistently during periods of high occupancy and the discharge field is located in a site of significance to local iwi.	The Urenui and Onaero Sewage project is planned which will allow this disposal field to be decommissioned.
Onaero Domain Wastewater disposal field	The current wastewater discharge field is in close proximity to the cliff edge, in an area of very active coastal erosion.	The Urenui and Onaero Sewage project is planned which will allow this disposal field to be decommissioned.
Administration and Laboratory building at the New Plymouth WWTP	Various issues with working in this building: • The present building has an NBS rating of 34% which is below NPDC's policy of a minimum NBS of 67%. • The staff welfare facilities for the NPWWTP site are very poorly designed. • The existing laboratory lacks space for present needs and no capacity for future expansion to meet the increasing demands from a growing population and increasing compliance testing regimes.	Main control and laboratory building replacement project.
Waitara Transfer Pump Station	Preliminary assessment shows that this building is at risk of failure during a seismic event due to lateral spread of the stopbank, on which the facility is located, by several metres towards the river. Further analysis is required to understand this seismic risk and the impact on functionality of the plant post-event. Analysis of the August 2022 rain event using the hydraulic model shows that transfer capacity of the pump station	Waitara Wastewater Transfer Upgrade project was submitted to the LTP but not included in draft consultation version.

	would need to be approximately doubled in order to avoid discharging untreated wastewater from the marine outfall.	
Inglewood Oxidation Ponds Pump Station and Rising Main	The existing pump station can only deliver 2x average dry weather flow. Peaking factors of 16x are seen in wet weather events, causing the ponds to overflow for extended periods post rainfall. The consent for this overflow expires in 2033 and is unacceptable long term. The rising main to Bell Block is an ex Moa dairy factory asset and is in unknown condition.	Inglewood Oxidation Pond and Pump Station Upgrade project. This is due to be completed in 2033.
Te Henui Pump Station	The Te Henui pump station has a number of issues including: • The pump station is operating at or near peak capacity during rain events. • There is no viable way to shut down the pump station to perform maintenance. • The inlet screens require manual raking within a confined space • The rising main downstream is in unknown condition	Te Henui Pump Station upgrade project was submitted to the LTP but not included in draft consultation version.
Corbett Park and Shearer Reserve Pump Stations	The Corbett Park and Shearer Reserve pump stations have a number of issues including: • Pumps are not reliable and obsolete • Corbett Park pumps operate in series causing cavitation that in turn causes excess vibration which damages the pumps • concrete has been corroded by H_2S attack and reinforcing bars are now exposed • no backup power supplies and no plug for a mobile generator	Upgrade projects for both pump stations were submitted to the LTP but not included in draft consultation version.

The above service deficiencies were identified from the Wastewater Modelling project, asset condition assessments and ongoing monitoring.

5.1.5Asset condition

Asset condition is monitored and recorded on the asset register using a rating system, as detailed in Table 5.1.5.

Table 5.1.5: Condition rating system

Condition rating	Description of condition
1	Excellent - free of defects, only planned and/or routine maintenance required
2	Good - minor defects, increasing maintenance required plus planned maintenance
3	Average - 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

6 (or 0)	Unknown, not currently assessed or non-existent. *Note: Condition ratings of 0 have been converted to 6 in the graphs provided below to provide consistency.*

Across Council's asset portfolios several issues have been identified with the condition assessment approach undertaken at present. These include:

- an inability to easily record the date on which the assessment was undertaken and consequently a lack of awareness of data currency
- condition assessment data that has not been entered into the asset register but remains in separate hardcopy or other electronic documents, and
- inconsistencies in rating approach (including basing the rating on asset age rather than a physical assessment)

Addressing the above issues and filling gaps in the historical data are actions identified within the Asset Management Strategy Improvement Plan for all asset groups.

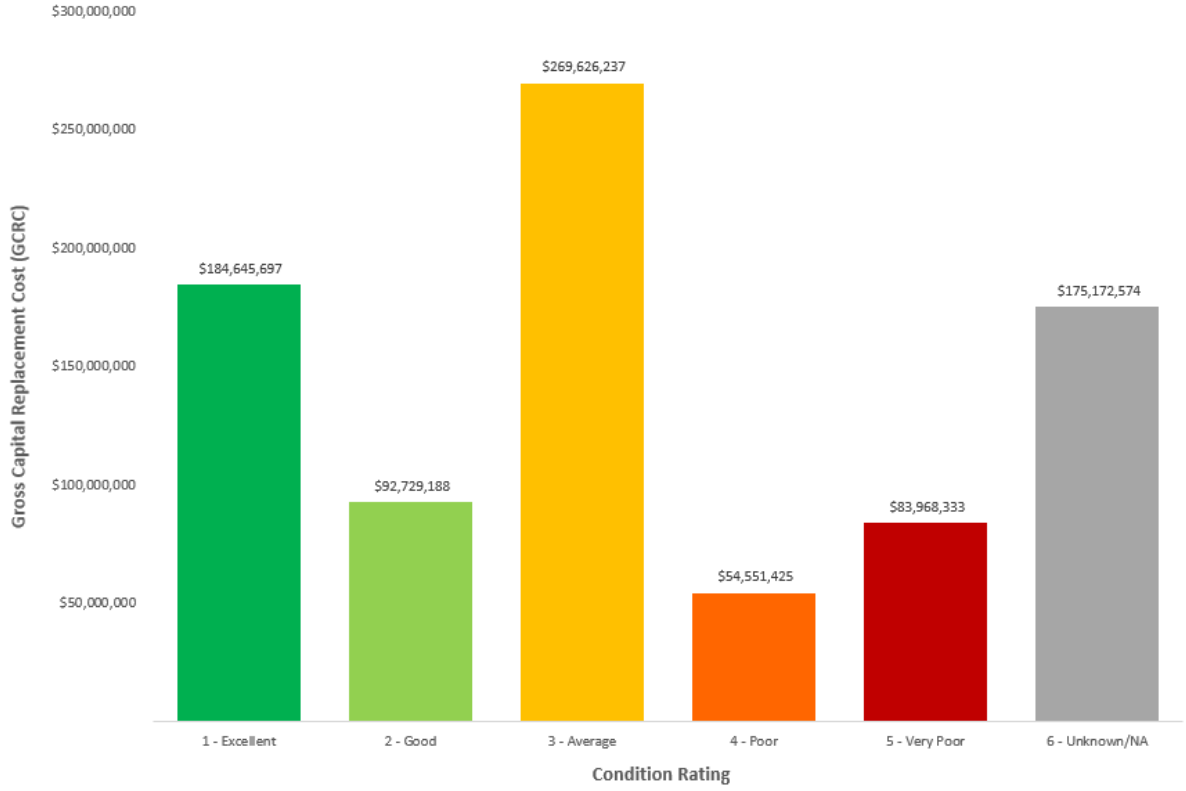
For wastewater main assets, the condition grades are based primarily on CCTV inspection records, where these are available. The condition scoring methodology is based on the NZ Gravity Pipe Inspection Manual Version 4 (NZGPIM V4). It recommends any asset scored 'poor' or 'very poor' should then have a detailed condition assessment undertaken. Across NZ, the best guidance from the water industry is that around 25-40% of 'poor' or 'very poor' condition scores remain after a detailed condition assessment. Historically this detailed assessment was not undertaken. Since the 2021-2031 LTP, the last 5 years of 'poor' and 'very poor' CCTV results have been subjected to detailed review by the Three Waters team and rescored accordingly. The reticulation renewals budget request for the 24-34 LTP has been forecast based on this review and updated. CCTV detailed condition assessment is an area where Council recognises a need to increase its capability.

A number of the defects identified are highly localised in nature and can be addressed without complete pipe replacement. This is not reflected in the data at this time. For wastewater P&E assets, there is no formalised condition assessment programme in place. For wastewater hydraulic models, there is no condition assessment currently taking place. Preparing condition assessment criteria and undertaking condition assessment forms part of the model maintenance and update process which was developed as part of the Wastewater Network Modelling project.

Actions are identified to address these issues in the Improvement Plan in section 8.4.

The condition profile of Wastewater Treatment Activity assets is shown in Figure 5.1.5.1.

Figure 5.1.5.1: Asset condition profile



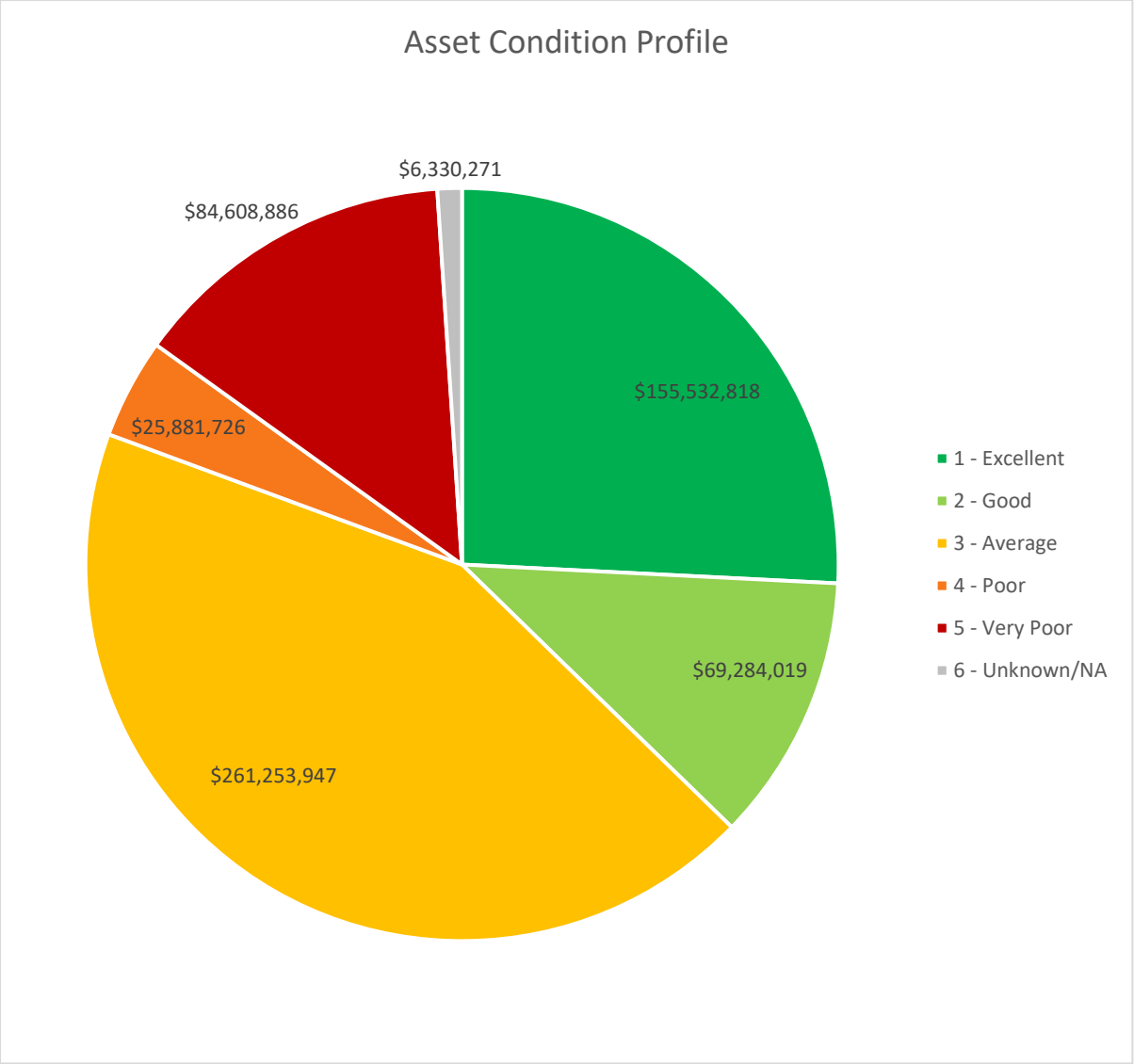
All figure values are shown in current day dollars. Graph current as of 18 January 2024.

The condition profile of Wastewater Treatment Activity critical assets is shown in Figure 5.1.5.2.

The unknown condition profile is mostly represented by “non-wastewater main” assets as most of these assets have no condition assessment.

The condition profile of the Wastewater Treatment and Disposal Activity pipe type assets is shown in Figure 5.1.5.2.

Figure 5.1.5.2: Pipe Asset condition profile (% based on GCRC)

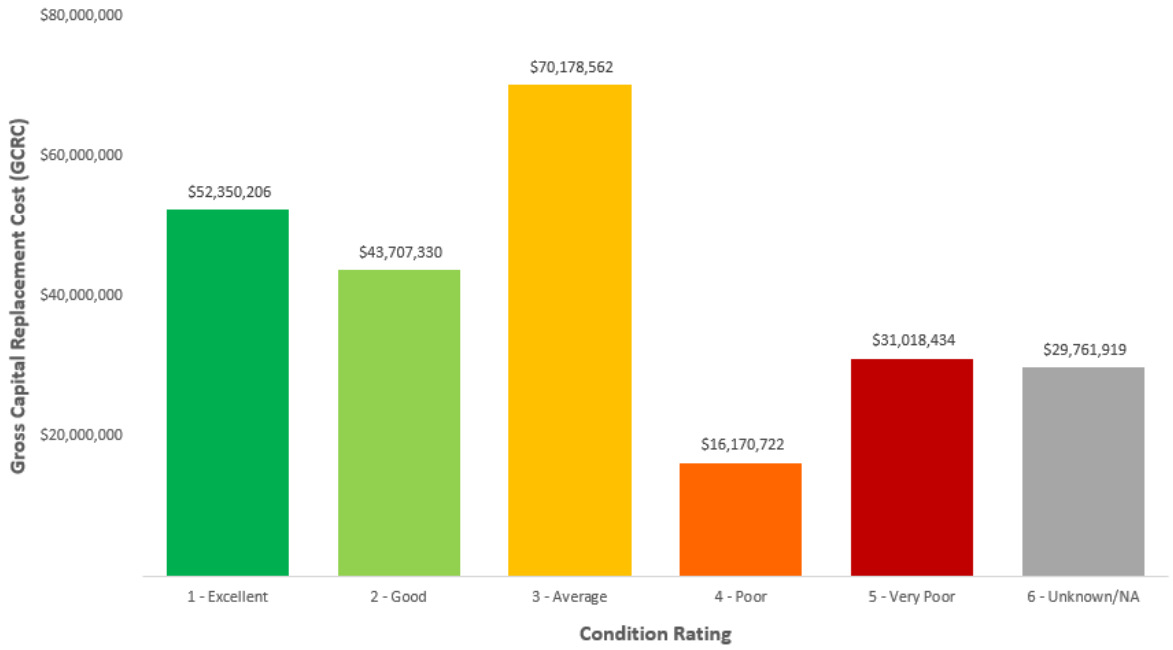


All figure values are shown in current day dollars. Graph current as of 18 January 2024.

For the pipe (mains) assets, 94km (19% of total length) were in poor or very poor condition. This represents 21% ($110M) of the GCRC for this group of assets. The renewal dependent assets are typically renewed at the same time as the base assets (trunk or reticulation mains), not individually based on their age or condition.

The criticality scores for Wastewater reticulation mains are assessed using the process and scoring system detailed in the Water, Wastewater and Stormwater Mains Criticality and Renewals Prioritisation Process (ECM#988741). These scores are converted into criticality ratings and are not related to the Critical Assets identified in Section 6.1. The condition profile of Wastewater Treatment and Disposal assets identified with a critical or important criticality ranking in the asset management systems is shown in Figure 5.1.5.3.

Figure 5.1.5.3: Critical asset condition profile



All figure values are shown in current day dollars. Graph current as of 18 January 2024.

5.2 Operations and Maintenance Plan

Operations activities are those regular activities required to provide the service. Examples of typical operational activities include monitoring inputs and outputs, cleaning, security, insurance, CCTV inspection and utility costs.

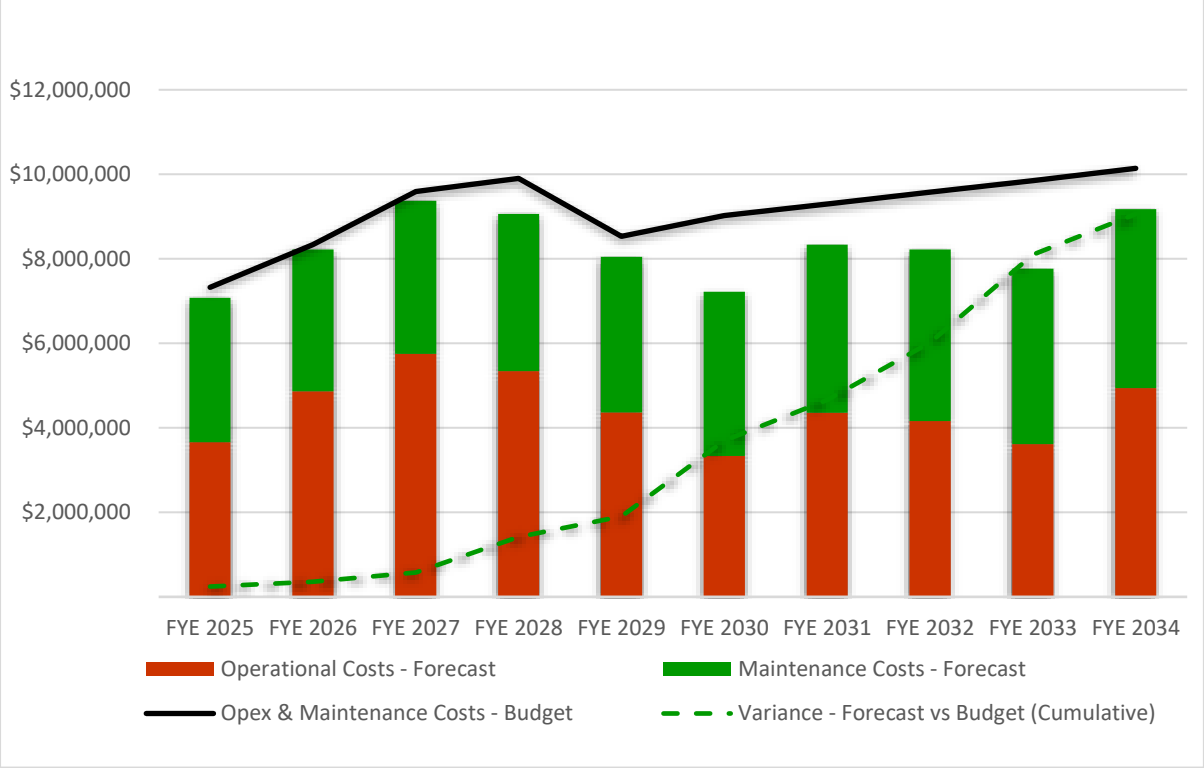
Maintenance activities are those actions necessary to keep the asset as near as practicable to an appropriate service condition including regular, ongoing day-to-day work necessary to keep assets operating. Examples include servicing of P&E, minor repairs, pipe cleaning and unblocking, pipe lining repair etc.

The maintenance budget is considered insufficient to meet planned service levels. This budget includes an allocation for both preventive and reactive maintenance. Assessment and prioritisation of reactive maintenance is undertaken by operations team members using experience and best judgement. For shared assets such as buildings, maintenance is undertaken according to the specifications in the relevant Service Level Agreements (SLA's).

5.2.1 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 portfolio. As additional assets are acquired, the future operations and maintenance costs are forecasted to increase. Where assets are disposed of the forecast operations and maintenance costs are expected to decrease. Figure 5.2.1 shows the forecasted operations and maintenance costs relative to the proposed operations and maintenance budget.

Figure 5.2.1 Operations and Maintenance Summary



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

The initial general operation and maintenance budget request was made under the direction of previous legislation that Three Waters could only be included for only the first two years of the LTP. As such, maintenance and general operation budgets were based on an extrapolation from historical spend amounts and were not subject to a full forecasting process.

On advice from AuditNZ that Council should be including a full 10-year forecast for Three Waters, the general operation and maintenance budgets have been subject to a full forecast exercise. Most of the variance in the figure above is due to the increase between the initial forecast and the received budget. The maintenance budget matches this updated forecast for the 10-year period, so there is no deferred maintenance for the next LTP.

Approximately 25% of the total operations budget is consequential opex associated with capital projects. This opex funds the portion of projects that cannot be capitalised such as elements of hydraulic model use, early project investigation and concept optioneering, and additional operations and maintenance costs once a project is complete. The variance between operations forecast vs budget is primarily driven the deferral of the associated capital projects. The largest of these is the Waitara wastewater transfer upgrade ($1M) and the wastewater pump-station overflow prevention programme ($0.8M).

5.3 Renewal Plan

Renewal works are those activities that restore, rehabilitate, replace or renew existing assets back to the original or 'as new' standard. This work does not significantly alter the original service provided. Any work that goes over and above renewal work is considered to be an acquisition (see Section 5.4).

Assets that require renewal are determined through:

- Asset condition assessments that return assessments of 'poor' or 'very poor'
- Remaining Useful Life (RUL) information and values captured in the asset register
- Staff judgement on the remaining life of the asset, based on asset condition, maintenance expense, or average renewal requirements for network assets (for example buried pipes or road renewals)

Renewals may be initiated for an asset prior to scheduled end-of-life dates if other works are planned to occur in the same area and efficiencies may be gained by undertaking scheduled renewal works at the same time. This approach may also be applied when Council assets are impacted by other organisations. For example, if a road is being trenched to work on power or phone lines, Council may decide to renew the nearby water, wastewater or stormwater pipes before the road surface is re-sealed. This approach will minimise overall disruption and rework and could ultimately provide financial cost efficiencies for Council and ratepayers.

5.3.1 Asset age and remaining useful life

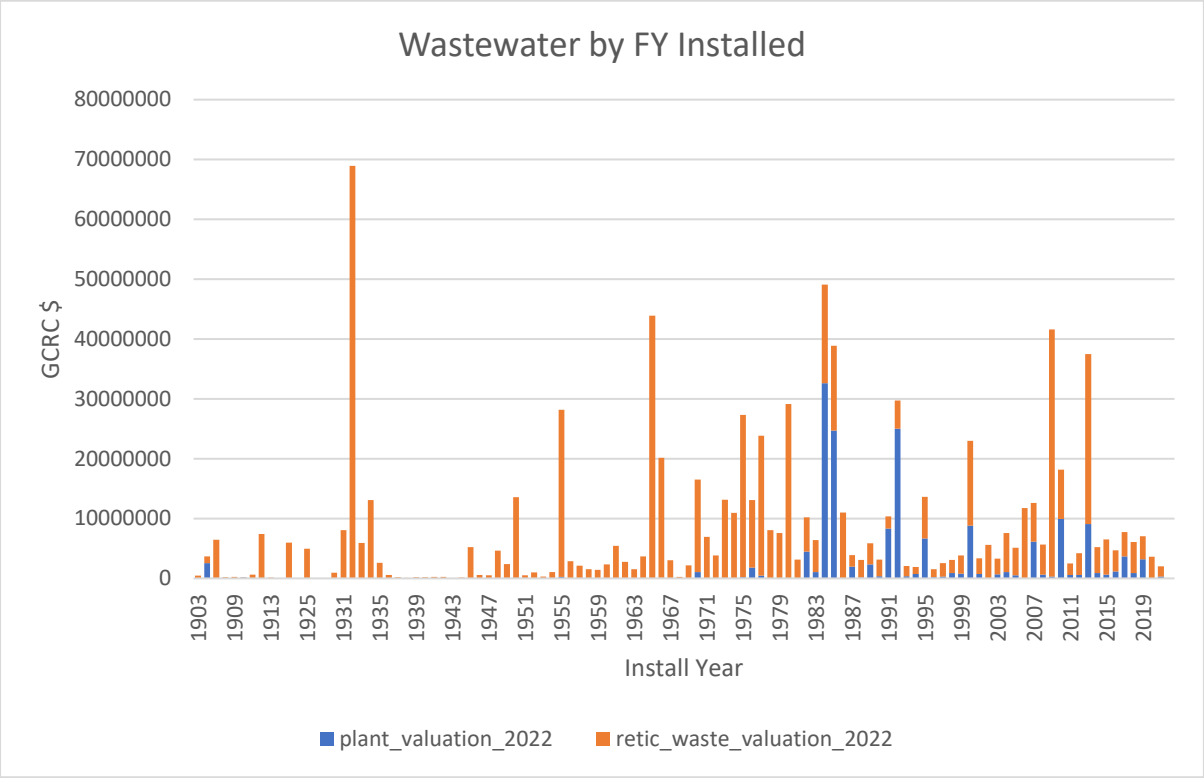
The total useful lives of the assets in this AMP are shown in Table 5.3.1. Asset useful lives were last reviewed in June 2022 as part of Council's scheduled asset valuation process.

Table 5.3.1: Total useful lives of assets

Asset Category	Description	Asset Type	Total useful life (yrs)
Reticulation	Mains	Plastic, concrete pipe	80-110
		Glazed Earthenware Pipe	120
		Asbestos Cement Pipe	70
	Service Laterals		(same as mains)
	Manholes		80-100
	Valves		50
	Outfalls		100
Plant and Equipment	Mechanical and electrical equipment		20-100
	Structures (Pump stations and treatment plant)		50-100
Consents			10-30
Hydraulic Models			10

The age profile of the assets included in this plan are shown in Figure 5.3.1.1.

Figure 5.3.1.1: Asset age profile



All figure values are shown in current day dollars.

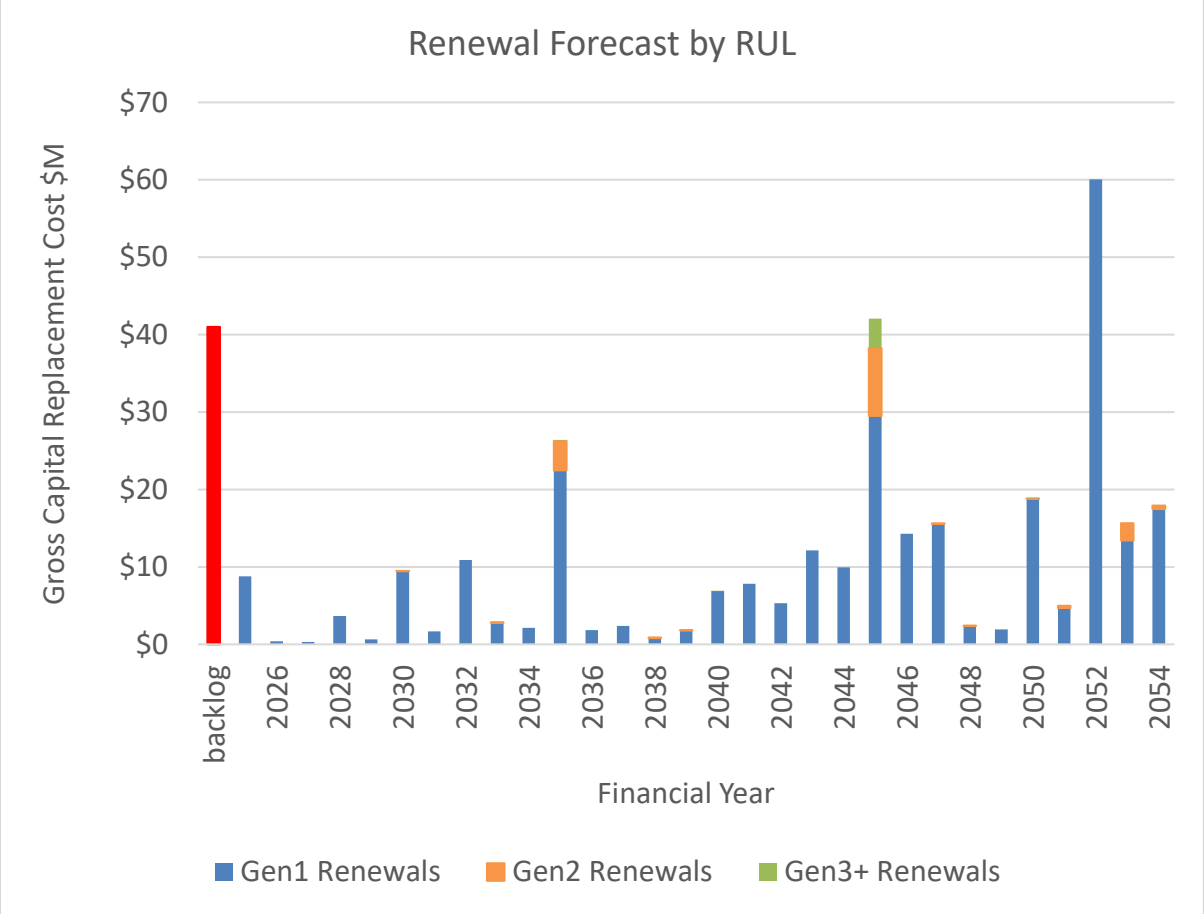
Figure 5.3.1.2 provides a thirty year forecast of the future renewal requirements based on RUL. This information is often used to guide long-term planning (i.e. ten to thirty years), but is less frequently used to guide short to medium-term planning (i.e. one to ten years), as Council's data does not consistently consider factors such as condition assessment within the recorded RUL figures. For this reason, the renewal forecast in this AMP is primarily based on condition assessment and staff judgement. Strengthening the overall quality of data within the asset management information systems is a planned future improvement.

Figure 5.3.1.2 shows in red the assets overdue for renewal (backlog) being $25M of reticulation assets and $15M P&E assets. The reticulation backlog is mainly composed of concrete pipes that are due for renewal ($21M). There are approximately $0.6M assets in the asset management system without an expected life, where a default install date of 1904 has been used and included in the backlog.

The spike in 2035 is due to a large number of pipes coming up for renewal that year. It is likely that an assumption has been made in the install date of these assets which should be investigated further.

Overall this method predicts $82M of renewals required within the timeframe of this AMP.

Figure 5.3.1.2: Asset renewal forecast by RUL



All figure values are shown in current day dollars.

This can be compared against the $110M of renewals required if the condition data is assumed to be representative. This projection is based on renewing the 19% of pipes in poor and very poor condition along with their dependent assets (manholes and service connections, which typically get renewed at the same time). The difference in the estimates is due to a number of factors including:

- The renewal of “dependent” assets such as manholes and service connections that may not have reached their useful life but are either impossible or not cost effective to renew separately.
- The early renewal of assets due to LoS upgrades associated with that asset.
- Assets requiring renewal before their expected useful life is complete. This can be due to a range of drivers but is most commonly associated with installation quality issues.
- The high degree of uncertainty in estimating the gross capital replacement cost used in Figure 5.3.1.2.
- The change in expectations around level of service and what of this change should be covered by renewal budgets and what by LoS.
- The ever increasing expectations around engagement and consenting.

The renewal forecast in this AMP is primarily based on asset criticality, age, condition (where available) and staff judgement. Strengthening the overall quality of data within these asset management information systems is a planned future improvement.

5.3.2 Renewal ranking criteria

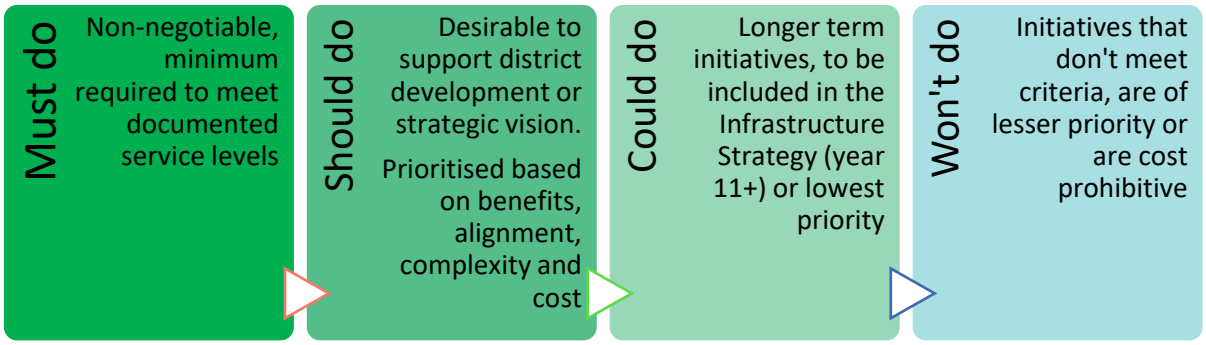
Asset renewal is typically undertaken to either:

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

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, or
- have potential to reduce lifecycle costs by replacement with a modern equivalent asset that would provide the equivalent service at a reduced cost

Council prioritises renewals as part of the project prioritisation process, occurring as part of Council's legislatively required LTP process. The initial assessment stage of the project prioritisation process is most crucial for renewals, and divides projects into four categories:



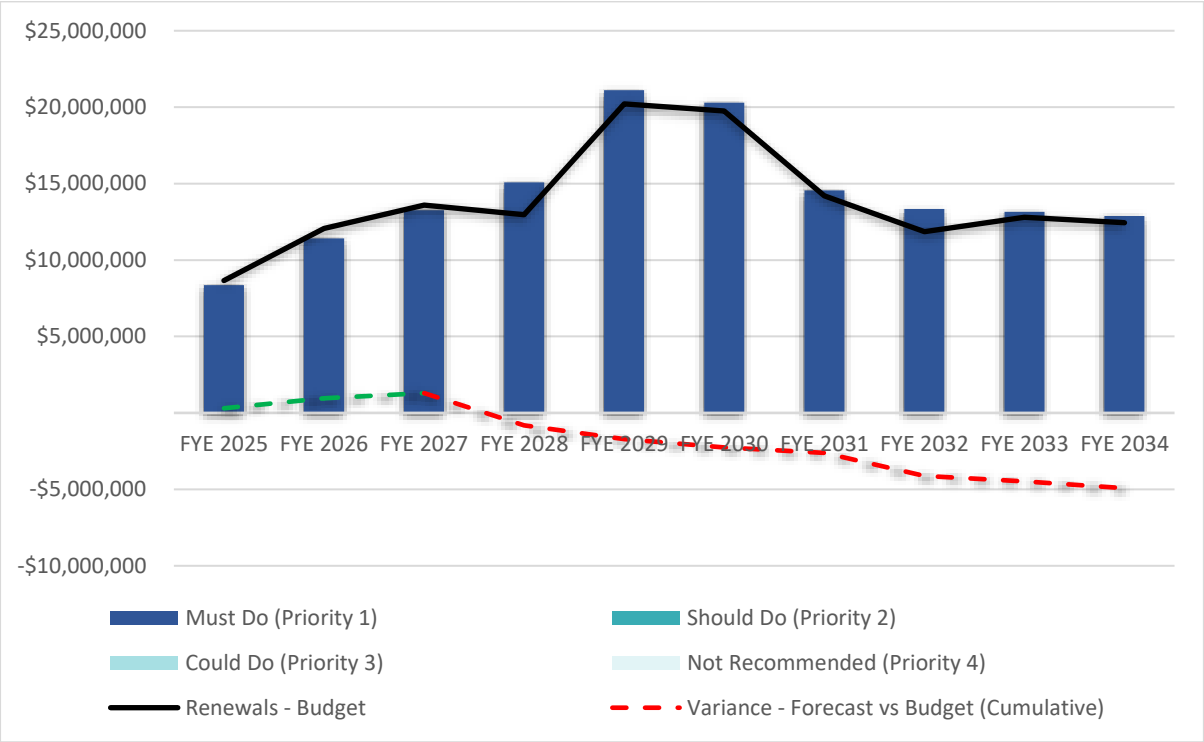
The 'Must do' category includes all critical renewals (including the mitigation of risks ranked medium and above) and the standard renewal budgets for small recurring renewals (these are primarily miscellaneous budgets of <$100K/year).

Non-critical asset renewals are captured in the 'Should do' category and undergo prioritisation as described in Section 5.4.1. (Note: Critical assets are detailed in Section 6.1).

5.3.3 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 Figure 5.3.3.

Figure 5.3.3: Forecast renewal summary



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

All wastewater renewals projects were categorised as 'Must Do' during the LTP prioritisation process.

The bulk of the requested renewals funding has been provided. The requested budget for the Wastewater Reticulation Renewals has been reduced to meet deliverability and resource constraints.

The $3.5M reduction between the Request and Budget is also driven by the deferral of a number of level of service and growth projects that had a minority renewals component.

5.4 Acquisition Plan

Asset acquisitions include the following types of projects:

- projects that create assets that did not previously exist
- works which will upgrade or improve an existing asset beyond its current capacity, and
- assets that may have been donated to Council

The drivers for undertaking acquisition projects or acquiring new assets can be due to level of service changes, growth, or a combination of each. Renewal works may also be combined with acquisition projects where there is a desire to change service levels or respond to growth.

5.4.1 Selection criteria

Proposed acquisitions of new assets, and upgrading of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others.

Council has a documented project prioritisation framework that provides a transparent and structured approach to reviewing and prioritising projects for inclusion in our LTP. The same process and prioritisation criteria are used for both acquisition and renewal projects.

Proposed upgrade and new work analysis also include the development of a lifecycle costs estimate to ensure that the services are sustainable over the longer term. This is captured within the Detailed Business Case which is prepared for all except the simplest projects.

The priority ranking criteria and weighting is detailed in Table 5.4.1.

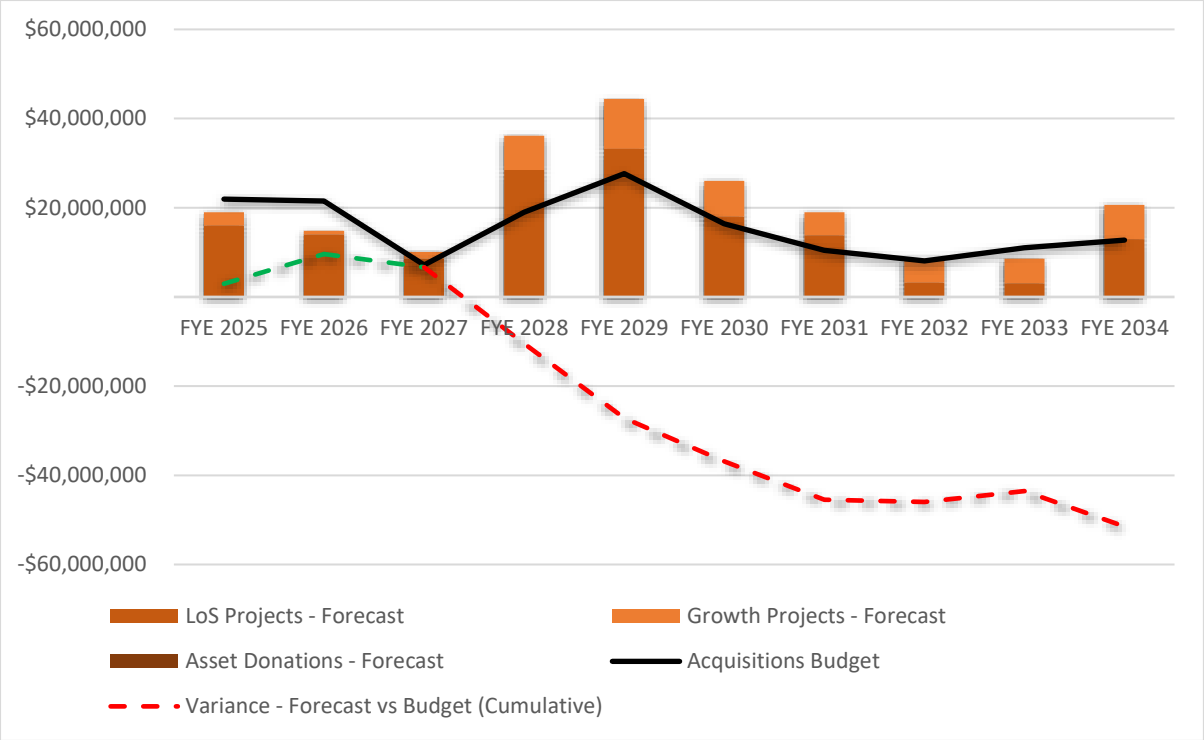
Table 5.4.1: Project prioritisation criteria & weighting

Criteria	Weighting
Strategic alignment	35%
Benefits	20%
Level of Service	15%
Risk Mitigation	15%
Ease of execution	15%
Total	**100%**

5.4.2 Summary of future acquisition costs

Forecast acquisition asset costs are summarised in Figure 5.4.1 and are shown relative to the proposed acquisition budget.

Figure 5.4.1: Acquisition summary



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

Projects which have been deferred within this LTP from the forecasts completed prior to the initial budget request include the Inglewood Oxidation Pump Station upgrade (completion delayed from 2029 to 2034) and Smart Road growth sewer (commencement delayed from 2028 to 2032). Projects which have been deferred until beyond this LTP due to affordability and deliverability constraints are primarily LoS projects and include the Waitara Wastewater Transfer Upgrade ($11M), the Pump Station Overflow Prevention programme ($4M), Wastewater Pipe Bridge Upgrade programme ($3M) and Major Ōākura pump station upgrades ($10M, Corbett Park and Shearer Reserve).

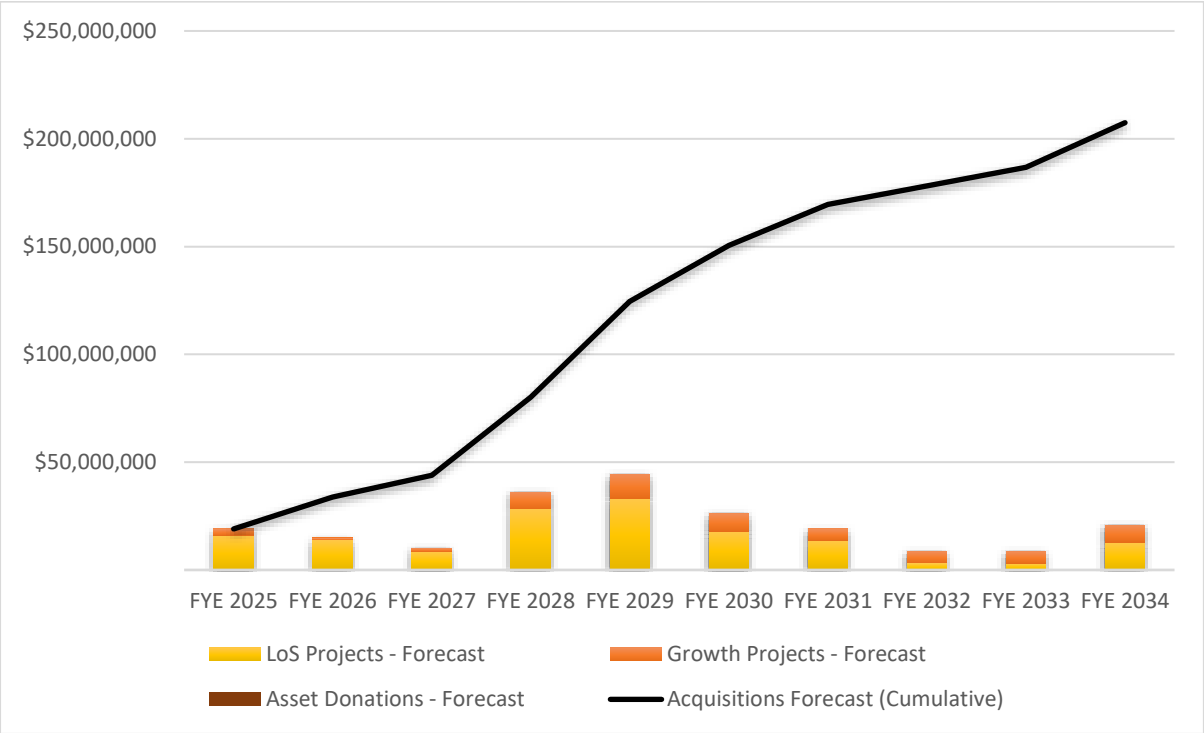
The Lorna St Sewer Upgrade ($1M) has been removed from the LTP as updated hydraulic modelling undertaken after the initial forecast request showed that this project was no longer required.

For all new assets there are corresponding future operations, maintenance and renewal costs that must be accounted for within the LTP. Future depreciation must also be considered when reviewing long-term sustainability. This is one activity within the LTP process that Council needs to improve upon, as clarity on the lifecycle costs of future acquisitions will ensure that these costs are factored appropriately into Council's lifecycle budgeting.

Refer to Section 6.4.1 for further projects which were requested but not considered for the LTP.

The cumulative value of all acquisition work, including both constructed and contributed assets are shown in Figure 5.4.2.

Figure 5.4.2: Cumulative asset acquisition



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

Expenditure on new assets and services in the capital works programme will be accommodated in the LTP, but only to the extent that there is available funding.

Historically wastewater assets are vested to Council (donated) by developers at the completion of their subdivisions, at which time Council takes over the operation and maintenance of these assets. We have used historical values of assets vested to estimate future values.

5.5 Disposal Plan

Disposals include any activities associated with the disposal of a decommissioned asset. This includes the sale, demolition, or the relocation of the asset.

Assets identified for possible decommissioning and disposal are shown in Table 5.5. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.5. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 5.5: Assets identified for disposal

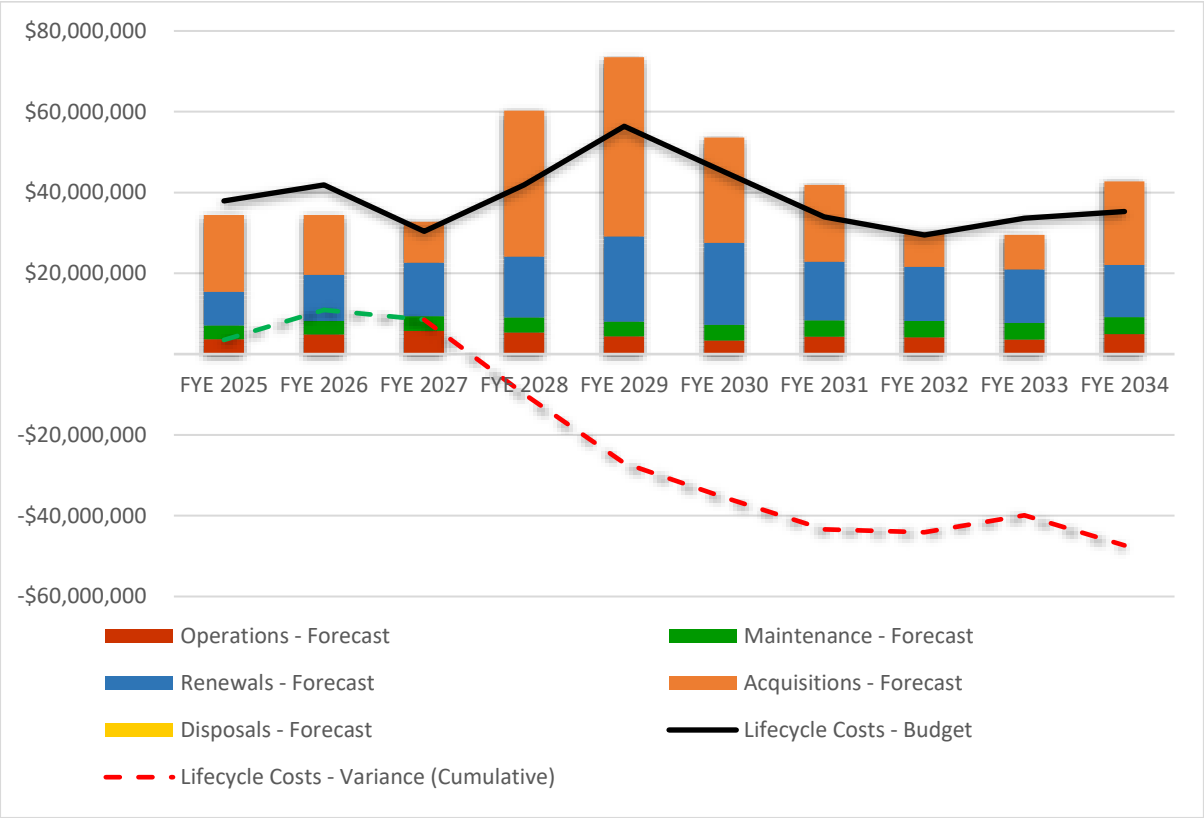
Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
WWTP Admin building and Laboratory	Structure is 34% NBS seismic rating and laboratory is under capacity. A new facility is being constructed.	2028-2031	-	TBD
Thermal Dryer Facility	Facility is at end of life and ongoing maintenance is uneconomical. A new Dryer is under construction.	2025-2026	-	TBD
Assets pipe renewals or replacement	Asset disposal is not primarily included as part of renewals consideration as most wastewater collection assets are not physically removed and disposed of to allow for the replacement component. The renewal dependent assets are typically renewed at the same time as the base assets (trunk or reticulation mains), not individually based on their age. These assets will also need to be disposed.	Related to renewals forecast	-	-

5.6 Summary of forecast costs

The financial projections from this AMP are shown in Figure 5.6.1. 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 graph represent the forecast costs needed to optimise the lifecycle management of these assets and ensure alignment with community needs/expectations. 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 5.6.1: Lifecycle Costs Summary



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

Reviewing the lifecycle summary costs for the timeframe of this AMP, the organisation's budgets are in reasonable shape for the forecasted costs. However, there exist clear financial gaps between what funds Council has available versus what Council needs to spend in order to meet the future demands of district residents.

The high prevalence of renewal costs stems from a historical lack of renewals (ie: a backlog) stems from Council decisions made during the 2007-2009 global financial crisis. This backlog led to a number of assets not being replaced when required, which subsequently resulted in a deterioration in the overall condition of the wastewater network, as well as increasing overall asset maintenance costs.

A major focus of this LTP is on reducing the current impacts of wastewater on the environment. Significant capital projects that focus on this include the Urenui and Onaero Sewer System ($37M) and a ten year programme of wastewater network upgrades designed to greatly reduce the existing overflows across Waitara and Inglewood ($23M).

The WWTP has a focus to address current health and safety risks, maintain efficient operations, and allow for future growth in the district. These projects include the Thermal Dryer Facility replacement ($26M), main control and laboratory building replacements ($19M), and a masterplan update that will

include construction of a buffer storage facility to divert and detain peak flows that occur during heavy rainfall, which currently risks overwhelming the treatment plant.

Projects to enable growth to occur that will become limited in the future by the current wastewater network layout and capacity in the Inglewood-Bell Block catchment include the Inglewood oxidation pond pumpstation upgrade ($10M), Eastern sewer realignment ($11M) and Bell Block trunk main upgrade ($7M).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Risk Management Planning

The purpose of risk management planning is to identify and address the potential risks and opportunities associated with Council's infrastructure assets. This section defines those assets which are critical to operations and the potential results of failure; the significant (high or extreme) risks being managed including those risks outside of Council's appetite; and considers the resilience of these assets in the context of service delivery.

6.1 Critical Assets

Critical assets are defined as:

"Assets that are significant in providing essential services to our community, and which may also be important in emergency situations. These assets have high consequences of failure, and as such require a higher level of proactive maintenance and management."

NPDC does not currently have a specific methodology for the identification and grading of critical assets. Table 6.1 describes those assets which meet the above definition as determined by the asset owner, as well as the mode by which the asset could fail, and the likely impact of that failure. Developing and implementing a specific methodology for determining critical assets is identified as an improvement action in Section 8.

Table 6.1: Critical Assets

Critical Asset(s)	Failure Mode	Impact
NPWWTP	Collapse or blockage of treatment plant, collapse of Admin building containing electrical switchboard	Plant must be operated remotely. Plant performance degraded, leading to widespread network disruption.
Marine Outfall	Collapse or blockage	Treated wastewater discharge to river or land
Waitara Transfer Pump Station and Rising Main	Stopbank failure or building collapse caused by earthquake	Untreated wastewater discharge directly to the Waitara River
Te Henui Pump Station and Rising Main	Pump station failure due to coastal inundation or mechanical/electrical failure	Untreated wastewater discharge to ocean via Woolcombe Terrace outfall
Inglewood Pump Station and Rising Main	Pump failure	Partially treated wastewater discharge to Kurapete Stream (currently consented)
Ōākura Pump Station and Rising Main	Pump failure	Untreated wastewater discharge to Wairau Stream

By determining critical assets, operations, maintenance and renewal strategies can be refined, inspections and investigations can be prioritised, high risk information gaps can be identified, and confidence in programming of works is increased.

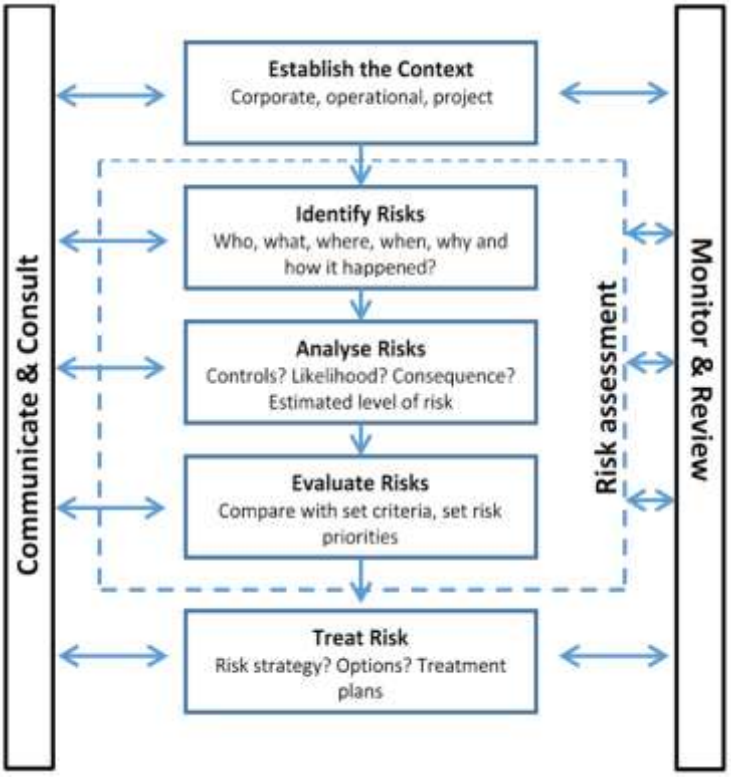
Critical assets will be prioritised when allocating maintenance and renewal funding, undertaking condition assessments and for improvement works.

6.2 Risk Assessment

Risk is an inherent element of all Council operations, and the management of these risks is a critical element of ensuring the organisation is able to deliver services and meet its obligations. For risk management to be effective, Council has developed and utilises its Corporate Risk Management Framework - Policy and Process (ECM#1479536). This internal document is based on the fundamentals of ISO 31000:2009 (Risk Management) and provides key information and advice for how risk assessments are conducted, recorded, managed, escalated and monitored.

The five key steps to Council's risk management procedure are establishing the context, risk identification, analysing risk, risk evaluation and risk treatment – as illustrated in Figure 6.2.

Figure 6.2: Risk Management Framework



A summary of the current key risks relevant to the Council's assets is included in the Risks and Improvements section of the Asset Management Strategy. The list includes risks to the specific assets, risk to service delivery, and risk relating to the overarching asset management system.

6.2.1 High level risks

Identification of high and extreme risks ensures that Council can prepare for situations that may result in negative consequences such as the loss or reduction of a service, injury, financial damage, loss of reputation, damage to the environment and more.

Table 6.2.1 lists all high or extreme risks that are relevant to the management of wastewater assets. This may overlap with the generic risks identified in the strategy but will focus on the actions to be taken to address those risks. Prioritisation of the projects relating to these risks occurs in P3M (Council's Projects, Portfolio and Programme management software).

Table 6.2.1: Planned treatments for identified high and extreme level risks

Risk Type	Description	Current risk rating	Proposed Risk treatment actions	Post treatment risk rating	Relevant projects
Operations and service delivery, Environmental, Financial, Governance, Health, Safety and Wellbeing	There are sewage overflows to the environment at Inglewood and Waitara because of existing sewer capacity constraints across the networks in those locations, resulting in environmental damage, clean-up and remediation costs, service delivery disruption, regulatory intervention, reputational damage, and potential public health impacts.	High	Planning is underway for a programme of upgrades in Inglewood that will reduce the occurrence of overflows. Planning for the Waitara network is also underway but is less advanced. Programme and project budgets for both areas are included in the 24/34 LTP.	Medium	Inglewood wastewater overflow programme, Waitara wastewater overflow programme
Property and Assets	The electrical distribution board located in the main control and laboratory Building at the NPWWTP could be destroyed in a significant earthquake because of sub-optimal performance of the building (it has been assessed as an earthquake risk - 34% of NBS), resulting in disruption to wastewater services for over a week.	High	Plant can be controlled remotely. Planning underway to either upgrade the existing building or move the building and reinforce the switchboard area. There is a project to construct a new main control and laboratory building.	Low	NPWWTP main control and laboratory building replacement

Governance/Legislative Compliance and Control	Council is unable to meet the conditions of current consents for effluent discharges at Onaero Beach and Urenui motor camps because of the inability of existing infrastructure at those sites to cope with current and anticipated wastewater flows, resulting in continual consent breaches and potential prosecution.	High	Council proactively reports exceedances to TRC and is undertaking additional monitoring including installing bores at the leachfields by December 2024 to get a better understanding of the impact on the environment. Council is also working with TRC and Ngāti Mutanga on the renewal of the consents that would make the existing activity allowed for the next ten years. In parallel, Council is investigating options to reduce inflow and infiltration to the schemes which will in turn reduce the peak flows and the number and magnitude of the consent breaches. A consultant is providing technical advice on managing systems to reduce environmental impacts, and Council is updating the operation and management plans for the schemes. NPDC is also planning a new wastewater collection, treatment and disposal scheme for Urenui and Onaero so the existing disposal fields can be decommissioned.	Insignificant	Urenui and Onaero sewer project, Onaero leachfield replacement
Legislative Compliance and Control	There is an overflow from the Mangāti pump station because there is little emergency storage (only around three to five minutes' worth) in the event the pumps fail for any reason, resulting in environmental damage from sewage and potential prosecution.	High	The Area Q pump station is now operating, which takes some load off the Mangāti pump station. A standby generator for the Mangāti pump station has been installed. An options study for storage at this pump station and failure mode analysis have been undertaken. A project to install emergency storage at Mangāti pump station is underway. This has been approved by Council but will take 2-3 years to build.	Medium	Mangāti pump station emergency storage
Health, Safety & Wellbeing Financial Operations and Service Delivery Property and Assets	The Waitara Wastewater transfer pump station (Waitara WWTPS) is damaged because an earthquake (with a 1/1000 annual exceedance probability) causes a failure of the stopbank on which the station is located, resulting in environmental damage through the discharge of untreated sewage to the river, and subsequent service disruption to the community for a prolonged period (potentially several weeks).	High	A project to upgrade the Waitara WWTPS is being developed. The project will assess the probable level of damage to the existing transfer station in more detail and identify what seismic strengthening measures (if any) are feasible.	High	Waitara Wastewater transfer upgrade (unfunded)

Property and Assets	There is reduced operating efficiency at the NPWWTP because of illegal dumping or high volumes of trade waste, resulting in breakdowns or unplanned maintenance to ensure continued service delivery.	High	Trade waste bylaw and officer. Both currently well implemented. Still some residual risk due to extent of network and opportunity for abuse. An additional scenario has also been added to the incident response plan to outline how these situations will be dealt with.	Medium	

Note: Current risk is the risk at the point in time this AMP is published, it is not reflective of the full untreated (inherent) risk. The post-treatment risk is the residual risk once the proposed treatments have been implemented.

6.2.2 Risks outside of Council's appetite

It is not always possible to remove all risks. For a treatment to be considered effective the residual risk must be within NPDC's risk appetite. NPDC's risk appetite varies depending on the Risk Category:

- Averse means generally avoiding or eliminating a risk because of its potential impact on Council's service delivery (e.g. disruption to drinking water supply) and/or the health and safety of our staff or the public.
- Balanced means having a flexible approach depending on the nature of the risk, weighing the consequence of not achieving an objective if the risk is avoided or eliminated with the cost of implementing controls.
- Tolerant means being willing to take on significant risks to exploit opportunities associated with activities that support the achievement of Council's strategic goals, despite potentially major consequences if a risk is realised.

The following table defines those projects for which risk is not within Council's appetite, but a decision has been made to delay or not undertake remedial works.

Table 6.2.2: Justification and future treatment for risks outside of NPDC's appetite

Risk Type	Risk Appetite	Description	Current risk rating	Risk treatment actions	Justification for delay to remedy
Health, Safety & Wellbeing Financial Operations and Service Delivery Property and Assets	Averse - Medium	The Waitara WWTPS is damaged because an earthquake (with a 1/1000 Annual Exceedance Probability) causes a failure of the stopbank on which the station is located, resulting in environmental damage through the discharge of untreated sewage to the river, and subsequent service disruption to the community for a prolonged period (potentially several weeks).	High	A project to upgrade the Waitara WWTPS is being developed. The project will assess the probable level of damage to the existing transfer station in more detail and identify what seismic strengthening measures (if any) are feasible.	Budget constraints, very low likelihood of occurrence
Project/Quality Management	Balanced – High	Delays in project delivery and/or inability to deliver on the AMP programme due to inadequate internal staff.	High	Unclear at this time. Council is in the process of restructuring which is currently impacting capacity to deliver due to unfilled roles and may continue to impact resourcing depending upon its final outcome.	Public and Councillor perception around headcount and efficiency and effectiveness of Council internal resources.

6.3 Resilience

The New Zealand Infrastructure Strategy/Rautaki Hanganga o Aotearoa describes resilience as "*the ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving*."

Resilience differs from risk management as it is focused on management of events that are either unpredictable or have a very low likelihood of occurring, but which have high consequences. In addition, these events are typically complex with multiple interdependencies and therefore have added complexity. This includes events such as natural disasters, economic crises, significant infrastructure failure, cyber-attacks, global conflict, terrorism and climate change.

Improving the resilience of our assets and adapting to climate change are key drivers for Infrastructure management at NPDC. Table 6.3 describes how Council is ensuring resilience and reliable delivery of our wastewater treatment assets.

Due to its nature, failure of the wastewater network normally has a significant effect on everything within an area of overflow but minimal effects outside of that area. Within the overflow area key impacts are typically public health concerns, environmental harm and loss of amenity. Upstream of an overflow area there may be loss of service to those residents/buildings connected to the network.

Table 6.3: Potential Failure points of Wastewater assets

Event	Key point of failure
Earthquake	Liquefaction causing loss of function of piped network and pump stations, especially in Waitara. Shaking causing loss of function of piped network, pump stations, treatment plant and outfalls Lateral spread of Waitara river stopbanks causing loss of function of Waitara WWTPS
Flood	Surface flooding causing very high levels of Inflow and Infiltration, overwhelming the capacity of the piped network causing overflows of untreated wastewater to the environment, especially in Inglewood and Waitara
Heavy Rainfall	Heavy rainfall overwhelms the capacity of the piped network causing overflows of untreated wastewater to the environment High flows exceed the hydraulic capacity of the treatment plant, causing overflows or untreated or partially treated wastewater
Coastal Erosion	Wastewater disposal fields built in areas with high coastal erosion risk
Coastal Flooding	Infrastructure built in areas with high flood risk
Tsunami	Infrastructure built in areas with high flood risk
Volcanic Eruption	Lahar and ashfall causing damage to treatment plant and pump stations Ashfall causing widespread loss of electricity network, causing loss of power at pump stations leading to overflows of untreated wastewater Ash entering the wastewater network and causing blockages (potentially very hard to remove)
Climate Change	Increased frequency and intensity of heavy rainfall, floods, coastal erosion, coastal flooding and Tsunami and their associated effects
Cyber Attack	Computer control and monitoring systems and online documented information becomes unavailable, leading to overflows of wastewater to the environment

6.4 Service and Risk Trade-offs

The decisions made during the preparation of the LTP are initially guided by the first draft of this AMP and are later reflected in the final iteration. The goal is to ensure that the optimum benefits are received from the available resources, then capture where Council will be unable to achieve all the intended outcomes.

6.4.1 What we cannot do

The following is a list of the operations and maintenance activities and capital projects that Council is unable to complete within the next ten years. These include:

- Te Henui PS upgrade
- Corbet Park PS upgrade
- Shearer Reserve PS upgrade
- Pump Station Overflow prevention
- Wastewater Pipe Bridge upgrade programme
- Alternative for disposal of dewatered sludge at NPWWTP
- Ōkato Wastewater Management Review (Kaitake CB Project)
- Waitara Wastewater Transfer Upgrade
- Smart Road growth sewer – will be started but not completed

6.4.2 Service Trade-offs

Work unable to be completed will result in a service consequence to users. This trade-off is necessary to retain a reasonable balance between expenditure and service. The service consequences resulting from the work that cannot be done include:

- There will be no capacity or resilience improvements to the Waitara WWTPS, which could restrict future growth in the Waitara catchment
- Growth in the Smart Road area will be restricted until the growth sewer project is completed
- Shearer Reserve and Corbett Park pump stations will have increased ongoing operation and maintenance costs and higher risk of failure because of the existing operational issues
- Urban areas that currently use septic tanks will remain so for the timeframe of the LTP

6.4.3 Risk Trade-offs

Work unable to be completed may also create risk consequences. These risk consequences include:

- Waitara WWTPS remains at risk of failure during a seismic event, potentially causing extended service disruption to the Waitara community
- The existing overflow risk due to lack of storage will remain at many pump stations across the network
- The current understanding of the risk of failure of the wastewater pipe bridges will remain unknown. Many of these are inherently vulnerable to damage from natural hazards (i.e. below the 1:100 flood levels) and previous inspections have focused on the pipes without providing any data on the structural condition of the bridge itself

Financial Summary

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

7.1 Financial strategy

Council's financial strategy and accounting policies are documented in the Financial Information section of the LTP. This financial strategy 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.

7.2 Financial Sustainability & Projections

7.2.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in this AMP, they include:

- The asset renewal funding ratio, and
- The current asset funding indicator

Asset Renewal Funding Ratio

The Asset Renewal Funding Ratio (ARFR) is an important indicator that provides context for Council's planned renewals.

$$\text{ARFR (\%)} = \frac{\text{Proposed renewal budget for 10-year period}}{\text{Forecast renewal costs for 10-year period}} \times 100$$

The calculation is shown in Table 7.2.1.1.

Table 7.2.1.1: Renewal forecast

Indicator	Value
10-year renewal budget	$138,535,330
10-year renewal forecast	$143,458,195
Asset Renewal Funding Ratio	96.6%

The ARFR calculates Council expects to have 96.6% of the funds required for the optimal renewal of assets over the next 10 years.

Current Asset Funding Indicator

The Current Asset Funding Indicator (CAFI) identifies the capacity of the organisation to fund the ongoing operations, maintenance and renewal of the existing asset portfolio in a sustainable manner.

$$\text{CAFI (\%)} = \frac{\text{Proposed operation, maintenance \& renewal budget for 10-yr period}}{\text{Forecast operation, maintenance, and renewal costs for 10-yr period}} \times 100$$

This calculation is shown in Table 7.2.1.2.

Table 7.2.1.2: Existing asset funding sustainability

Indicator	Value
10-year proposed budget for existing assets	$230,111,122
10-year forecast costs for existing assets (operations, maintenance & renewals)	$225,974,214
Average annual funding gap	-$413,691
Current Asset Funding Indicator	101.8%

The CAFI shows there is effectively no shortfall, as 101.8% of the forecast costs needed to provide the services documented in this AMP are accommodated, over the 10-year term of this plan using the proposed budget. Note: these calculations exclude acquired assets.

The CAFI is masked however by the increased general operational and maintenance budget described in Section 5.2.1. When this 'surplus' is excluded, there is an average annual funding gap of $630k per annum and the CAFI shows 97.3% of the forecast costs needed to provide the services documented in this AMP are accommodated in the proposed budget.

7.2.2 Forecast costs for the Long-Term Plan

Table 7.2.2 shows the expenditure forecast summary (outlays) required for consideration in the LTP.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels and the planned budget allocations in the LTP.

A financial 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 possibly revising the LTP).

We will manage this financial 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 FY24 dollar values.

Table 7.2.2: Expenditure forecast summary

Activity	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	LTP Total
Operations	$3.66M	$4.86M	$5.75M	$5.34M	$4.36M	$3.33M	$4.36M	$4.16M	$3.62M	$4.94M	$44.39M
Maintenance	$3.42M	$3.36M	$3.62M	$3.72M	$3.68M	$3.89M	$3.98M	$4.06M	$4.15M	$4.24M	$38.13M
Total OPEX	**$7.08M**	**$8.22M**	**$9.38M**	**$9.06M**	**$8.04M**	**$7.22M**	**$8.33M**	**$8.22M**	**$7.77M**	**$9.18M**	**$82.52M**
Level of Service	$15.96M	$14.04M	$8.59M	$28.45M	$33.22M	$18.00M	$13.84M	$3.23M	$3.07M	$12.97M	$151.36M
Growth	$3.06M	$0.78M	$1.54M	$7.69M	$11.17M	$8.06M	$5.18M	$5.37M	$5.51M	$7.71M	$56.08M
Renewals	$8.35M	$11.42M	$13.26M	$15.09M	$21.10M	$20.30M	$14.55M	$13.34M	$13.16M	$12.88M	$143.46M
Total CAPEX	**$27.37M**	**$26.25M**	**$23.38M**	**$51.23M**	**$65.50M**	**$46.36M**	**$33.57M**	**$21.95M**	**$21.74M**	**$33.56M**	**$350.91M**

The methods currently used by NPDC to prepare financial forecasts do not provide a straight-forward breakdown into the Asset Management lifecycle stages of acquisition, operation, maintenance, renewal or disposal. Table 7.2.2 can be aligned with the lifecycle stages as follows:

- Asset acquisitions are the combined totals of LoS and Growth activities (above 'Total Capex'),
- Asset renewals are captured under the Renewals activity heading
- Operations and maintenance costs are collectively provided as 'Total Opex' with no individual breakdown currently available.

An improvement action has been identified to improve forecast definition in the AMP including providing separate operations, preventative and reactive maintenance forecasts.

7.3 Valuation Forecasts

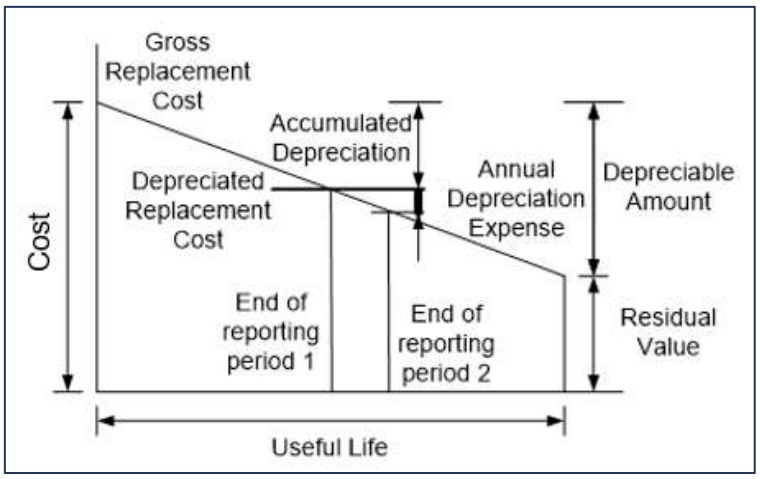
7.3.1Asset valuations

The best available estimate of the value of assets included in this AMP is shown in Table 7.3.1. Council's asset valuation methodology is described in the Statement of Accounting Policies included in the Financial Information section of the LTP. Figure 7.3.1 provides a graphical comparison of the values given in Table 7.3.1.

Table 7.3.1 Asset valuations as at 30 June 2022

Measure	Value
Replacement Cost (Current/Gross)	$874.7M
Depreciated Replacement Cost[1]	$439.7M
Annual Depreciation	$11.1M

Figure 7.3.1: Understanding valuation and depreciation values



7.3.2Valuation forecast

Total asset portfolio value is forecast to increase over the 10-year term of this AMP as additional assets are added. Additional assets will generally result in increased costs due to:

- operations and maintenance needs
- future renewal costs, and
- future depreciation forecasts

7.4 Key Assumptions

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

[1] Also reported as Written Down Value, Carrying or Net Book Value.

Key assumptions are:

- Asset valuations primarily based upon replacement cost of an asset.
- Costs relating to lifecycle forecasts are based on engineering judgement that is assumed to be correct/ accurate.
- All costs for future work programmes, project works, and future asset acquisitions are based on best judgement of Council staff, utilising available cost estimation tools.
- The forecast values shown above and in the graphs in Section 5 consider the projects included in the first ELT/TRU budget submission and exclude the projects that have been requested but were removed or delayed before the submission.
- Capex forecasts have been inflated by 2.5% per annum.
- Opex forecasts have been inflated by BERL 2023 rates.
- The asset condition information obtained to date is reflective of the balance of the network.
- There will be no major LoS or legislative changes driven by Central government or regional council over the life of this AMP.

7.5 Forecast Reliability & 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 in accordance with Table 7.5.1.

The estimated confidence level for and reliability of data used in this AMP is shown in Table 7.5.2.

The overall estimated confidence level for reliability of data used in this AMP is C – Medium.

Table 7.5.1: 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 (i.e. accuracy level ±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 (i.e. accuracy level ±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 (i.e. accuracy level ±25%)

Confidence Grade	Description
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. (i.e. accuracy level ±40%)
E. Very Low	None or very little data held.

Table 7.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	C. Medium	Uncertainty in forecasts arises due to the potential for change within national and global economies and politics and the occurrence of natural events and disasters which all impact long-term forecast reliability.
Growth projections	B. High	There is generally high confidence in expected changes in population and demographics in the area however lower confidence in likely immigration and tourism forecasts are noted due to international instability.
Acquisition forecast	D. Low	Most projects included as part of the LTP are in very early stages (feasibility or concept design). Cost estimates are mostly based on unclassified estimates with no supporting business cases.
Operation forecast	C. Medium	Project seed funding and consequential opex budgets associated with Capital projects have low levels of confidence as per above comment. General opex forecasts are based on previous years actual expenditure and have high confidence.
Maintenance forecast	B. High	Data based on previous years actual expenditure.
Renewal forecast - Asset values	C. Medium	For reticulation pipe assets, data Is based on CCTV inspection records. For wastewater P&E assets, there is no formalised condition assessment programme in place.
- Asset useful lives	C. Medium	Asset lives reflect the useful lives generally used in the industry but there is some evidence of premature failure occurring. Condition data is not being used to modify remaining useful life where there is evidence of premature failure occurring.
- Condition modelling	C. Medium	For reticulation pipe assets, data Is based on CCTV inspection records. For wastewater P&E assets, there is no formalised condition assessment programme in place.
Disposal forecast	E. Very Low	Decisions yet to be made on future of significant assets


500 ml
400
300
HNO3
H2SO4

Improvement & Monitoring

This section provides information about improvement and monitoring of the asset management system and processes at Council.

8.1 Asset Management Maturity

NPDC undertook an asset management maturity assessment across the entire Council asset management system in March 2021. An overview of this review is provided in the 2022 Asset Management Strategy (ECM# 7819335). Council is working toward a maturity rating of 3 (Competent) and currently have an average rating of 2 (Developing). Current focus areas for increasing Council's asset management maturity include:

- Increasing process documentation: to provide consistency and minimise knowledge loss during change,
- Implementing management reviews: to enhance overall visibility of activities and more closely track performance,
- Introducing spot checks: to ensure documented processes are aligned to reality.

8.2 Improvement Plan

The following tables list the areas of this AMP that can be improved upon through the development and implementation of improved processes or methodologies, behaviours and tools. Implementation of these actions will enhance operational efficiency and effectiveness and improve overall asset management maturity.

Action priority is set using the Eisenhower matrix(Figure 8.2.1) as a model, with the highest priority works graded as A and lowest priority works graded as D.

Table 8.2.1: Improvement Plan

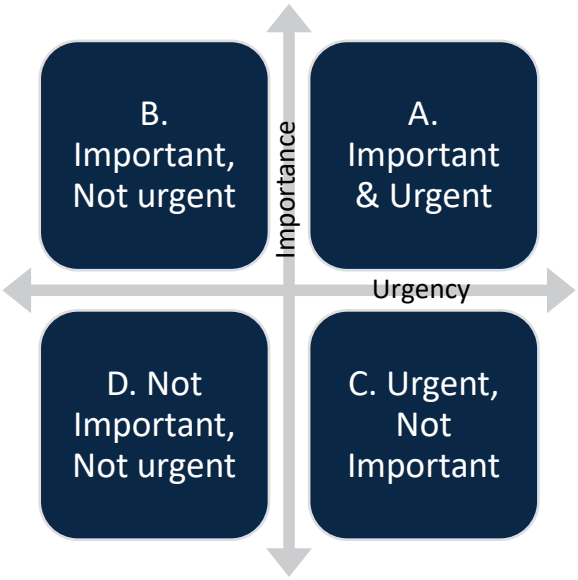
Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
Critical assets	Adopt an asset criticality framework for 3W that supports the systematic identification of all critical assets, and is consistent throughout Council. (Ref: Section 6.1).	B	Three Waters Manager	Three Waters Planning Lead	BAU collaboration across asset owners, no additional funds necessary	Jun 2025
Critical Assets	Create a programme to prioritise critical assets for maintenance and renewal funding, undertaking	A	Three Waters Manager	Three Waters Planning Lead	BAU collaboration across asset owners, no additional funds necessary	Jun 2025

Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
	condition assessments and for improvement works					
Engagement	Continue our journey towards partnership with Iwi and hapū.	A	Project Management Leads	Project Managers	BAU	Ongoing
Engagement	Continue to improve our engagement with the community and key stakeholders.	A	Project Management Leads	Project Managers	BAU	Ongoing
Data collection	Set firm timeframes for the handover of asset data and embed in process.	B	Accountable Manager PMO (capital works) 3W Networks Mgr. (renewals)	Project Delivery Manager, Works Delivery Manager	BAU collaboration between Asset Data, Projects and Operations teams	Mar 2025
Data Accuracy	Update the remaining useful life based on condition data	B	Manager Strategic Planning	Asset Data Lead	BAU	Ongoing
Vertical Datum	Adjust all reduced levels to NZVD 2016	B	Manager Strategic Planning	Asset Data Lead	TBC	TBC
CCTV	Source or create a geospatial database of the CCTV data to improve accessibility for use in asset planning.	B	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	TBC	TBC
CCTV	Schedule pipes likely to have an ongoing serviceability issue for periodic re-inspection.	B	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	BAU Activity	TBC
Serviceability Issues	Develop a systematic way to track if serviceability issues have been resolved and get pipes re-CCTV'ed where needed. Potential to combine with geospatial database of CCTV	A	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	BAU Activity	TBC
Condition assessments	Update condition assessment data to reflect localised defects that can be resolved without large scale renewal.	B	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	BAU Activity	Ongoing
Condition assessments	Undertake detailed condition assessments on poor and very poor assets	B	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	BAU activity with technical support from Project Max	Ongoing
Condition rating data and programme (Pipe bridges)	Develop and implement a condition inspection programme for reticulation assets (pipe bridges and river crossings and pipes) to understand the actual condition and deterioration rate of assets.	B	Manager Three Waters Networks	Stormwater, Dam and Renewals Engineer	BAU activity	Ongoing
Condition rating data and programme (P&E)	Develop and implement a formal condition inspection programme for P&E assets (WWTP buildings, pump	A	Three Waters Manager	WWTP Lead	BAU Activity	Ongoing

Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
	stations) to understand the actual condition and deterioration rate of assets (refer to section 5.3.1).					
Telemetry and communications technology	Implement a robust renewal programme for telemetry and communications technology	B	Engineering & Technical Support Manager	Control Systems Lead	BAU activity	Ongoing
Maintenance Schedule	Implement a maintenance schedule for P&E.	A	Three Waters Manager	Wastewater Treatment Plant Lead	BAU activity	June 2025
Operational Procedures	Create and update operating manuals (refer to section 5.2).	A	Three Waters Manager	Engineering & Technical Support Manager	BAU activity	Ongoing
Growth Models	Update the growth models based on the Operative District Plan assumptions	B	Manager Strategic Planning	District Planning and Growth Lead	BAU activity	June 2025
Decarbonisation Programme	Create standards to design, build and manage future NPDC assets according to low carbon principles. Update with carbon baseline information and process for developing carbon reduction road map.	A	Manager Sustainability and Behaviour Change	Climate Change Response Lead	BAU activity	TBC
Lifecycle costing	Development and implementation of a process for lifecycle costing (Refer to Section 5.4.2)	A	Manager Project Management Office	Project Delivery Managers	TBC	TBC
Hydraulic Models	Produce fully validated wastewater network models to facilitate improved planning and operations	A	Three Waters Planning Lead	Senior Planning Engineer	Wastewater Modelling Contract	Jun 2024
Model maintenance Guidelines	Creation of a hydraulic model update and maintenance guideline.	C	Three Waters Planning Lead	Planning Engineer-Network Modelling	BAU activity	June 2025
Level of Service	Creation and adoption of a Wet-Weather containment standard for the wastewater network.	B	Three Waters Planning Lead	Senior Planning Engineer	BAU activity. Up to date hydraulic models required.	TBC
Forecast definition	Create a programme of works to improve and provide separate operations, preventative and reactive maintenance forecasts (Refer to section 7.2.2)	C	Engineering & Technical Support Manager, Three Waters Networks Manager	Mechanical Maintenance Lead, Drainage Network Supervisor	BAU Activity	Ongoing
Valuation	Add resource consents and hydraulic models to the asset register and assign a value.	B	Manager Strategic Planning	Asset Data Lead	BAU collaboration between Asset Data, Three Waters Planning and Operations team	Ongoing
Environmental Sustainability	Ensure that Environmental Sustainability Policy settings are incorporated into all	C	Three Waters Planning Lead	PMO Leads	BAU	Ongoing

Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
engagement and inclusion	actions and commitments indicated within LTP and AMP			PMO Project Managers		

Figure 8.2.1: Eisenhower matrix



8.3 Monitoring & Review Procedures

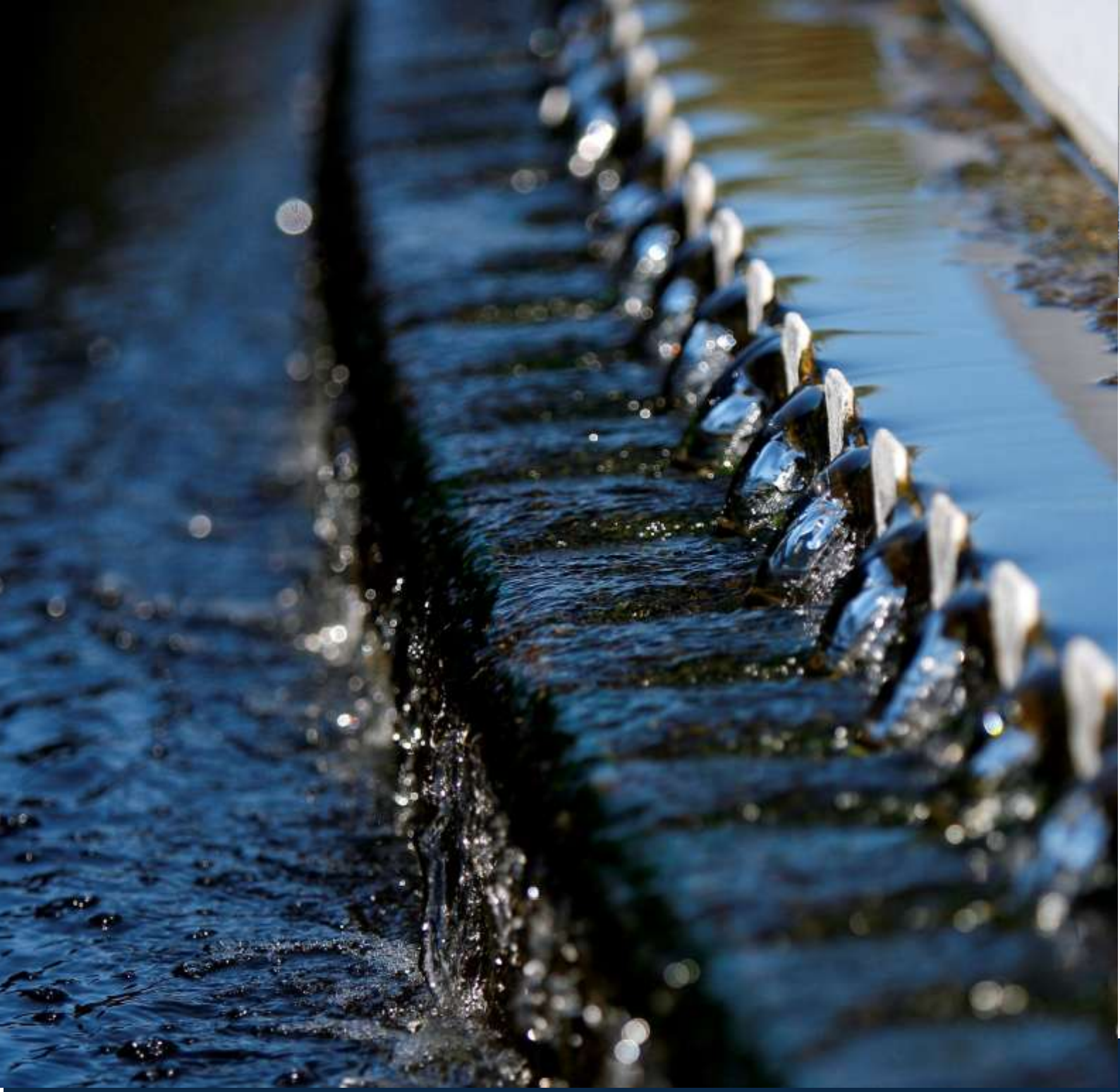
This AMP will be reviewed and updated annually as part of wider Council annual planning process. These annual reviews will ensure the AMP continues to accurately communicate the current service levels, asset values, forecast costs and planned budgets.

Every three years the AMP will be completely revised to reflect the adjustments to the organisational strategic direction that result from the triennial election of Council's elected members. The AMP review is also aligned to the LTP process for which the AMP is essential supporting information and, as such, these AMPs will be made available for the LTP audit in their draft form. The draft AMP will capture the best-case scenario for management of the assets aligned to anticipated budgets. The final version will reflect the decisions made by elected members including where service levels are expected to be impacted by the availability of funds.

8.4 Performance Measures

The effectiveness of Council's AMPs is monitored through regular internal spot-checks conducted multiple times throughout the year by this asset group's senior management team. The internal spot-checks will assess the extent to which the actions defined within the plan have been implemented, function as a feedback mechanism for senior management, and consider the following:

- Accuracy of forecast costs and alignment to the LTP,
- Alignment to the Asset Management Strategy and other key strategic documents,
- Completion rate of forecast works including renewals, acquisitions, essential maintenance, condition assessments and improvement or risk management activities,
- Inclusion of key risk and improvement actions within the relevant Council systems and the completion of corrective actions in a timely manner,
- Completeness of information,
- Other relevant topics identified at the time of the check.



References

- IPWEA, (2006). *International Infrastructure Management Manual*, Institute of Public Works Engineering Australasia, Sydney, International Infrastructure Management Manual (IIMM) - Aotearoa
- IPWEA, (2015). *International Infrastructure Management Manual – 3rd ed*, Institute of Public Works Engineering Australasia, Sydney, International Infrastructure Management Manual (IIMM) - Aotearoa
- Department of Internal Affairs, (n.d). *Local Government Act 2002,* Local Government Act 2002 No 84 (as at 01 October 2023), Public Act Contents – New Zealand Legislation
- NPDC, (2023). *Significant non-financial forecasting assumptions*, supporting-information.pdf
- NPDC, 2023). *Asset management strategy for infrastructure and property assets 2023-2025*.NPDC internal document, ECM# 8927919.
- Research First, (2023, June). *New Plymouth District Council Community Survey 2023*, https://www.npdc.govt.nz/media/xkxou1iw/npdc-annual-customer-survey-report-2023.pdf
- NPDC, (2023). *Our Vision*, https://www.npdc.govt.nz/planning-our-future/our-vision/
- NPDC, (2023). *Infrastructure Strategy (pg 39 onwards),* Long-Term Plan 2024-2034, https://www.npdc.govt.nz/media/1r4hjp0n/informing-our-planning.pdf
- NPDC, (2023). *District-wide emissions reduction plan,* district-wide-emissions-reduction-plan-2023-adopted-12-september-2023.pdf
- Ministry for the Environment, (2022, May). *Te hau mārohi ki anamata, Towards a productive, sustainable and inclusive economy, Aotearoa New Zealand's first emissions reduction plan*, Aotearoa New Zealand's first emissions reduction plan
- International Organisation for Standardisation – ISO (2009) *ISO 31000:2009 Risk management – guidelines*. ISO 31000:2009 - Risk management — Principles and guidelines
- New Zealand Infrastructure Commission/Te Waihanga, (2022*). Rautaki Hanganga o Aotearoa – New Zealand Infrastructure Strategy 2022-2052*, rautaki-hanganga-o-aotearoa-new-zealand-infrastructure-strategy.pdf
- NPDC (2021) *Asset management plans (Parks, Property, Stormwater & Flood protection, Transportation, Waste management and minimisation, Wastewater and Water Supply*), NPDC Asset Management Plans
- NPDC (2023) *Cost estimating and control framework* (ECM# 8923299)
- NPDC (2023-2023) Asset value information, data export from TechOne EAM.

Glossary

Term/ Phrase/ Acronym	Definition
Acquisition	Those activities involved in the creation/ purchase/ donation or otherwise gain of new or upgraded assets
AMIS	Asset Management Information System
AMP	Asset Management Plan
AS/NZS	Australian/ New Zealand Standards
Asset	An item, thing or entity that has potential or actual value to NPDC (such as plant, machinery, buildings, roads, etc)
Asset lifecycle	Describes the activities/ actions relating to an asset from initial planning and acquisition, through operation and maintenance of the asset, then disposal at 'end-of-life.' Many assets are not disposed of but are renewed and their condition and performance reset to 'as new'
Asset Owner	The person at Council who is accountable for Managing the specific asset group. This is generally the Functional Manager of the relevant area (e.g. Manager Transport)
Asset register	The record of asset information including asset attribute data such as quantity, type, construction cost and value
AM Strategy	Internal strategy to provide direction regarding how to manage Infrastructure and Property assets
CBD	Central Business District
CCO	Council Controlled Organisation
CCTV	Closed Circuit Television
CDEM	Civil Defence and Emergency Management
Council	Refers to New Plymouth District Council specifically
Customer	Customer in this document is used to describe anyone who uses the products or services provided by Council assets or who has a personal stake in those assets. This includes ratepayers, local community groups and businesses, local iwi and hapū, regulators or statutory bodies and visitors to the region
Current day dollars	The dollar amount required to undertake a task/activity if it was to be completed today. Potential future inflation is not included in these figures
Demand	A driver or pressure that has the potential to change the requirements/expectations of Council's assets
Disposal	Any activities associated with the disposal of a decommissioned asset. This includes the sale, demolition, or the relocation of the asset
EAM	TechOne Enterprise Asset Management – Council's asset register software. Manages financial information, customer information and requests, asset registers and history, work order management and maintenance scheduling

Term/ Phrase/ Acronym	Definition
ECM	Enterprise Content Management - manages documentation and records
ELT	Executive Leadership Team
GCRC	Gross Capital Replacement Cost
GIS	Geographic Information System
IIMM	International Infrastructure Management Manual
Infrastructure Strategy	A document that must be prepared as part of the LTP (required by the Local Government Act). This document identifies significant infrastructure issues and potential options for their management for a 30year period
IPWEA	Institute of Public Works Engineering Australasia
ISO 55001	International Standard for Asset Management – Management System requirements
LGA	Local Government Act 2002
LoS	Level of Service - a statement by Council that clearly identifies what it intends to deliver in terms of providing local infrastructure, public services and regulatory functions
LTP	Long-Term Plan
Maintenance	Those actions necessary to keep the asset as near as practicable to an appropriate service condition including regular, ongoing day-to-day work necessary to keep assets operating
MfE	Ministry for the Environment
NPDC	New Plymouth District Council
NPWWTP	New Plymouth Wastewater Treatment Plant
NZD	New Zealand Dollar
Operations	Those regular activities required to provide a service. Examples of typical operational activities / costs that would be charged here include monitoring inputs and outputs, cleaning, security, insurance, inspection and utility costs
Performance measure	The means by which Council measures achievement of its level of service statements
Pinnacle	NPDC's health, safety, risk, environment and quality (HSREQ) management software
Ratepayer	Residents, property owners and businesses who pay rates to NPDC
RCP	Representative Concentration Pathway, is a greenhouse gas concentration (not emissions) trajectory adopted by the IPCC
Renewals	Those activities that restore, rehabilitate, replace or renew existing assets back to the original or 'as new' standard
Replacement	The complete replacement of an asset that has reached the end of its life, so as to provide a similar, or agreed alternative level of service
Research First	The organisation responsible for undertaking the independent community survey
Risk appetite	The amount and type of risk that the Council is prepared to accept in the pursuit of its objectives.
Risk management	The coordinated activities to direct and control an organisation with regard to risk
Risk treatment	Proposed or agreed method for reducing a risk that Council is currently exposed to
RUL	Remaining Useful Life – the amount of time remaining before the asset condition or performance will no longer be capable of meeting required levels of service and must be renewed or disposed of

Term/ Phrase/ Acronym	Definition
TechOne / Tech1 / T1	Council's EAM and ECM system provider
TRC	Taranaki Regional Council
TRM	Te Rōpū Manawataki (NPDC Tier 3 Management Team)
TRU	Te Ranga Urungi (NPDC Tier 1 & 2 Management Team)
WWTP	Wastewater Treatment Plant

Appendices

Appendix 1 – Legislation & Regulations

The following is a list of all relevant legislation and regulations relating to the delivery of Wastewater Treatment and Disposal.

Legislation	Requirement
LGA 2002 and Amendments	This Act sets the statutory requirements for local governments and includes the mandatory preparation and adoption of a 30 year Infrastructure Strategy that underpins each LTP.
Building Act 2004 and Amendments	In New Zealand, the building of houses and other buildings is controlled by this Act. It applies to the construction of new buildings as well as the alteration and demolition of existing buildings.
Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (Freshwater NES)	The Freshwater NES regulates activities that pose risks to the health of freshwater and freshwater ecosystems.
Operative New Plymouth District Plan (2005) and Proposed District Plan (2023)	The District Plan includes objectives, policies and rules that manage the adverse effects of activities on the environment with a focus on land use and subdivision activities.
Regional Fresh Water Plan (2001)	The Regional Fresh Water Plan promotes sustainable management of the region's freshwater resources by applying rules and conditions to various activities. The Plan is currently under review.
Civil Defence Emergency Management Act 2002 and Amendments	The Act requires that an EMP be maintained and reviewed annually and that it is accepted as suitable by independent review.
HSNO Act 1996 and Amendments	The use of hazardous substances at any water supply sites needs to comply with the HSNO Act.
Health and Safety at Work (Hazardous Substances) Regulations 2017	This is the regulation of hazardous substances that affect human health and safety in the workplace sit under the Health and Safety at Work Act. Of relevance is the handling of hazardous substances to treat drinking water.
Climate Change Response Act 2002 and Amendments	This Act created a legal framework for New Zealand to ratify the Kyoto Protocol and to meet obligations under the United Nations Framework Convention on Climate Change.

Public Works Act 1981 and Amendments	This Act acknowledges that works often cannot be carried out without affecting private landowners. It provides the Crown with legislative powers to compulsorily acquire land for public works so that public works proposals are not unreasonably delayed.
Water Supply Services Management System and Contracts	The service levels, strategies, and information requirements described in the AMP are incorporated within contract specifications, Key Performance Indicator and reporting documentation.
New Zealand Standard (NZS) 4404:2010 – Land development and subdivision infrastructure	This Standard provides criteria for design and construction of land development and subdivision infrastructure.
Land development and subdivision infrastructure standard (local amendment Version 3)	This Standard was jointly prepared by NPDC, South Taranaki District Council (STDC) and Stratford District Council (SDC) and is based on NZS 4404:2010.
Water and Sanitary Assessment (2009)	This document provides an assessment of water services as required by the LGA.
Infrastructure Asset Grading Guidelines 1999	This is a guide used when carrying out condition assessments to determining the grading of assets life and condition.
New Zealand Gravity Pipe Inspection Manual	
Water, Wastewater and Stormwater Services Bylaw (2008, amended and readopted in 2014)	Part 14 of this Bylaw covers specific requirements for wastewater reticulation additional to the general requirements in the Bylaw.
Guidelines for Earthworks (2006)	The aim of these guidelines is to provide guidance to consulting engineers and contractors working within the Taranaki region, on practical measures to help them meet the conditions of the earthwork activities rules contained in the Regional Fresh Water Plan.

Appendix 2 – Operations, Capital and Maintenance Expenditure Forecast

The following is a complete list of the forecast costs associated with operations and maintenance for the 10-year term of this plan. Future iterations of this plan will improve the breakdown classification.

Table A3.1: Operations and Capital Expenditure forecast

Activity	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	Total
General Operating Costs	$3.46M	$4.36M	$5.55M	$5.74M	$4.40M	$4.68M	$4.63M	$4.45M	$4.62M	$4.82M	$46.69M
Direct Costs	$3.87M	$3.98M	$4.05M	$4.17M	$4.13M	$4.35M	$4.67M	$5.12M	$5.23M	$5.33M	$44.88M
Internal Charges	$5.96M	$6.52M	$6.41M	$6.64M	$6.80M	$6.90M	$6.89M	$6.98M	$7.03M	$7.15M	$67.28M
Total Operating Expenditure	**$13.29M**	**$14.86M**	**$16.01M**	**$16.54M**	**$15.32M**	**$15.93M**	**$16.19M**	**$16.56M**	**$16.88M**	**$17.29M**	**$158.86M**
Level of Service	$17.22M	$18.85M	$5.63M	$12.99M	$16.61M	$8.40M	$5.58M	$2.80M	$5.67M	$5.30M	$99.06M
Growth	$4.75M	$2.64M	$1.54M	$6.02M	$11.05M	$7.97M	$4.87M	$5.26M	$5.36M	$7.44M	$56.90M
Renewals	$8.66M	$12.07M	$13.60M	$12.98M	$20.22M	$19.74M	$14.20M	$11.85M	$12.80M	$12.43M	$138.54M
Total Capital Expenditure	**$30.63M**	**$33.56M**	**$20.77M**	**$31.99M**	**$47.87M**	**$36.12M**	**$24.65M**	**$19.90M**	**$23.83M**	**$25.17M**	**$294.50M**

Table A3.2: Maintenance Expenditure forecast

Activity	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	Total
Planned Maintenance	$1.66M	$1.79M	$1.82M	$1.88M	$1.85M	$1.96M	$2.14M	$2.39M	$2.44M	$2.48M	$20.40M
Reactive Maintenance	$1.35M	$1.32M	$1.34M	$1.38M	$1.36M	$1.44M	$1.57M	$1.76M	$1.79M	$1.82M	$15.13M
Emergency Maintenance											
Total Maintenance Expenditure	**$3.01M**	**$3.11M**	**$3.16M**	**$3.26M**	**$3.21M**	**$3.40M**	**$3.71M**	**$4.14M**	**$4.23M**	**$4.31M**	**$35.54M**

Appendix 3 – Project Prioritisation Matrix

SCORE	**Criteria 1 – Strategic Alignment** *How well does this opportunity contribute to the delivery of our goal, vision & strategies?*	**Criteria 2 –Benefits** *What benefits (efficiency, innovation, social or economic) will the community gain from this opportunity?*	**Criteria 3 – Level of Services** *How does this project Impact our level of service?*	**Criteria 4 – Risk Mitigation** *How does this project mitigate overall risk profile?*	**Criteria 5 – Ease of Execution** *How easy is this project to execute? Any quick wins?*
Weight	***35%***	***20%***	***15%***	***15%***	***15%***
5	• Contributes to all community outcomes or corporate goals OR required to achieve one outcome / goal. • Critical community demand (>80%) via pre-consultation	• Significantly improve delivery efficiency, digital interaction, or innovation (impact more than 75% ratepayers or employees) • Significant measurable benefits to local economy • Significant measurable social benefits • Cost Benefit Ratio (CBR) > 3 • 100% externally funded (including most internal costs), with a CBR>1	Addresses failure to meet existing stated levels of service	NPDC or the community is exposed to very high risks (*) (*) as per NPDC risk framework	Business As Usual activity, already scoped and well defined, easy to implement (Tier 5)
4	• Contributes to three community outcomes or corporate goals OR very strong contribution to one outcome / goal. • Enabler to an approved Council strategy, policy or framework • Key community demand (>60%) • Support delivery of cultural narrative and partnership with Tangata Whenua • Included in community board plan	• Significantly improve delivery efficiency, digital interaction or innovation (impact more than 50% ratepayers or employees) • Some benefits to local economy • Some social benefits • Cost Benefit Ratio (CBR) > 2 • Attract external funding contributing to more than 80% of project costs	Maintains existing levels of service	NPDC or the community is exposed to high risks (*)	Very low complexity project - typically Tier4, Roadmap 0

3	• Contributes to two community outcomes or corporate goals OR strong contribution to one outcome / goal • Contribution to an approved Council strategy, policy or framework • Important community Demand (>40%)	• Improve delivery efficiency, digital interaction or innovation (impact more than 35% ratepayers or employees) • Cost Benefit Ratio (CBR) > 1 • Attract external funding contributing to more than 60% of project costs	• Increases level of service: - across the District - to support bringing community together - to support vulnerable part of the community	NPDC or the community is exposed to medium risks (*)	Low complexity project - typically Tier 3, Roadmap 1
2	Contributes to one community outcomes or one corporate goal.	• Some improvement to delivery efficiency, digital interaction or innovation • Attract external funding contributing to less than 60 % of project costs	Increases level of service for part of the community	NPDC or the community is exposed to low risks (*)	Medium complexity project – typically Tier 2, Roadmap 2
1	No contribution to community outcomes or corporate goals	• Do not attract external funding • No social or economic benefits	No impact on level of services	NPDC or the community is exposed to very low risks (*)	High complexity project - typically Tier 1, Roadmap 3

Appendix 4 – Alignment between AMP templates

There were quite significant modifications made between the 2021 Asset Management Plans and these 2024 Asset Management Plans. The below colour coded list shows where the information can be found in the old template. Bold colours represent major sections, lighter tints represent subsections. Section headers 3 tiers and below have been removed.

A large amount of the more detailed content has been moved into the Appendices where it is visible but does not disrupt the flow of the overall plan for the reader. Sections without a colour tag are new or sufficiently different that there is no equivalent in the old template.

2021 AMP Contents		**2024 AMP Contents**	
1	Executive Summary	1	Executive Summary
2	Introduction	2	Introduction
2.1	Asset Descriptions	2.1	Background
2.2	Asset Information and Data	2.2	Asset management planning
3	Strategic Framework	3	Levels of Service
3.1	Strategic Alignment	3.1	Customer research
3.2	Key Issues	3.2	Strategic and corporate goals
3.3	Statutory and Regulatory requirements	3.3	Legislative requirements
4	Levels of Service	3.4	Customer values
4.1	Customer Levels of Service	3.5	Levels of Service
4.2	Technical Levels of Service	4	Future demand
4.3	Level of Service Projects	4.1	Demand drivers
5	Future Demand	4.2	Demand forecasts
5.1	Growth Projects	4.3	Demand impact and management plan
6	Lifecycle	4.4	Asset programmes to meet demand
6.1	Identify need and plan	4.5	Climate change adaptation
6.2	Design and Build	5	Lifecycle management plan
6.3	Operations and Maintenance	5.1	Background data
6.4	Renewals	5.2	Operations and maintenance plan
6.5	Disposals	5.3	Renewal plan
7	Risk management	5.4	Acquisition plan
7.1	Risk assessment	5.5	Disposal plan
7.2	Infrastructure resilience approach	5.6	Summary of forecast costs
8	Financial summary	6	Risk management planning
8.1	Funding strategy	6.1	Critical assets
8.2	Valuation forecasts	6.2	Risk assessment
8.3	Expenditure forecast summary for opex and capex	6.3	Resilience
8.4	Level of service project Capex expenditure forecast summary	6.4	Service and risk trade-offs
8.5	Growth project Capex expenditure forecast summary	7	Financial summary
8.6	Opex projects related to Capex projects expenditure forecast summary	7.1	Financial sustainability and projections

Te Kaunihera-ā-Rohe o Ngāmotu
New Plymouth District Council

Plan owner:	Manager Three Waters	**Content owner:**	L. Rock
Approved by:	General Manager Operational Excellence	**Date approved:**	30 April 2025
Review period:	3 years	**Next review:**	30 June 2026
Document No:	ECM: 9496410	**Version:**	Final
Type:	Asset Management Plan		

REVISIONS

Version	Description	Written by	Revision date	Peer Reviewer(s)	Approver	Approval Date	Issue date
Draft	New document	J. Battaerd, L. Rock	Feb 2023 – Apr 2025	A. Humphrey, M. Coronno	Sarah Downs	30 April 2025	30 April 2025