New Plymouth District Council

STORMWATER & FLOOD PROTECTION

Asset Management Plan

2024 – 2034

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

Contents

Preamble/Foreword

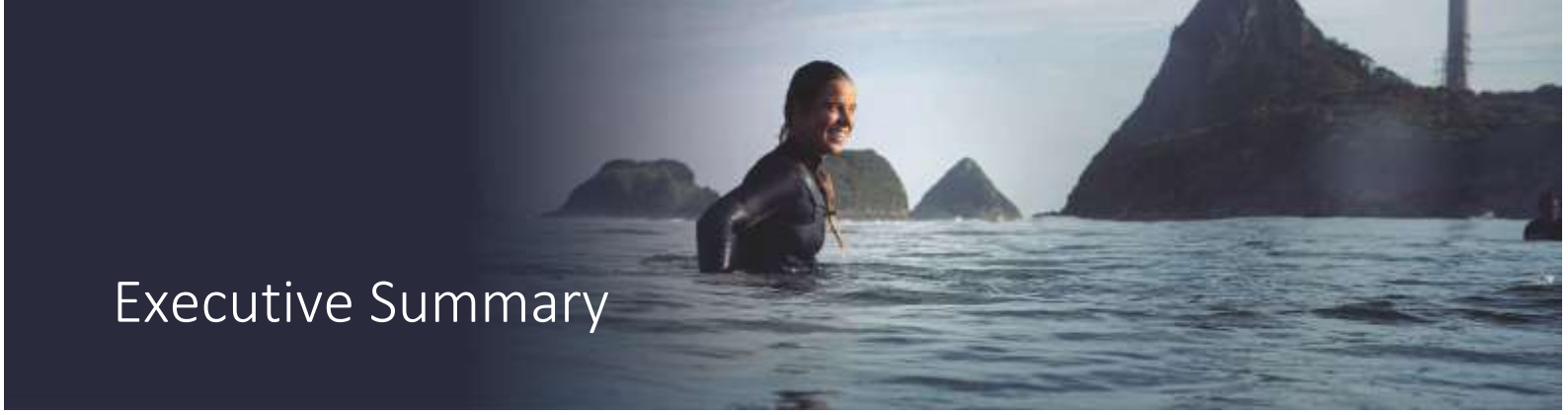
This 2024 Asset Management Plan has been prepared as part of the 2024-2034 Long-Term Plan (LTP) supporting information.

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

New Plymouth District Council are responsible for the collection, management and disposal of stormwater runoff from around 6,600 hectares of urban area in the district, covering New Plymouth, Bell Block, Waitara, Inglewood, Urenui, Onaero, Lepperton, Egmont Village, Ōākura and Ōkato. These responsibilities are split over two activities Flood Protection and Stormwater, which for the purposes of simplicity are combined for this AMP.

To achieve this the Council owns, operates and maintains a number of assets including: four flood protection dams, two diversion tunnels, the Waitara War Memorial Pump Station, the reticulation network (including manholes, reticulation, and service connections), inlets and outlets, the Mangāti Ponds wetland and Peringa Park wetland worth $510M to replace.

1.2 Our Drivers

Council has co-created with iwi the Stormwater Vision, Aspirations and Objectives to act as a framework for anything related to stormwater and drive a broader consideration of the outcomes arising from the stormwater service. The Vision is to protect and enhance the mauri of wai/lifeforce of water where:

- our streams and waterbodies are healthy and flow naturally with clean, fresh water
- are alive with abundant indigenous species
- support the health of the community

Alongside the Stormwater Vision, Aspirations and Objectives, Council has the following agreed levels of service:

- Provide a stormwater management system that protects people and property.
- Respond to service requests in a timely manner.
- Ensure customers are satisfied with the performance of our stormwater system.
- Comply with all resource consents for discharges from our stormwater system.
- Effectively maintain NPDC's flood protection and control works.

The key challenges to achieving the Vision, Aspirations and Objectives and the agreed LoS and how Council will address these is summarised in Table 1.2.1.

Challenge	How Council will address
Not meeting our target LoS of level or protection for flooding	Multiple initiatives including modelling, condition assessment, renewals and upgrades. However fully resolving this is expected to be an intergenerational project.
Environmental damage due to lack of treatment, changes to the hydrological regime and piping streams	Multiple initiatives including the Vision, Aspirations and Objectives driving more focus on environmental considerations, working more closely with iwi to deliver the service, understanding the current state through catchment management plans (CMP), putting more focus on environmental considerations as part of new developments including creating development guidelines and allowing for non-capitalisable assets in project budgets (e.g. planting).
Environmental damage due to wastewater overflows in Inglewood and Waitara driven by inflow caused by an undercapacity stormwater network	Combined initiative with the Wastewater service to reduce overflows through education, enforcement, renewals and upgrades to both the stormwater and wastewater networks
Requirement to comply with new Dam Safety Regulations	Invest $20M in upgrading the four flood detention dams to meet the new regulations
Affordability of required upgrades	Placing more focus on planning so upgrades are more effective, address multiple challenges for a single project and don't require rework. Placing more focus on strategic upgrades that address capacity issues in the trunk network and with flooding of habitable floors, not nuisance flooding. Driving better designs at development stage so there are less issues to deal with over time
Climate Change is expected to increase the rainfall associated with severe weather events by between 9% and 35% by 2090 making existing flooding issues worse.	Capacity calculations for all new developments and projects are designed for 2090 flows based on an RCP 8.5 pathway

1.3 Our Plan

Due to a number of years of minimal funding and strategic planning, the bulk of the focus in the stormwater service is currently on the creation of CMP, development guidelines, improving our data and processes and business cases for renewals and upgrades to address identified issues. As the LTP period progresses this focus will shift towards building the projects identified.

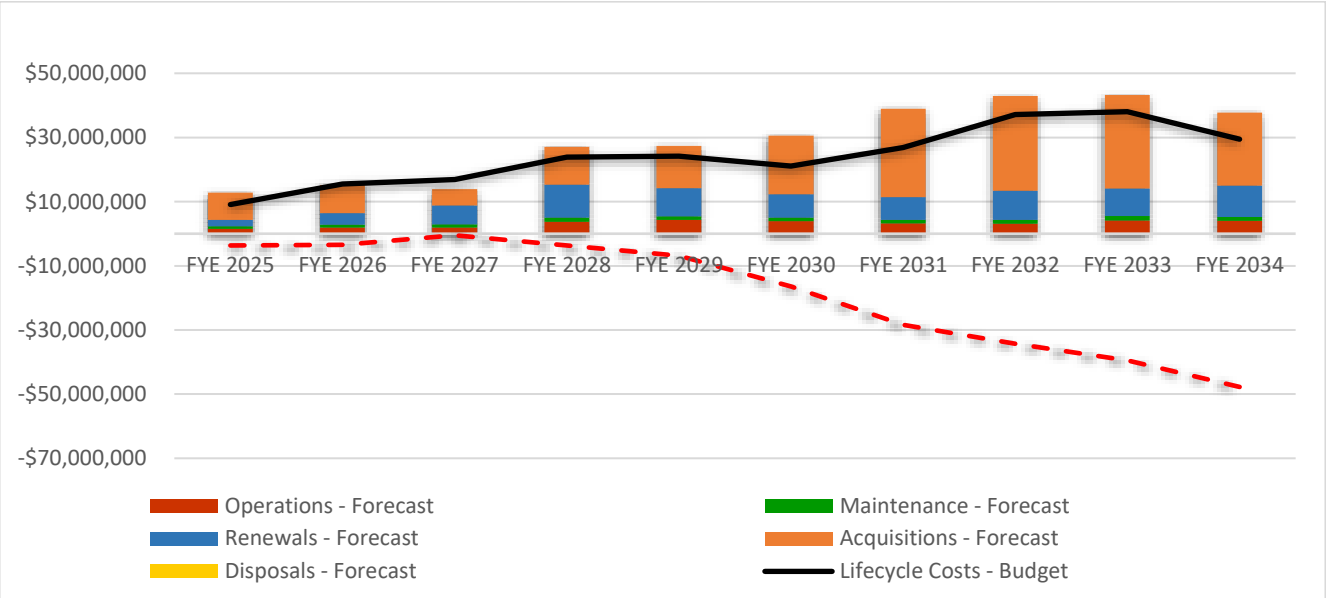
More specifically the focus for the first three years of the LTP will be:

- Developing hydraulic models and associated CMP for the identified priority catchments.
- Undertaking investigations and design work to decide how to progress with resolving the identified dam safety issues and ensure compliance with the dam safety regulations.
- Developing a prioritised list of remedial works combining the outcome of renewals investigations (including condition assessments) and CMPs.
- Improving how new developments are done, particularly around hydraulic neutrality, stormwater treatment and wider ecological and social outcomes.
- Ensuring we have a complete up-to-date asset register with clear information regarding asset ownership and operation and maintenance requirements.
- Continuing to work towards a partnership with tangata whenua in delivering all of the above alongside the overall stormwater service.

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 values in graph are adjusted for inflation

The 2024-2034 LTP represents a 140% increase in expenditure (uninflated) over the 2021-2031 LTP and a 600% increase (uninflated) over the 2018-2048 LTP. The increased expenditure addresses long-standing underinvestment across the district's Three Waters services, with stormwater being particularly unsupported. The $244M allocated over this AMP timeframe represents 90% of the forecast costs, with the remaining 10% of unfunded work being projects that have been deferred; these will require intergenerational investment to fully resolve. With this financial allocation, the stormwater service is well placed to make some good progress with addressing its service challenges within this ten-year AMP timeframe.

1.5 The Risks

There are a number of risks implicit within the stormwater service which are mostly captured at a high level in the challenges noted earlier and for which the increased investment will make a good start towards addressing. Since the publishing of the previous 2021-2031 AMP a new risk has arisen in terms of delivering on the work programme and aspirations within the AMP. This is the risk of delay or non-delivery due to lack of resources created by the current organisational restructure being undertaken by Council, which is also impacting capacity to deliver due to unfilled roles and may continue to impact resourcing depending upon its final outcome.

1.6 Future Change

This AMP sets the stage for a significant shift in focus and funding for the Stormwater and Flood Protection Activities to make them more financially sustainable, closer to meeting the target level of service and delivering better outcomes for the wider community and environment. It is expected that this change will continue and be reflected in future versions of the AMP. The Stormwater Vision & Roadmap includes a range of initiatives that will enhance operational efficiency and effectiveness and improve overall asset management maturity.

Future improvement actions include development of stormwater models, mapping overland flowpath networks, development of CMPs, identification and valuation of stormwater assets, identification of critical assets, development of CCTV and condition assessment programmes and development of maintenance schedules for assets.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Introduction

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 Mount Taranaki/Egmont, the Taranaki region has historically been built upon the dual economic pillars of dairy and petrochemical industry but has recently pivoted away from this dual reliance towards a wider economic foundation encompassing other industries to build regional economic resilience. While New Plymouth is the only city in the district, it encompasses a number of small towns including the communities of Waitara, Inglewood, Ōākura, Ōkato, Lepperton, Egmont Village and Urenui. 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 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 government. 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 Service Context

The Council owns and operates stormwater and flood protection assets and services as part of its duty to ensure that public health and wellbeing is protected efficiently. The stormwater service covers the collection, management and disposal of stormwater runoff from around 6,600 hectares of urban land in the communities of New Plymouth, Bell Block, Waitara, Inglewood, Urenui, Onaero, Lepperton, Egmont Village, Ōākura and Ōkato. The flood protection service covers flood protection dams, bunds, as well as diversion tunnels and weirs that support the stormwater service to achieve its objectives.

2.1.3 Asset Summary

The assets involved in providing the stormwater and flood protection services include assets in the following major categories:

- Pumpstations
- Reticulation Network
    - Manholes
    - Reticulation
    - Service Connections
- Inlets, outlets & nodes
- Wetlands
- Ponds
- Soakage devices
- Swales
- Dams
- Bunds
- Stopbanks
- Weirs
- Diversion tunnels
- Consents
- Hydraulic models

These assets had a combined gross current replacement value of $510.7M and depreciated replacement value of $318.9M as at 30 June 2022.

2.1.4 Affordable Water Reform

Under the previous Labour-led government's 'Affordable Water' reforms, the responsibility for the provision of the district's stormwater, wastewater and drinking water services was planned to move to management under a new Water Service Entity (WSE) from 01 April 2025. As a consequence of the 2023 General Election a new National-led coalition government with New Zealand First and Act New Zealand has been elected into power. National has indicated in their party manifesto that they will repeal the existing legislation regarding water reform within their first 100 days in power, however, what form the replacement law will take and the subsequent impact to Council is currently unknown.

This AMP has been developed under a working assumption that water reform is imminent, however the timing is not clear. The proposals and recommendations indicated are based upon the best available information for the existing assets and future needs of the region at this 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 as new legislation is passed.

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 2002 (clauses 101B and 93 respectively).

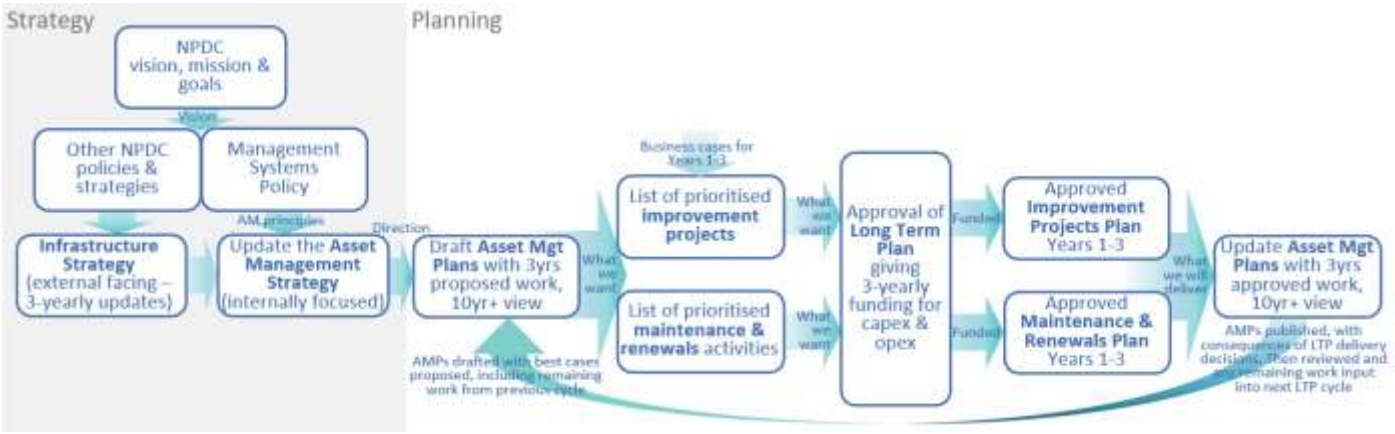
This AMP identifies and addresses the following key elements:

- 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

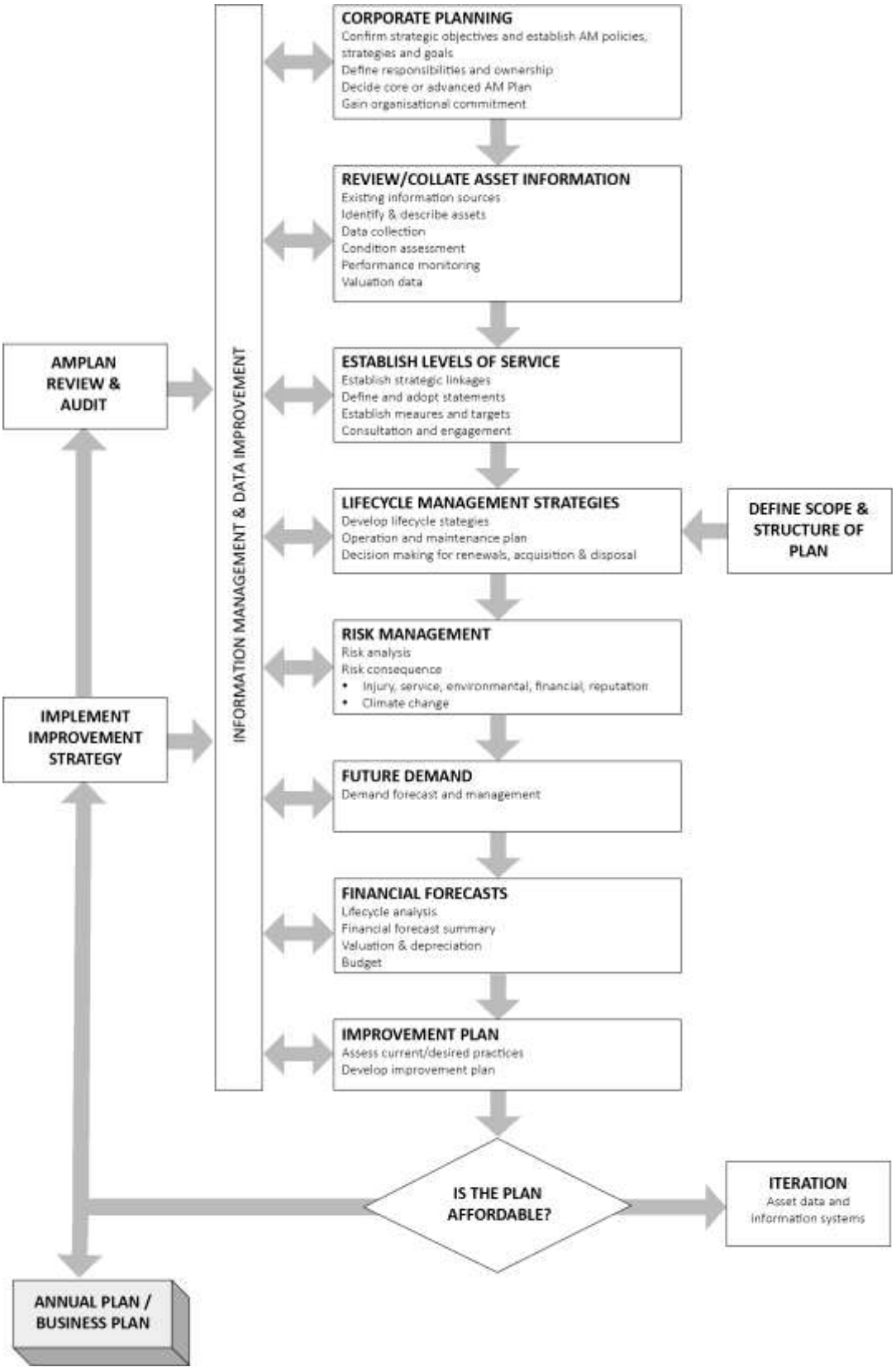
The development of AMPs is part of an overall governance process that is outlined in the Asset Management Strategy. A summary of this process is given in Figure 2.2.2.1

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	• Accountable Asset owner • Review and approval of AMP • 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.
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 stormwater implications and vice versa.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Levels of Service

This section outlines the major inputs considered when defining the level of service to be delivered by Council, the current level of service targets that Council is aiming for, how those targets are measured and the consequences to our levels of service resulting from the available budget.

3.1 Customer Research

Understanding the requirements of our internal and external stakeholders and iwi partners 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 LTP 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 Table 3.1.1 and Figures 3.1.1.1 and 3.1.1.2 below.

Overall residents are reasonably happy with stormwater, especially when compared to the provincial peer group average of 57% fairly/very satisfied for 2022 and 50% for 2023 (likely reduced due to the Hawkes Bay floods). Flood protection has a high percentage of don't knows (36%) likely due to limited understanding of the general public around the difference between stormwater, flood protection and TRC's flood protection responsibilities.

Since 2022 Figures 3.1.1.1 and 3.1.1.2 show an increase in the percentage of people very/fairly satisfied but an overall reduction since 2020 for flood protection and 2017 for stormwater. The reason for this shift is unclear but could be associated with the various campaigns by both central government and stakeholder groups associated with the water services reform over this period and the confusion around where stormwater and flood protection fit into reform. Looking regionally most areas have similar satisfaction with exception of Waitara and Clifton where not very satisfied is around 20-30%. Waitara has long standing challenges with flooding which are being addressed through the Waitara CMP and various stormwater upgrade projects. Clifton's low satisfaction is likely associated with the

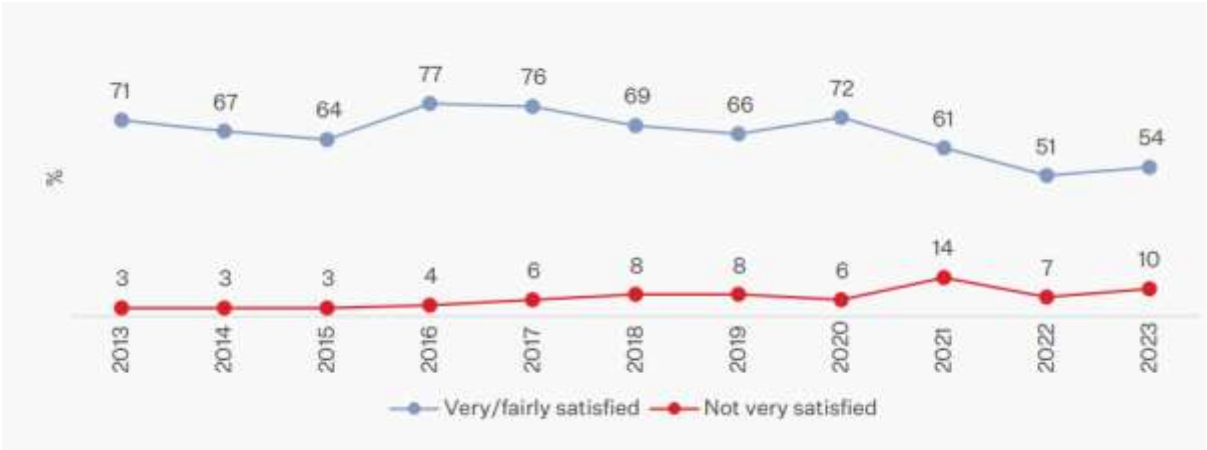
contamination of the stormwater system by failing septic tanks and the associated rahui on the estuary which is being resolved through the Urenui and Onaero Wastewater Project.

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 stormwater services	9%	28%	43%	19%
Overall satisfaction with flood protection	10%	24%	30%	36%

Figure 3.1.1.1 Level of satisfaction with stormwater over time

Figure 3.1.1.2 Level of satisfaction with flood protection services over time



3.1.2 Other feedback

NPDC has been through the first round of consultation for the 2024-2034 LTP during mid-2023[1]. 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. Of the five specific areas only two have direct impacts on the stormwater service within this AMP timeframe:

1. Wild weather: preparing for wild weather events
2. Rates: keeping rates affordable

Residents showed to be in agreement as to the importance of both areas under consideration as they expressed a strong desire for the focus to be on essential services and 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 service. Just over half of the representative survey respondents indicated they would be prepared to accept some increase in rates to fund works to provide better preparation for wild weather events.

Residents have a strong viewpoint on the importance of futureproofing the district's infrastructure (including stormwater networks) for wild weather events. Opinions highlighted the importance of infrastructure resilience against extreme weather events and the need for improved community safety. Survey respondents discussed several solutions to improve the district's preparedness for extreme weather events in the future, including 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.

3.1.3 Critical customers engagement

Some customers experience higher risks than others. To ensure these customers are aware of this risk NPDC undertakes proactive engagement with these individuals.

The four flood protection dams are highly effective at reducing flood risk from high rainfall events, however their presence introduces the risk of a dam-break flood should they fail. To manage this risk NPDC undertakes dam-break flood modelling to identify properties at risk. These property owners are then notified by letter whenever the models are updated on the regulations change. This information is also provided in LIMs.

As part of the CMP development the houses at risk of habitable floor level flooding are identified. As part of the engagement on the CMP it is proposed that the owner of each property be advised of the risk and that it will appear on the property's LIM.

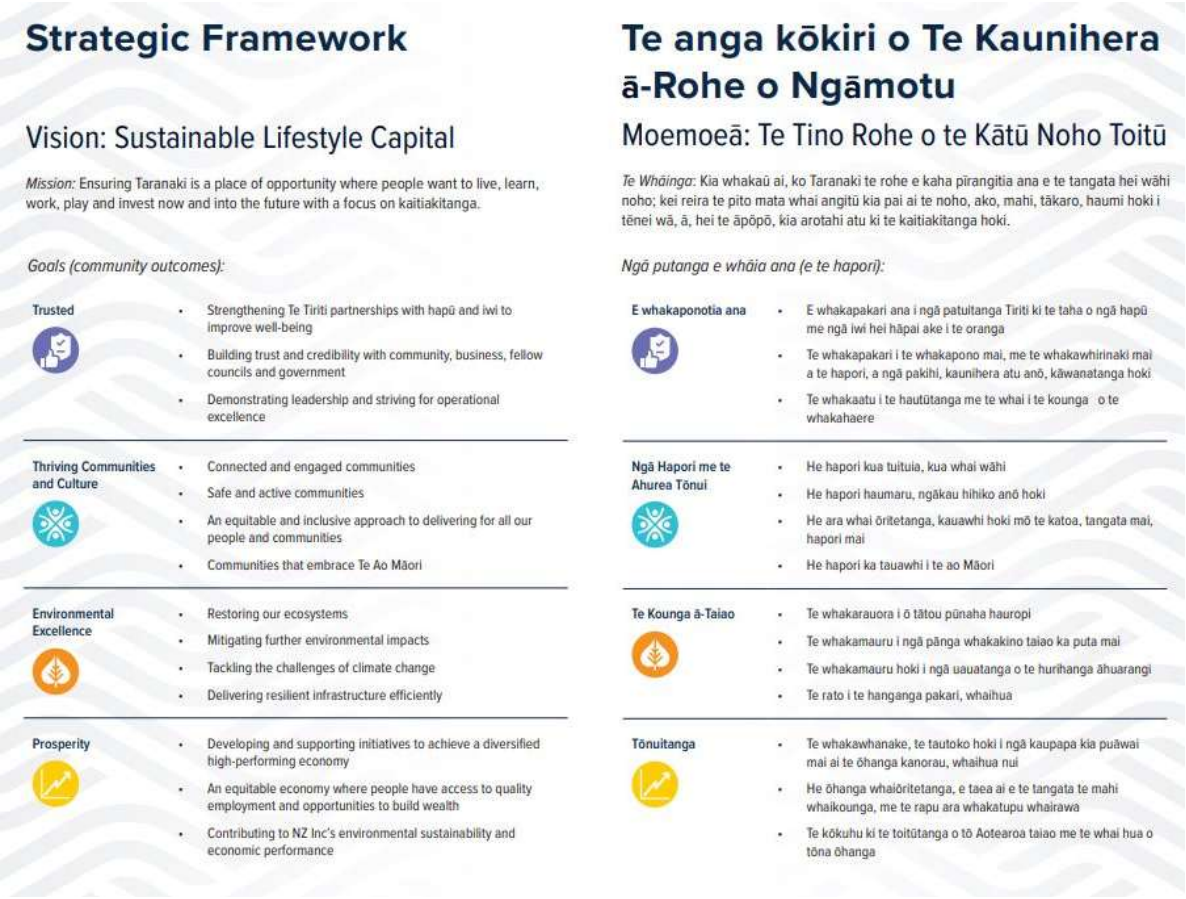
[1] https://www.npdc.govt.nz/media/pk4jdal1/final-report-research-first-public-engagement.pdf

3.2 Strategic and Corporate Goals

3.2.1 NPDC's Vision, Mission and Goals

This AMP is prepared under the direction of Council's vision, mission, goals and objectives, as shown in Figure 3.2.1 below.

Figure 3.2.1: NPDCs Vision, Mission and Goals



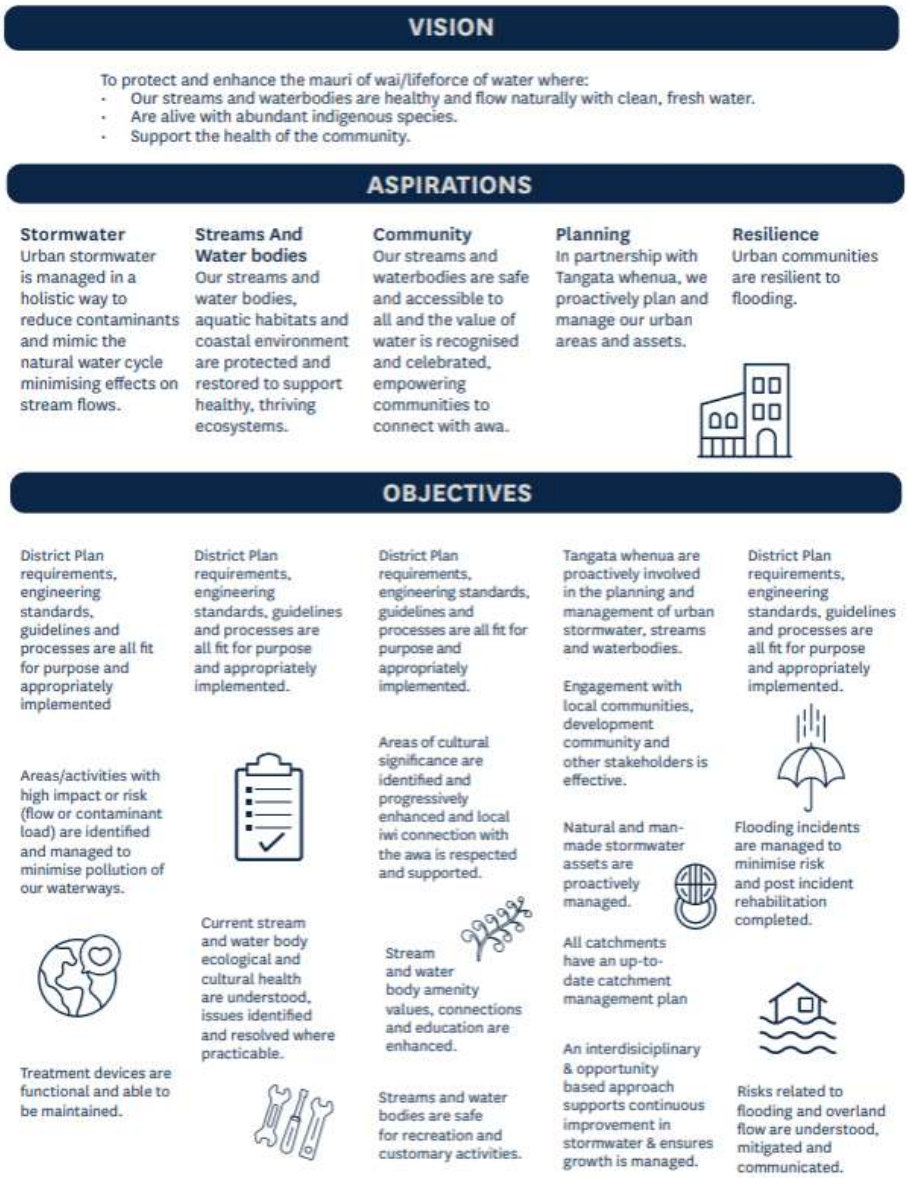
3.2.2 Te Mana o te Wai

Te Mana o te Wai, or 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 well-being. It is a concept that has been introduced by the National Policy Statement for Freshwater Management 2020 (NPS-FM) and moving forward will be the foremost fundamental concept that will guide our approach to water in New Zealand. 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.

3.2.3 Stormwater Vision, Aspirations and Objectives

Traditionally Council's service objectives for the stormwater and flood protection service have predominantly focused on the management of flood risk with minimal attention given to the environmental, cultural and broader social outcomes associated with the activity. To address this and align with the concept of Te Mana o te Wai, Council has co-created with iwi the Stormwater Vision, Aspirations and Objectives given in Figure 3.2.3 to include these broader outcomes and act as a framework for anything related to stormwater and flood protection in the district. The framework is deliberately broad to drive integration with other Council services with strong interdependencies such as Transportation, Parks & Open Spaces planning and Wastewater. As such, achieving the Vision will be impossible without good engagement with organisational stakeholders and the general community.

Figure 3.2.3 – Stormwater Vision, Aspirations and Objectives



3.2.4 Alignment

The NPDC Asset Management Strategy sets four focus areas for the next three years. Table 3.2.4 shows how NPDC's goals are aligned to these focus areas and what actions are proposed to address these focus areas. The actions identified are those specific to the stormwater service, the more general actions are captured in the Asset Management Strategy.

Table 3.2.4: Organisational goals, asset management strategy focus areas and how these are addressed in this Plan

Goal	Focus Area	Stormwater Aspiration	How focus areas are addressed
Trusted	Improve our asset data	Stormwater	Create and populate NPDC stormwater device register. Set firm timeframes for the handover of asset data and embed in process. Update the remaining useful life (RUL) based on condition data. Develop an asset criticality framework that supports the systematic identification of all critical assets. Add resource consents and hydraulic models to the asset register and assign a value. Improvements to our condition assessment program.
Thriving Communities and Culture	Improve our processes	Community	Catchment hydrology method development Stormwater Development Guidelines (greenfield and Densification) Develop O&M manual and maintenance schedules. Natural Asset Management Proposal Overland flow path protection Create model maintenance and update process. Explore suitability of a comprehensive consent Creation of Dam safety assurance program.
Environmental Excellence	Reduce our emissions	Resilience Streams and Waterbodies	Use of building materials and approaches with a lower carbon footprint Planting of the riparian margin
Prosperity	Improve our planning	Planning	Creation of CMP Creation of pre structure plans. Overland flow path, watercourse and catchment mapping. Creation contaminant load model. Continue our journey towards partnership with iwi and hapū. Continue to improve our engagement with the community and key stakeholders.

3.2.5 Other Strategies

There are other strategies whose drivers and goals are relevant to the management of our infrastructure. These strategies and their relevant drivers/ goals are captured in Table 3.2.5.

Table 3.2.5: Other strategic objectives and how these are addressed in this AMP

Strategy and Policy	Objective/ driver	Description
Infrastructure Strategy	Ensuring our existing assets remain fit for purpose	Refer Section 5.2 and 5.3
	Resilience and adapting to climate change	Refer Section 4.5 and 4.6
	Providing for sustainable growth and the changing needs of our community	Refer Section 4
He Puna Wai	Partnership with iwi	Refer Section 4.4

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 stormwater and flood protection service are outlined in Table 3.3 with a focus on those that have changed recently. Other statutory and regulatory requirements are captured in Appendix 1.

Table 3.3: Significant Statutory and Legislative Requirements and other key documents

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 the Three Waters activities.
Civil Defence Emergency Management Act 2002 and Amendments	Requires that an Emergency Management Plan be maintained and reviewed annually and that it is accepted as suitable by independent review
Building (Dam Safety) Regulations 2022	Sets the requirements to ensure classifiable dams are well operated, maintained and regularly monitored and that the potential impact of dam incidents and failures are reduced.
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 3.2.2.

Land Development and Subdivision Infrastructure Standard 2019	This Standard provides criteria for design and construction of stormwater 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 a different 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 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.

To achieve this and move to a framework that better recognises with the broader implications of the stormwater and flood protection activities and the concept of Te Mana o te Wai, Council have co-created with iwi a qualitative set of indicators that measure progress towards the objectives identified in the vision. Each objective is scored for current state, and goals set for 2026 (LTP review), 2033 (LTP conclusion year) and 2053 (30-year Infrastructure Strategy) horizons.

The scoring is completed with key stakeholders including TRC, NPDC and iwi based on a 1–5 scale, using a set of escalating outcome statements at either a catchment or district scale as appropriate for that objective. The results for the district scale indicators are given in Figure 3.4. The scoring of the catchment scale indicators will be completed as part of the CMP process for each catchment over the next ten years.

Figure 3.4 District-Wide Objectives: Current State and Target

Current State and Targets

District-Wide Objectives

KEY - SCORES

- 1 – Significant improvement required
- 2 – Moderate improvement required
- 3 – Some improvement required
- 4 – Objective nearly achieved
- 5 – Objective achieved

Aspiration	Objective	Current State	Target in 2026	Target in 2033	Target in 2053
1 STORMWATER					
Urban stormwater is managed in a holistic way to reduce contaminants and mimic the natural water cycle minimising effects on stream flows.	1.1(a) District Plan requirements are fit for purpose to support vision, aspirations and objectives.	4	4	4	5
	1.1 (b) Engineering standards, guidelines and processes fit for purpose and staff and industry competent to ensure transition to improved stormwater outcomes.	2	3	5	5
	1.3 Treatment devices are functional and able to be maintained.	2	3	4	5
2 STREAMS AND WATERBODIES					
Our streams and water bodies, aquatic habitats and coastal environment are protected and restored to support healthy, thriving ecosystems.	2.1 District Plan requirements, engineering standards, guidelines and processes are all fit for purpose and appropriately implemented.	3	3	4	5
3 COMMUNITY					
Our streams and water bodies are safe and accessible to all, and the value of water is recognised and celebrated, empowering communities to connect with awa.	3.1 District Plan requirements, engineering standards, guidelines and processes are all fit for purpose and appropriately implemented.	2	3	4	5
4 PLANNING					
In partnership with Tangata whenua, we proactively plan and manage our urban areas and assets.	4.1 Tangata whenua are proactively involved in the planning and management of urban stormwater, streams and water bodies.	3	4	5	5
	4.4 An interdisciplinary and opportunity-based approach supports continuous improvement in stormwater and ensures growth is managed.	1.5	2	3	5
5 RESILIENCE					
Urban communities are resilient to flooding.	5.1 District Plan requirements, engineering standards, guidelines and processes are all fit for purpose and appropriately implemented.	2	2	4	5
	5.2 Flooding incidents are managed to minimise risk and post-incident rehabilitation completed.	3	3	4	5

3.5 Levels of Service

The standard of service provided by Council is defined by the agreed level of service (LoS). The agreed LoS for stormwater and flood protection are:

- Provide a stormwater management system that protects people and property,
- Respond to service requests in a timely manner,
- Ensure customers are satisfied with the performance of our stormwater system,
- Comply with all resource consents for discharges from our stormwater system, and
- Effectively maintain NPDC's flood protection and control works

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

- Specific – it is clearly defined what the measure relates to,
- Measurable – success or failure can be measured without interpretation bias,
- Achievable – something that is possible to achieve,
- Relevant – something Council can reasonably be expected to have an impact on,
- Time-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 understandable to the layperson.

The same LoS 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.

Finally, performance measures can be leading or lagging. Leading indicators measure what the performance of the network is expected to be while lagging indicators measure what the performance of the network was.

3.5.1 Customers Levels of Service

Tables 3.5.1.1 and 3.5.1.2 outlines the lagging measures used to determine the performance for the stormwater and flood protection activities respectively. Current performance can be seen at a glance using the icons within the table. These icons are described in Table 3.5.1.3

Table 3.5.1.1: Lagging Stormwater Level of Service Measures

Relevant Services	Stormwater							
Measure	**C /T**	**Reporting Level**	**Latest Result (2022/23)**	**Target**				**Expected trend**
				2024/25	**2025/26**	**2026/27**	**2034/35**	
Level of Service Statement	Provide a stormwater management system that protects people and property							
The number of flooding events in the district per financial year.	C	LTP	0 	0	0	0	0	Improve – there are a number of projects proposed that will reduce flood risk
The number of habitable floors affected in each flooding event (per 1,000 properties connected to the Council's stormwater system	C	LTP	0 	1 or less	1 or less	1 or less	1 or less	Improve – there are a number of projects proposed that will reduce flood risk
Level of Service Statement	Respond to service requests in a timely manner							
The median response time to a flooding event (from the time that the Council receives notification to the time service personnel reach the site).	C	LTP	0.55 	1 hr	1 hr	1 hr	1 hr	No change
Level of Service Statement	Ensure customers are satisfied with the performance of our stormwater system.							
The number of complaints received about the performance of the Council's stormwater system (per 1,000 properties connected)	C	LTP	3.73 	8 or less	8 or less	8 or less	8 or less	Improve – there are a number of projects proposed that will reduce flood risk
Level of Service Statement	Comply with all resource consents for discharges from our stormwater system.							
The number of abatement notices received.	T	LTP	0 	0	0	0	0	No change
The number of infringement notices received.	T	LTP	0 	0	0	0	0	No change

The number of enforcement orders received.	T	LTP	0 	0	0	0	0	No change
The number of convictions received.	T	LTP	0 	0	0	0	0	No change
Level of Service Statement	Provide a good quality and safe stormwater system.							
The percentage of residents satisfied with the quality and safety of the district's stormwater supply	C	LTP	New Measure	70	70	70	70	Future trend to be determined once current performance is better understood.

Table 3.5.1.2: Lagging Flood Protection Level of Service Measures

Relevant Services	Flood Protection							
Level of Service Statement	Major flood protection scheme assets and systems are maintained in accordance with asset management plans and annual works programme.							
Measure	**C /T**	**Reporting Level**	**Latest Result (2022/23)**	**Target**				**Expected trend**
				2024/25	**2025/26**	**2026/27**	**2034/35**	
Assets to be maintained to full service potential in accordance with the Dam Safety Management System and Asset Management System (T1) scheduled maintenance.	T	LTP	New Measure	Achieved	Achieved	Achieved	Achieved	Future trend to be determined once current performance is better understood.
Dam Safety Management System is updated in accordance with Dam Safety Regulation.	T	LTP	New Measure	Achieved	Achieved	Achieved	Achieved	Future trend to be determined once current performance is better understood.
Level of Service Statement	Major flood protection scheme assets and systems are repaired in accordance with asset management plans and annual works programme.							
Following an event, damage is identified and programmed for repair.	T	LTP	New Measure	Achieved	Achieved	Achieved	Achieved	Future trend to be determined once current performance is better understood.

Detention dams comply with the Building (Dam Safety) Regulations 2002	T	AMP	Not achieved[1] 	Non-compliant	Non-compliant	Non-compliant	Compliant	Improve - The Highlands Park bund is classified as a dangerous dam under the new regulations. The "Dam Safety Regulations Compliance Program" is expected to address this issue.

Table 3.5.1.3: Key

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

3.5.2 Technical Levels of Service

NPDC also has two key target Technical Levels of Service:

Level of Service: The rainfall event that can be conveyed within the Primary flow path (Pipelines and open channels), thereby not affecting the designated asset or land type as given in Table 3.5.2.1.

Table 3.5.2.1: Technical Target Level of Service

Function	AEP (%)	Return Period (yrs)
Parks, Reserves, Sports Grounds, Residential Land	20	5
Commercial and Industrial Land, Public Buildings, Road Culverts	10	10
Bridges	1	100

Level of Protection: The rainfall event that can be conveyed within the secondary flowpath, thereby not affecting the designated asset or land type given in Table 3.5.2.2.

Table 3.5.2.2: Technical Target Level of Protection

Function	AEP (%)	Return Period (yrs)
Parks, Reserves, Sports Grounds, Residential Land	20	5
Road Culverts	2	50
Residential, Commercial and Industrial Floors, Public Buildings, Bridges	1	100

Due to the way the LoS is framed Council is currently unable to measure the degree to which the target LoS is achieved, rather it acts more as a basis of design for new developments. However, based on hydraulic modelling and complaint records there are a number of areas, especially in Waitara, where it is not being met.

Currently the degree to which the Target Level of Protection is achieved can only be measured for habitable floor levels in Waitara where a sufficiently detailed hydraulic model has been developed. The results are given in Table 3.5.2.3. These are not considered representative for the district as a whole as the flood risk in Waitara is significantly greater than any other district area.

Table 3.5.2.3 - Degree to which the target level of protection is currently achieved for Waitara (no climate change allowance)

Risk	Modelled Freeboard	Number of dwellings at risk of habitable floor level flooding	Percentage of community [1]
Expected to flood	No freeboard	115	3%
At risk of flooding	0 to 300mm	243	6%
Some risk of flooding	300 to 500mm	186	5%
Total	<500mm	544	14%

[1]Total number of habitable dwellings is approximated based on 66% of the 5923 buildings in Waitara being habitable.

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
- Iwi/hapū cultural aspirations
- 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 significant 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 Demand Impact and Management Plan

The impact of relevant demand drivers on the stormwater and flood protection service 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:

- creation and application of development standards that control how new developments influence the stormwater and flood protection networks
- use of regulatory tools such as the district plan to restrict or prevent development in high-risk areas
- supporting climate change mitigation activities
- 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)	New developments add assets increasing opex costs, change the hydrological regime leading to increased flooding and environmental damage and add contaminants to the runoff leading to environmental damage	Allow additional opex to manage additional assets. Require hydraulic neutrality as far as practicable to minimise changes to the hydrological regime. Require stormwater treatment to manage contaminants from high-risk areas.
Government Reforms – delivery approach	Three Waters Reform, Resource Management Act Reform and Local Government Act review all underway but expected to be repealed or changed within six 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 management of some major assets.	Variety of proposed changes to legislation to replace the reforms. More certainty required to identify resourcing implications	The Vision and Roadmap will minimise any disruption by providing a clear plan that has been co-created with iwi and adopted by Council Council to continue standard practice of monitoring and reviewing change when new legislation is drafted
Government Reforms – scope and focus of activity	Currently meeting legislative requirements. Primarily focused on flood risk management	A change in approach to require wider considerations in line with Te Mana o te Wai	Additional cost. Improved outcomes for residents and the environment	The Vision and Roadmap will drive the change in approach.
International instability and cost of living crisis	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.
Building (Dam Safety) Regulations 2022	The 4 high PIC dams are currently non-compliant but are expected to be compliant before the regulations take effect	Significant upgrades will be required to the Highlands Park and Waimea Dams	The upgrades are projected to cost $16.5M over 10 years and will result in reduced risk to the community from dam failure.	A business case has been prepared covering the work required and the costs are included in this AMP.
Changing community expectations	Currently 71% and 54% of the community are	Community tolerance for flood risk is expected to		Development of CMP (including hydraulic modelling) to better understand both the flood risk

	very/fairly satisfied with the stormwater and flood protection service. This has declined over the 20 years this has been measured.	decrease and expectations for their environment increase.		and wider social, environmental and cultural context to enable interventions to address multiple issues.
Resilience	Refer to section 6.3 for more details			

4.4 Cultural Aspirations

Better recognition of the concepts captured in Te Tiriti o Waitangi is becoming an increasingly significant driver, both morally and legally, for many activities in New Zealand, especially those associated with the management of natural resources. For the Three Waters activities a key element of this has been the inclusion of the concept of Te Mana o te Wai in various regulatory documents including the National Policy Statement for Freshwater.

Iwi aspirations for the stormwater service are mostly captured in the Stormwater Vision and Aspirations discussed earlier. To achieve these aspirations will require a significant change in the way the stormwater service is approached along with a number of other wider changes, both from within Council and the wider community. It will also require Council to take more of a partnership approach towards the activity, as is captured in the planning aspiration.

Given the broad nature of the aspirations most, if not all, of the actions identified in this plan will move towards achieving this, however some will be more influential than others. As such the key actions that will help progress towards achieving iwi's aspirations are identified below:

1. The co-creation and 3-yearly update of a Stormwater Vision and Roadmap to set common goals, measure progress towards these goals and identify the actions required to get there
2. The co-creation and regular updating (10yrly at minimum) of CMP. These will allow us to; understand the current challenges facing the catchment, identify opportunities for improvement, measure current state and set goals against the relevant catchment scale objectives.
3. Development of a Māori engagement framework (council wide initiative)

4.5 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.

This commitment is captured in a number of documents as shown in Figure 4.5.1.

Figure 4.5.1: Decision-making documents relevant to sustainability

Table 4.5.1 summarises the changes to the stormwater and flood detention activity that are being made to increase overall sustainability and additional opportunities that are currently not being pursued due to a lack of resource and/or budget.

NPDC, like many organisations, is working to reduce carbon emissions 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. The proposed actions and potential opportunities for reducing associated with the stormwater service are also captured in Table 4.5.1.

Table 4.5.1 Sustainability Initiatives

Action	Long-term impact/ sustainability concern	Outcome of planned change	Implementation plan	Additional opportunities
Treatment of Stormwater runoff	Runoff from roads and other hardstand areas includes contaminants and sediment that negatively impacts aquatic life	Healthier aquatic ecosystem	Treatment is now required for runoff from new subdivisions and some roading projects. Better clarity will be provided by the proposed development guidelines. Erosion and Sediment control is required for large areas of bare earth	Retrofitting of existing stormwater network. Improvements in literature, education and enforcement of erosion and sediment control.
Achieving hydraulic neutrality in new developments	Developments can significantly change the natural water cycle making low flows lower and high flows higher. This leads to negative impacts on the aquatic and riparian ecosystem.	More natural flows leading to a healthier aquatic ecosystem	Hydraulic neutrality is now required in new subdivisions and some roading projects Better clarity will be provided by the proposed development guidelines. Adding existing devices to the asset register and preparing O&M plans and maintenance schedules.	Improve understanding of the functioning of private soakage and storage devices and what maintenance is required. Encourage the use of permeable paving, rainwater tanks etc.
Management of natural assets	Responsibility for the maintenance of urban waterbodies is a grey area with multiple parties involved (TRC, NPDC Three Waters, NPDC Parks, iwi and private property owners) and unclear responsibilities. This leads to negative impacts to the aquatic and riparian ecosystems.	Better understanding of what maintenance is required and who is responsible for it.	Action in the Stormwater Roadmap to put together a natural asset management proposal.	Council to provide additional support (education and/or resources) to awa restoration activities on private property.

Education around what can go into the stormwater system	Contaminants washed off hardstand areas (e.g. paint, detergent, uncured concrete, grass clippings etc) usually go into the stormwater system and into our awa leading to negative impacts to the ecosystem.	The public are better informed about the consequences of their actions and more connected with their awa to make better decisions.	NPDC has a basic Three Waters education program, mostly targeting schools.	Expand the education programme to a wider audience.
Re-establishing fish passage	Development has led to the creation of structures that are very hard for fish to get past (e.g. perched culverts). This makes large areas of our awa inaccessible to fish, especially migratory species.	Fish can freely migrate up and down our awa increasing the amount of available habitat.	Using retrofitting devices (such as spat ropes) to existing structures to improve passage. New structures (including renewal of existing structures) should be built to allow fish passage from the outset. As part of the CMP's we will be identifying and mapping all barriers to fish passage	Prepare prioritised improvement plans to address fish passage barriers in a structured way.
Planting of the riparian margin	A lack of riparian vegetation leads to higher water temperatures and lack of habitat. Riparian vegetation can also remove contaminants as runoff passes through it. A lack of riparian vegetation leads to negative impacts on the ecosystem.	More riparian planting of the right type leading to lower water temperatures, improved habitat and improve water quality.	'Planting our Place' initiative to plant 34ha of urban forest over the next 20 years.	Council to provide additional support (education and/or resources) to awa restoration activities on private property.
Use of building materials and approaches with a lower carbon footprint	Stormwater pipes are typically concrete so have a high embodied carbon. The sediment removed in detention and treatment ponds can go anaerobic and produce methane and other greenhouse gases. Both of these exacerbate climate change.	Minimising embodied and operational carbon is considered a part of the standard design process.	There is currently no specific plan to address this concern.	Build concern into the proposed development guidelines. Adopt a standard approach for measuring carbon across council projects. Review Council's approved products list through a carbon lens.

4.6 Climate Change Adaptation

Irrespective of how much we reduce emissions climate change is anticipated to result in several 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. Within an asset management context they can be considered both a future demand and a risk. As such all of these impacts and how Council proposes to address them are captured in Table 4.6.1 to avoid duplication.

Table 4.6.1 Managing the Impacts of Climate Change on our Assets and Services

Climate Change Description	Projected Change[1]	Impact on Service	Demand Management Plan
Severe weather events	Rainfall associated with severe weather events is projected to increase between 9% and 35% (depending on the location, duration and RCP) by 2090.	Increased flood risk resulting in reduced LoS or increased investment in infrastructure. Potential for increased operation and maintenance requirements pre and post event.	Hydraulic modelling to better understand flood risk and mitigation options. New and upgraded stormwater assets are designed based on the RCP 8.5 scenario. No action required for increased operation and maintenance requirements in this AMP as effect will be minimal over next 10 yrs.
Average Rainfall	There is a 2% (RCP 4.5) to 8% (RCP8.5) increase in annual rainfall projected by 2090 for most of the urban areas. The most significant increase is projected to be in winter where under an RCP 8.5 scenario an increase of 12-16% is projected for all urban areas.	Exacerbates the flood risk associated with the increased severe weather events by making the soil saturated pre-event and thus increasing runoff.	To be considered in the antecedent conditions used when creating hydraulic models.
Increased temperature	Temperatures are projected to increase 1°C (RCP4.5) to 3°C (RCP8.5) by 2090 for most measures.	The direct impact on the stormwater assets and services will be minimal but the effect on the broader vision and aspirations could be significant. Key implications of increased temperature are increased risk to native ecosystems from invasive species and increased water temperature.	Outside the stormwater service invasive species risk is managed via the predator-free programme and other NPDC and TRC initiatives. Increases to water temperature are reduced through TRC's Riparian Management Programme and NPDC's Plant our Place Project.

			The effects are also reduced through encouraging good development through structure planning and development guidelines.
Ecosystem Health	The impact of climate change on ecosystem health is complex and poorly understood. Changes might include Habitat loss at the coastal margin, Increased risk to indigenous ecosystems from invasive species and Changes to aquatic lifecycles due to changed habitat (e.g. temperature, river flows etc)	The direct impact on the stormwater assets and services will be minimal but the effect on the broader vision and aspirations could be significant.	Improving general ecosystem health, as identified in the Vision and Roadmap, makes the ecosystem more resilient to the effects of climate change. Actions to improve ecosystem health include designing for hydraulic neutrality, stormwater treatment for high-risk areas and taking a more integrated and holistic approach to the activity.
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.	Habitat loss at the coastal margin. Increased flood risk in low lying areas, particularly Waitara.	Hydraulic modelling to better understand flood risk and mitigation options.

[1]NIWA (2022) *Climate Change Projections and Impacts for Taranaki.*

4.7 Asset Programmes to Meet Demand

The new assets required to meet demand may be acquired, constructed or donated. The approach to acquiring new assets is 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 done either 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.

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 hierarchy

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 when:

- new assets are acquired (e.g. capital projects, community developments, operational renewals)
- maintenance works are undertaken
- new valuations or condition assessments are completed, and
- assets are disposed of

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.

5.1.2Scope

The assets covered by this AMP are listed in Table 5.1.2.1. Valuations for all assets are undertaken every 3 years and were last conducted in March 2022.

Table 5.1.2.1: Stormwater and flood protection assets

Asset category	Description	Amount + Unit	Gross Current replacement Value ($million)	Depreciated Replacement Value ($million)
Pump Stations	Waitara War Memorial	1	$1.6	$0.9
Reticulation Network	Manholes	5,295	$22.2	$15.1
	Reticulation	292 km	$440.7	$271.1
	Service Connections	14 km	$2.6	$1.7
Inlets. Outlets and Wetlands and treatment/storage devices	Inlets, Outlets and Nodes	8,836	$17.6	$6.9
	Wetlands[4]	17	$0[1]	$0
	Ponds[4]	45	$0[2]	$0
	Soakage devices[4]	21	$0[2]	$0
	Swales[4]	23	$0[3]	$0
Flood Protection	Dams[7]	4	$6.8[5,6]	$5.6[6]
	Bunds	8	$0[1]	$0
	Stopbanks	2	$0[2]	$0
	Diversion Tunnels	3	$18.3	$17.1
	Huatoki Plaza – Weir	1	$0.3	$0.2
Consents		87	$0[2]	$0
Hydraulic Models		2	$0[2]	$0
		Total value	**$510.5**	**$318.9**

[1]Assets comprised solely of natural materials (such as wetlands and bunds) do not get valued under the Asset Accounting Policy.

[2]Recognised as an asset and should be capitalised under the Asset Accounting policy. Process identified in Section 8.2.

[3]Capitalisation to be confirmed. Action identified in Section 8.2.

[4]Ownership (both private vs public and/or responsible activity within Council) to be confirmed. Expectation is wetlands to be owned by Parks or Three Waters depending on function, ponds to be owned and operated by Three Waters, soakage and swales to be owned and operated by Transport. Ownership determination identified in Section 8.2.

[5]Assets significantly undervalued. Recommended a full revaluation during 2025 revaluation process. Action in Section 8.2

[6]Valuation does not include Highland Park Dam (Added to the asset register in 2024 and will be valued in the 2025 valuation).

[7]Value may increase as the modelling is completed and other impoundment facilities are found to trigger one of the criteria. For example, Sutherland Park Bund is currently being assessed.

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, 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 because, while Council has a vested interest, the organisation cannot dictate future actions to be taken in the management of these assets. Table 5.1.2.2 details the assets that are specifically being excluded from this lifecycle management plan section and the reason(s) why.

Table 5.1.2.2: Assets excluded from this plan

Asset	Details	Why excluded
Stopbanks	Stopbanks along the Waitara, and Mangaone awa which are a key part of the flood protection infrastructure in these areas.	Stopbanks are owned and maintained by Taranaki Regional Council.
Sump gratings and curb and channel	Curb and channel and sumps are required to get runoff from impermeable and semi permeable surfaces into the stormwater network	NPDC's Transport team owns and is responsible for operation and maintenance of the curb and channel network and sump gratings. It is also responsible for cleaning the sumps.
Privately owned pipes that convey stormwater	There are a number of privately owned pipes that discharge to the stormwater network or convey awa under built assets for which failure would result in flooding and environmental damage.	These pipes are privately owned; operation and maintenance responsibility lie with the owners.
Privately owned treatment and storage assets	Privately owned storage and treatment devices form a critical part of the stormwater network to prevent flooding and environmental damage	These pipes are privately owned; operation and maintenance responsibility lie with the owners.

While the above assets are excluded from this AMP, their proper operation and maintenance are essential to the functioning of the stormwater system and in many cases (such as private soakholes and culverts) this is not occurring. This represents a risk to the functioning of the stormwater network and achieving the Stormwater Vision. Addressing this risk has been identified as a potential area for improvement.

5.1.3 Asset 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 5.1.3. These deficiencies were identified from asset condition assessments, hydraulic modelling and complaints register and the Dam Safety Regulations Compliance Strategic Business Case.

Table 5.1.3: Known service performance deficiencies

Asset & Location	Service Deficiency	Management Plan
Pipes under the railway near Autere Street Strandon Pipes adjacent to Marie Street and Kelly Street (Inglewood); Pendarves Street and Kawaroa Park (New Plymouth).	Pipes are in very poor condition and at risk of collapse	Stormwater renewals are prioritised to address those representing the highest risk first.
Multiple areas across the district, but worst in Waitara, Inglewood, the Valley and lower Mangatoku areas.	Not meeting Council's Level of Protection or LoS for flooding. Refer to Section 3.5 for more details	Most of the actions identified in this AMP will help address this deficiency in some way.
Highlands Park Dam	This dam was not built to meet the requirements of a High Potential Impact Classification (PIC) dam as, at the time it was built, it was not one. Since then the criteria has changed; it is now a high PIC dam but it is not compliant with the regulations and has been classified as "dangerous" primarily due to its spillway capacity. It is likely there are a number of other issues as well.	The Dam Safety Regulations Compliance Strategic Business Base proposes this will be resolved by 2032.
Waimea Dam	It is believed that the auxiliary spillway for this dam has insufficient capacity to meet the regulations, however further work is required to confirm.	The Dam Safety Regulations Compliance Strategic Business Case proposes this will be resolved by 2036

5.1.4Asset condition

Broadly speaking there are five types of stormwater and flood protection assets that require condition assessment. These are detailed below along with the current approach to condition assessment:

Pipes and diversion tunnels: As of September 2023, 12.5% of assets by length have been inspected since 2020, and 90% of critical pipes. With current funding and resourcing that amounts to approximately 3% of the network being inspected per year. This means that, with no changes, the entire network will have inspections completed by 2052. It is not clear whether this inspection rate will be sufficient to keep on top of renewals, or whether a higher quantity of condition inspections per year will be required. Inspection results so far show a number of localised pipe failures which appear to be associated with the loading on or the location of the pipe rather than pipe age. As we learn more, our CCTV prioritisation process will continue to be refined to account for risk factors such as whether the pipe is below a railway or State Highway, the pipe location (for example, under buildings), and whether or not the pipe carries a stream.

Waitara War Memorial pump station: Formal condition assessment of this asset has not occurred and is not planned. This is part of a broader issue with condition assessment of all Three Waters' plant and equipment assets.

Detention Dams: Condition monitoring of the detention dams occurs as part of the Dam Safety Assurance Programme. However, the results are not recorded in the asset register as each dam is represented by a single asset, not its component parts.

Storage and treatment assets: Condition assessment of these assets is not occurring. Undertaking condition assessments on these assets (once uploaded to the asset register) has been identified as an improvement action in the stormwater roadmap.

Hydraulic models: This is not occurring. Preparing condition assessment criteria and undertaking condition assessment forms part of the model maintenance and update process identified in the improvement plan.

Asset condition is/should be monitored and recorded on the asset register using a rating system, as detailed in Table 5.1.4.

Table 5.1.4: Condition Rating System

Condition rating	Description of condition	Useful remaining life for pipes[1]
1	Excellent - free of defects, only planned and/or routine maintenance required	>50 years
2	Good - minor defects, increasing maintenance required plus planned maintenance	30-50 years
3	Average - defects requiring regular and/or significant maintenance to reinstate service	10-30 years

4	Poor - significant defects, higher order cost intervention likely	3-10 years
5	Very poor - physically unsound and/or beyond rehabilitation, immediate action required	<3 years
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.*	

[1]Pipe condition assessment is based on the NZ Gravity Pipe Inspection Manual (4th edition) and does not fully align with Councils standard rating system.

Addressing these issues and filling gaps in the historical data are actions identified within the Asset Management Strategy improvement plan for all asset groups.

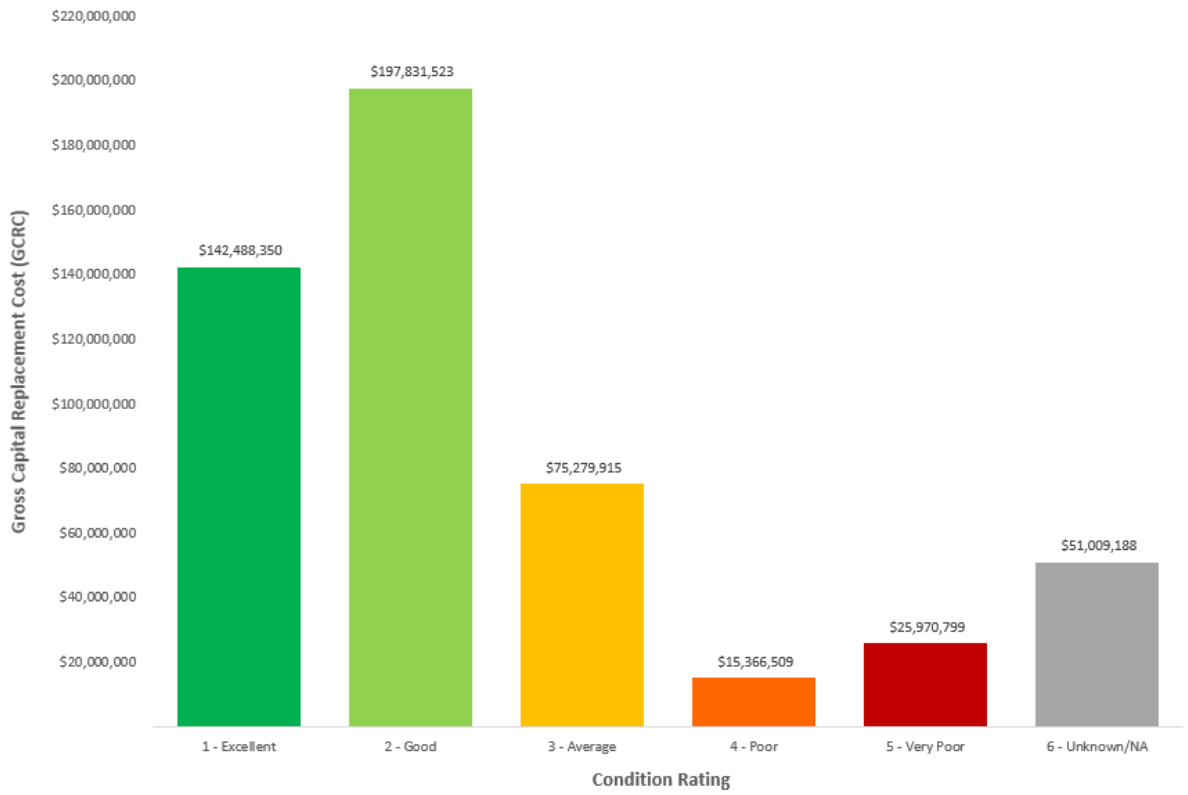
In addition, there are the following issues for stormwater and flood protection:

- When CCTV inspections commenced in 2020, due to a lack of operators adequately trained in condition assessments, pipes were incorrectly assessed into three categories; maintenance required, structural fail, and pass. The structural fails have since been converted to a condition, but conversion of the maintenance required, and pass categories is still outstanding.
- The way CCTV data is stored makes it difficult to access and interpret the results for use in asset planning.
- 11% Of the assets inspected from 2020 to now require maintenance. This is of some concern and indicates the importance of continuing, and preferably expanding, the inspections and associated maintenance activities.
- Pipes are not reinspected after maintenance has been completed. Reinspection provides a condition assessment score in cases where serviceability issues prevented the CCTV inspection from occurring. This means that the cause of the serviceability issue (e.g.: potentially a failing pipe) is not being picked up.
- Pipes with serviceability issues are not being scheduled for re-inspection if the issue is likely to reoccur (e.g. flat grades, downstream of erosion site, damaged pipe, obstruction that can't be removed etc)
- Detailed condition assessments have not been completed on the poor and very poor assets as recommended by the NZ Gravity Pipe Inspection Manual. This may lead to overestimating the number of poor and very poor assets.
- The RUL for each asset has not been updated based on the condition assessment, where available. It is still based on age.
- A number of the defects identified are highly localised in nature and can be addressed without complete pipe replacement. This is not currently reflected in the data.

Actions are identified to address these issues in the improvement plan.

The overall condition profile of the stormwater and flood protection assets is shown in Figure 5.1.4.1. It was created based on RUL and as such is not considered to be an accurate representation of actual condition.

Figure 5.1.4.1: Asset Condition profile (based on RUL)



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

Below details the current understanding of the state of the assets for each of the groupings in Figure 5.1.4.1:

Pipes and diversion tunnels: The condition of 16% of the pipe network (by value) that has been inspected using CCTV is given in Figure 5.1.4.2. Of the assets in very poor condition there are a number under railways and houses (Figure 5.1.4.3) which will be prioritised. If this is representative of the network then there is $66M of pipes in poor or very poor condition.

Figure 5.1.4.2 – Network condition of pipes that have been CCTV inspected by value

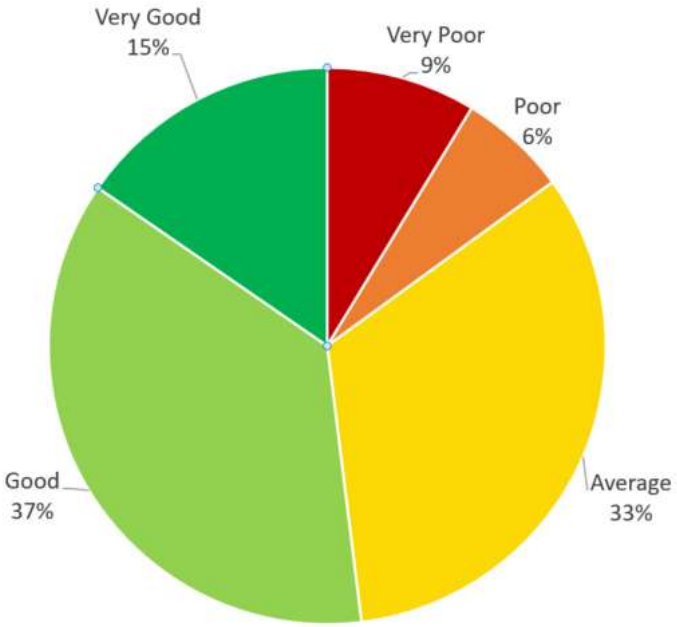
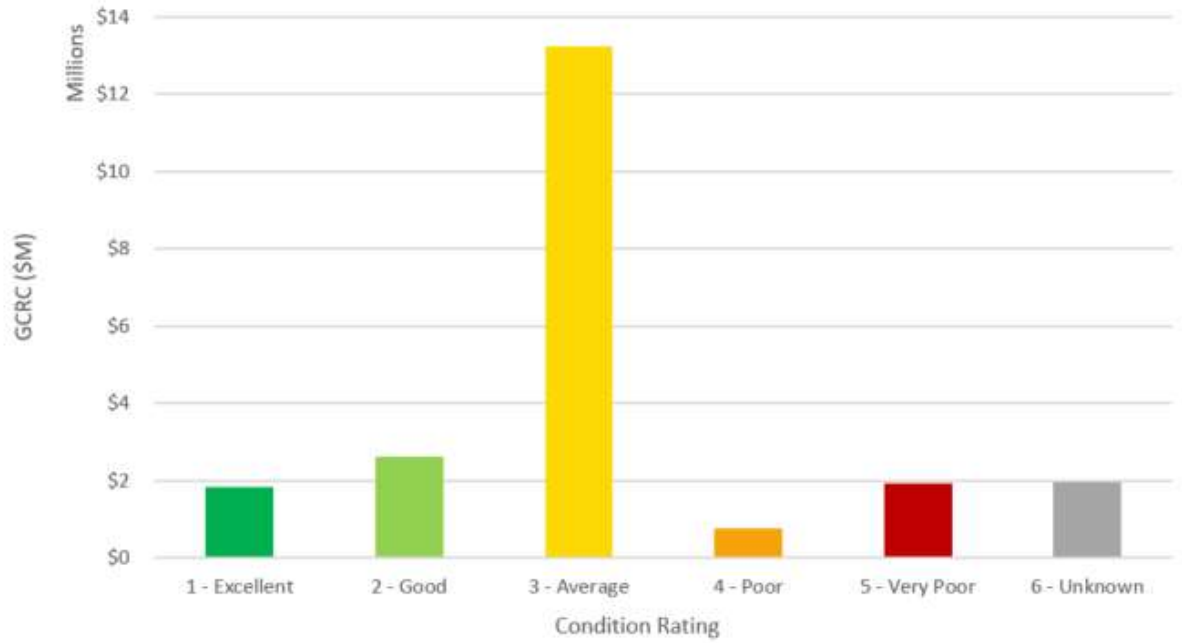


Figure 5.1.4.3 – Failing pipes near Marie Street, Inglewood (left) and under railway near Autere Street (right)

Of these pipes 3% by length, or $28M by gross capital replacement cost, are considered to be critical as discussed in Section 6.1. The condition profile for these assets is given in Figure 5.1.4.4.

Figure 5.1.4.4: Critical pipes condition profile (based on CCTV inspection)



The Mangaotuku Diversion Tunnel has been assessed as in poor condition but is expected to increase to moderate once identified maintenance actions have been completed. The Mangaotuku Outlet Tunnel is considered to be in good condition.

Waitara War Memorial pump station: Formal condition assessment of these assets has not occurred, however there are no known issues with the pump station structure which was built in 2002 and has a 100-year expected life. The mechanical and electrical equipment is twenty years old and likely nearing the end of its useful life.

Detention Dams: As earth dams these do not deteriorate like other structures, however they are considered to be in good condition.

Storage and treatment assets: As these are only just being recognised as assets, it is expected there are a large number with significant serviceability issues to the extent that they may require renewal.

Hydraulic models: Of the 13 catchment models, the Waitara model is considered to be in good condition, the Huatoki model in poor condition and the rest in very poor condition due to be being greater than twenty years old.

5.2 Operations and Maintenance Plan

Operations activities are those regular activities required to provide the service. Examples of typical operational activities include monitoring, insurance, inspections 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 equipment, repairs, cleaning out blocked pipes etc.

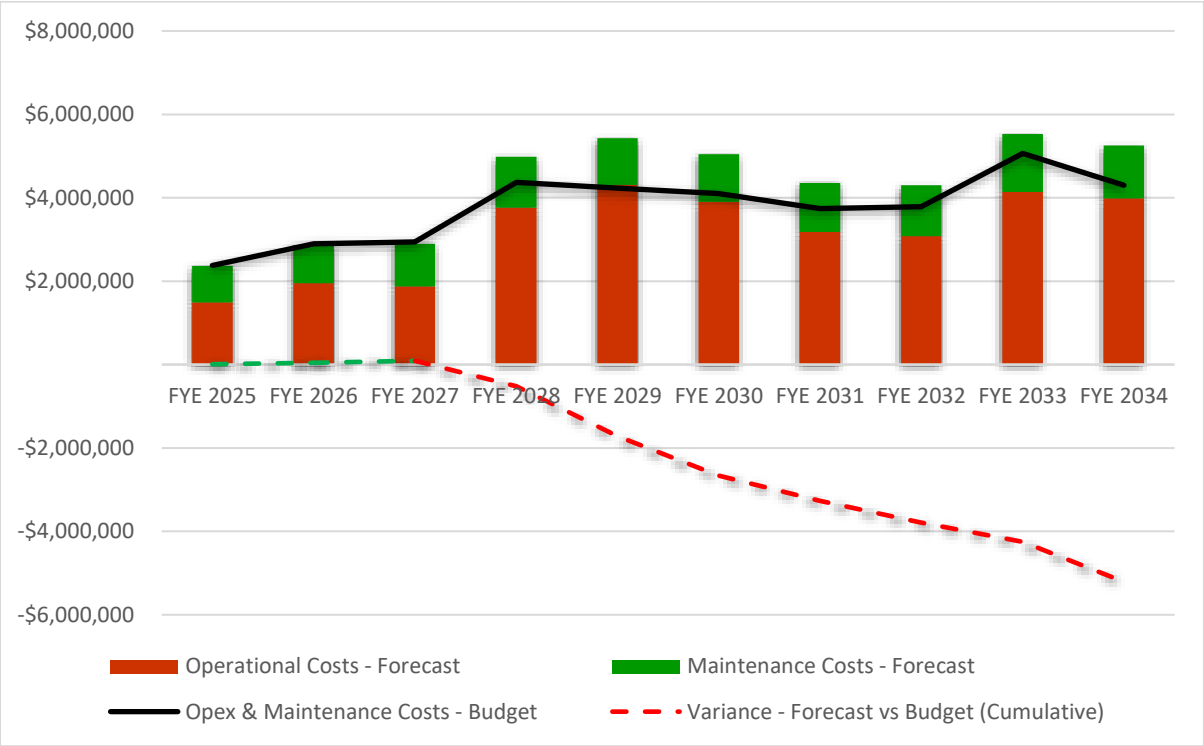
The operation and maintenance budget is considered to be insufficient to meet target service levels. This budget includes an allocation for both preventive and reactive maintenance. Assessment and prioritisation of reactive maintenance is undertaken by operations team members using experience and best judgement.

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 forecast to increase. Where assets are disposed of, the forecast operations and maintenance costs are expected to decrease. Figure 5.2.1 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance budget.

80% of the final operations budget is consequential opex associated with capital projects. This opex funds the portion of the projects unable to be capitalised (ie: elements of the CMP, early investigations and design, planting and additional operations and maintenance costs once the project is complete). The $7.3M variance between forecast and budget as shown in Figure 5.2.1 is due to a reduction in Stormwater consequential opex, which is in turn driven primarily by the deferral of the Smith Street and Cross Street (Lepperton) Drainage Upgrades, 38 Egmont Rd Stormwater, Upper Waiari Stormwater Upgrades Stage 3 and Waitara West Stormwater Upgrade. The balance ($0.3M) of the variance is due to the cancellation of Stage 7 Pennington Park and Stage 8 of the Tangaroa Restoration projects. There have been no changes to the Flood Protection opex budget.

Figure 5.2.1 Operations and Maintenance Summary



All values in graph are adjusted for inflation.

The initial general operation and maintenance budget request was made under the direction of previous legislation that Three Waters budgets could only be included for only the first 2 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 ten 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 ten year period, so there is no deferred maintenance for the next LTP.

Between 11-14% of the assets inspected by CCTV between 2020 and 2023 require maintenance. Work is ongoing to understand the implications of this in terms of the budget for both these interventions and potential need to expand the CCTV program.

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,'
- RUL information and values captured in the asset register, and
- Staff judgement on the remaining life of the asset, based on asset condition, maintenance expense, or asset failure.

Renewals can 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 can also be applied when Council assets are impacted by other organisations. For example, if a road is going to undergo significant renewal, Council may decide to renew those water, wastewater or stormwater pipes first over others in the queue. 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 5.3.1.1. Asset useful lives were last reviewed in June 2022 as part of Council's scheduled asset valuation process.

Table 5.3.1.1: Total useful lives of assets

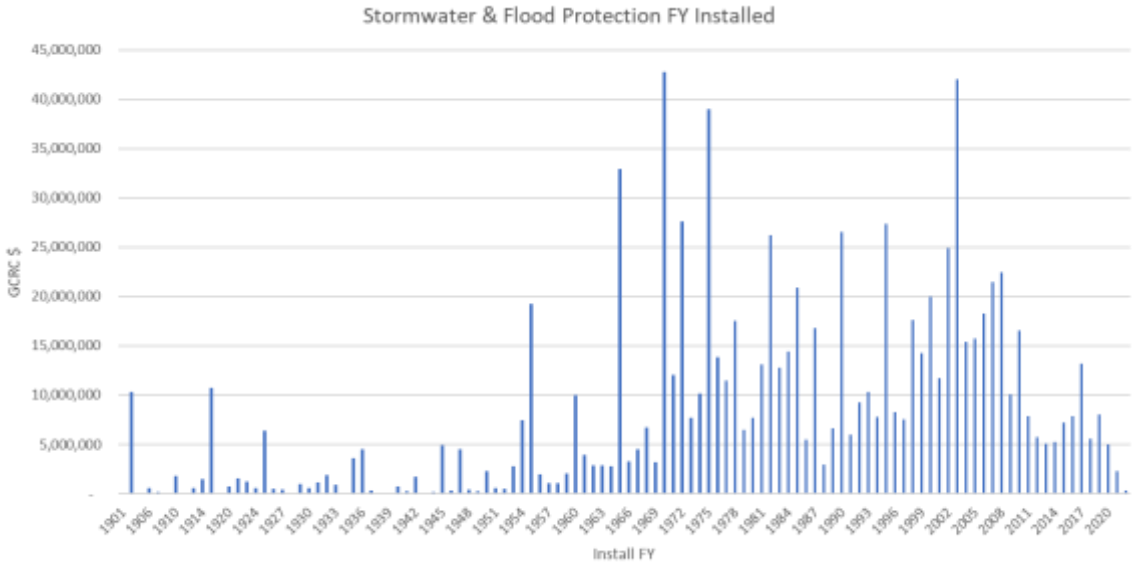
Asset category	Description		Total useful life (yrs)
Pump Station	Building		64
	Mechanical and Electrical Equipment		20-40
Reticulation Network	Manholes		100
	Reticulation and Service connections	Plastic and Concrete Pipe	80-110
		Glazed Earthenware pipe	120
		AC Pipe	60
Inlets, Outlets and Wetlands and treatment/storage devices	Inlets, Outlets and Nodes		30-80
	Wetlands		TBC[1]
	Ponds		TBC[1]
	Soakage devices		TBC[1]
	Swales		TBC[1]
Flood Protection	Dams		200
	Bunds		TBC[1]
	Stopbanks		TBC[1]

	Diversion Tunnels	100-150
	Huatoki Plaza – Weir	98
Consents		10-30
Hydraulic Models		10

[1]These assets are still being loaded into the council's asset management system and as such do not have agreed useful lives at this time.

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 30-year forecast of the future renewal requirements based on the assets RUL. The RUL is currently predicted based on age and expected useful life and does not take the results of condition assessments into account. This dataset is one that guides long-term planning and overall renewal budgeting.

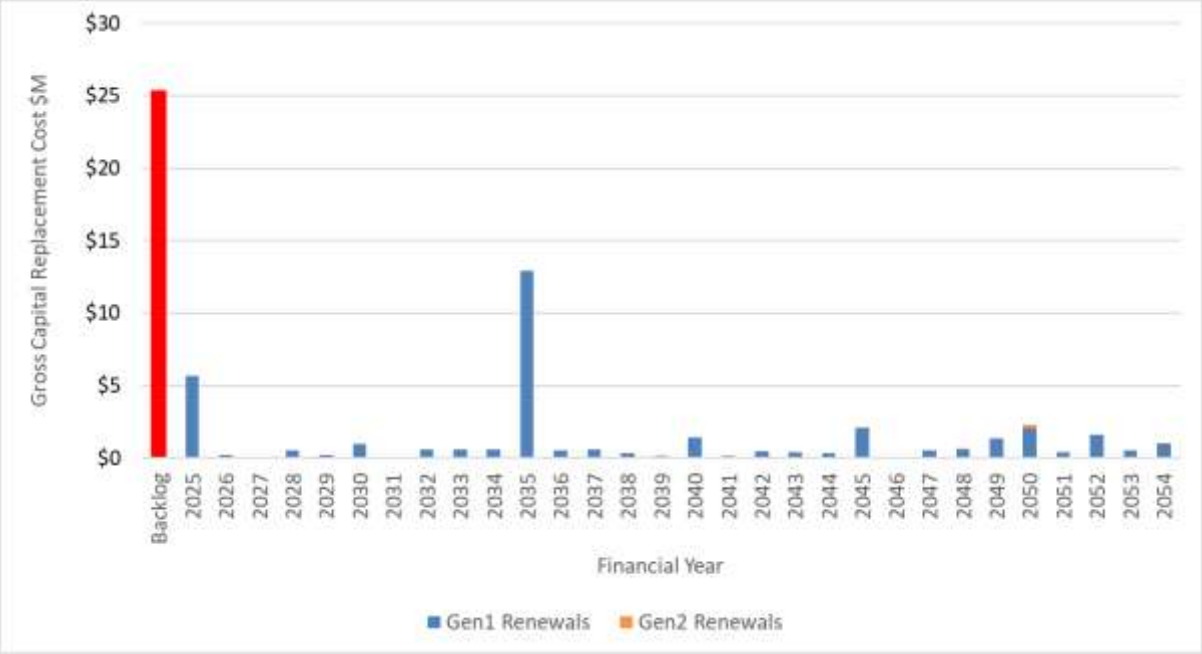
The graph shows that by continuing to use RUL there is a significant backlog of $25M in renewals; $4M is due to using a default installation date of 1904 when the actual date is unknown and the balance likely driven by 2009 funding cuts in response to the global financial crisis. The spike in 2035 is due to a large number of pipes across the district coming up for renewal that year and is likely to represent an error in the "date installed" data that should be investigated.

Overall RUL predicts $35M of renewals required within this AMP timeframe.

This can be compared against the projection of $72M of renewals required if the condition data is assumed to be representative. This projection is based on renewing the 15% of pipes in either poor and very poor condition along with their dependent assets (manholes, inlets, outlets and service connections, which typically are 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 inlets, outlets 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
- The lack of a good understanding of network condition due to only 16% of the pipe network (by value) having condition assessments completed.
- Assets requiring renewal before their expected useful life is complete. This can be due to a range of drivers, but initial results are indicating heavy loading events associated with roads and railways are leading to structural pipe failure.
- The high degree of uncertainty in estimating the Gross Capital Replacement Cost (GCRC) as displayed in Figure 5.3.1.2. The Waiwaka Terrace culvert renewal project is an example of a renewal costing more than the GCRC. A number of additional items (ie: land purchase) were not accounted for in the asset's GCRC. An example of the innate level of uncertainty is the renewal of assets 40072589 and 40181094 crossing SH3, which due to the condition issues being identified early enough could be lined costing a tenth or less of what trenching would have cost.

Figure 5.3.1.2: Asset renewal forecast by RUL



All figure values are shown in current day dollars.

- The change in expectations around LoS, and the proportions that should be covered by renewal budgets and by LoS budgets.
- The ever-increasing expectations from the community, Central Government, Regional Council and Iwi/hapū around engagement and consenting

The final LTP budget for renewals is $67M, which is $5M less than the projection based on the condition assessment. Based on this it is expected that the bulk of the backlog will be resolved over the ten-year period of this AMP.

5.3.2 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- ensure the reliability of the existing infrastructure to deliver the service that the asset was constructed to facilitate (e.g. replacing a collapsing pipe), or
- to ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. renewals driven by dam safety requirements)

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 that 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

Stormwater and Flood Protection renewals are broken down into four groupings:

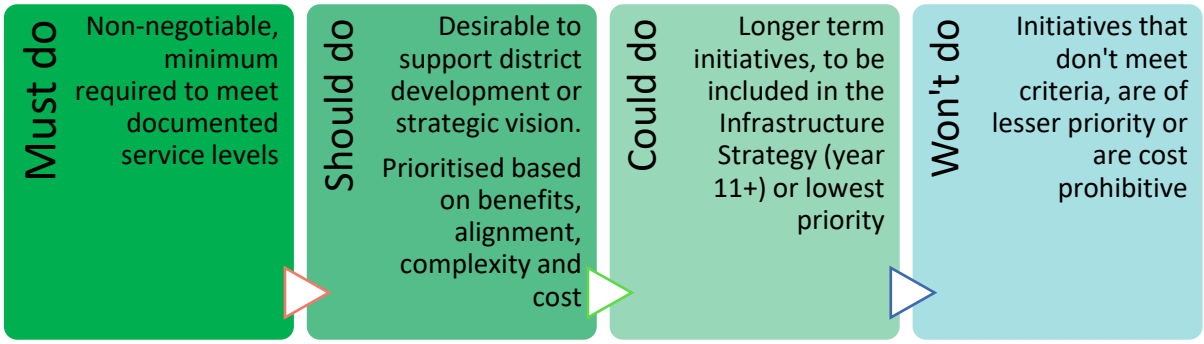
- General renewals
- Resource Consent renewals
- Hydraulic model renewals (funded through LoS as current models have not been considered assets and depreciated)
- Strategic projects with a renewal component

General renewals cover both reactive renewals when an asset unexpectedly fails, and planned renewals, based on condition assessment. For these, Council sets a budget as part of the LTP process that aims to reduce, maintain or allow to increase the backlog. For this LTP the backlog is expected to decrease, however this will be dependent on the outcome of ongoing condition inspections and assessments, and the additional factors identified in section 5.3.1. This should lead to a gradual improvement of LoS (ie: reduction in flood risk) as pipes that are either blocked or have restricted capacity are replaced and upgrades are made at the same time as the renewal to address LoS deficiencies. Within this budget, projects are prioritized by the operational team based on risk (including criticality) and deliverability.

Resource Consent Renewals are considered “Must Do’s” as they are required by law.

Hydraulic Model Renewals have not been extensively considered as part of this AMP as the models are currently being developed along with the proposed approach to their maintenance and renewal. These will be addressed further in the next AMP (2027-2037).

Strategic projects with a renewal component are prioritised 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 divides projects into four categories:



For more information on the prioritisation process refer to Section 5.4.1.

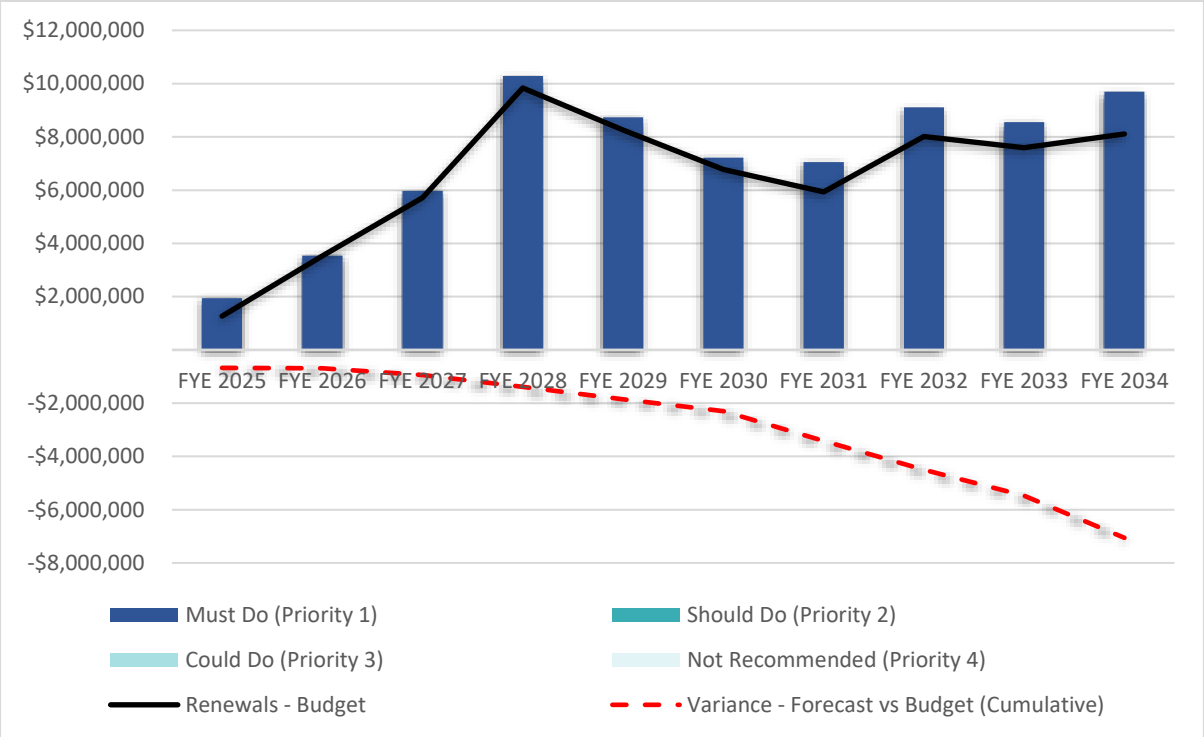
Examples of strategic projects with a renewal component are the various Waitara Stormwater Upgrades, Patterson Rd Culvert replacement, Mangaotuku Diversion Tunnel Optimisation and Inglewood Stormwater Remedials.

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.

The bulk of the requested renewals funding has been provided. The $4M reduction between the forecast and budget is mainly due to the deferral of a number of LoS projects with an inherent nominal renewal component.

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 budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

5.4 Acquisition Plan

Assets can be acquired from the following sources:

- 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 are vested to Council

The drivers for undertaking projects that acquire new assets are normally due to LoS changes, growth, or a combination of each. Renewal works may also be combined with other 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.

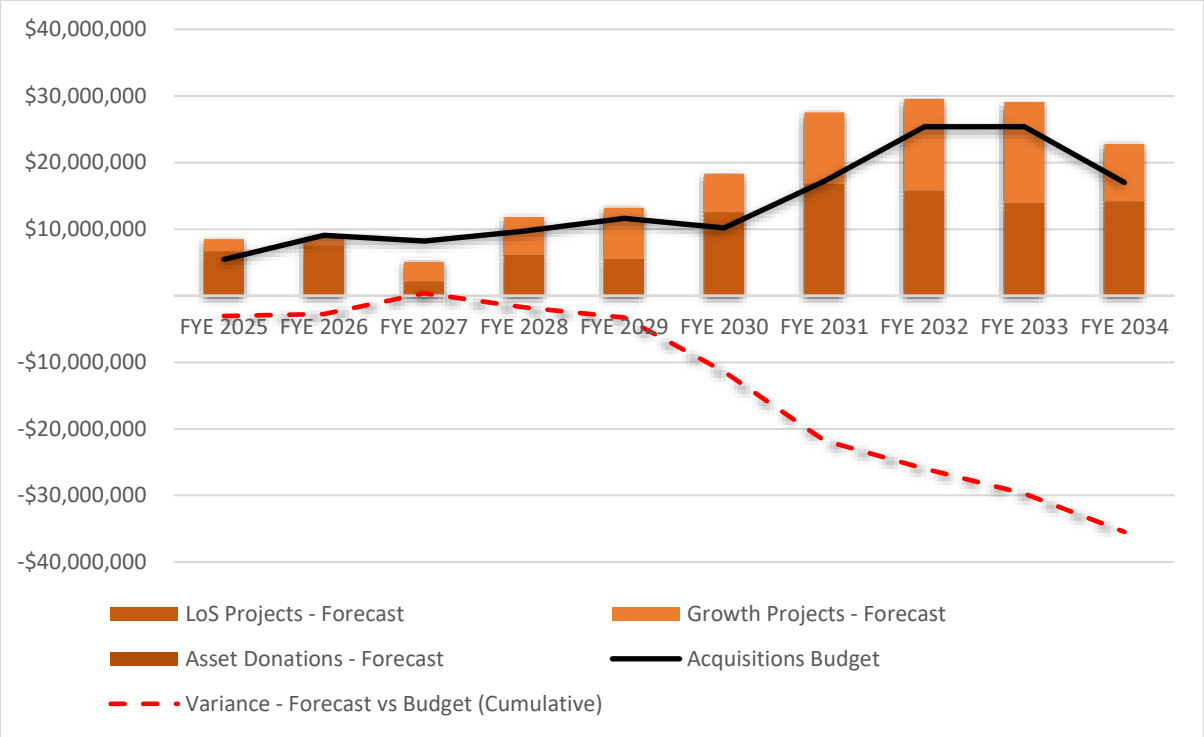
Table 5.4.1: Project prioritisation criteria & weighting

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 5.4.2.1 and are shown relative to the proposed acquisition budget.

Figure 5.4.2.1: Acquisition Summary



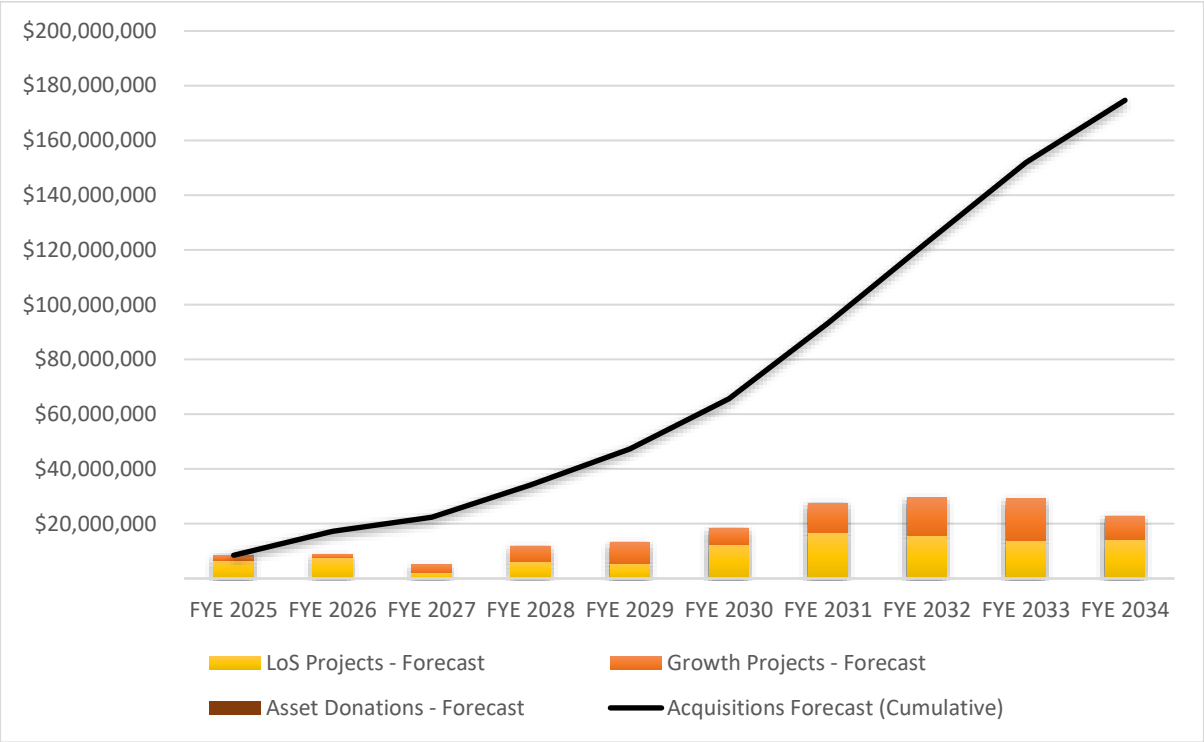
All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT budget submission and exclude the projects that have been requested but were removed or delayed before the submission.

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.

The cumulative value of all acquisition work, including both constructed and contributed assets, are shown in Figure 5.4.2.2.

Figure 5.4.2.2: Cumulative Asset Acquisition



All figure values are inflated. The forecast values shown in the graph consider the projects included in the first ELT 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.

All Capex projects associated with the flood protection service have been fully funded.

Due to affordability and deliverability constraints, the following stormwater projects have been deferred to a period outside of this AMP timeframe:

- Upper Waiari Stormwater Upgrades – Stage 3
- Waitara West Stormwater Upgrade
- Lower Waiari Stormwater Upgrade
- Lepperton Smith Street and Cross Street Drainage Upgrade.
- 38 Egmont Road was in the 2021 LTP as a separate budget line. This project will now be delivered under the Stormwater Reticulation Renewals Budget.

All up this represents a 20% reduction in the forecast acquisitions budget.

Historically stormwater assets are vested (donated) to Council by developers at the completion of their subdivisions. Council then takes over the operation and maintenance of these assets. Historical values of assets vested have been used 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.

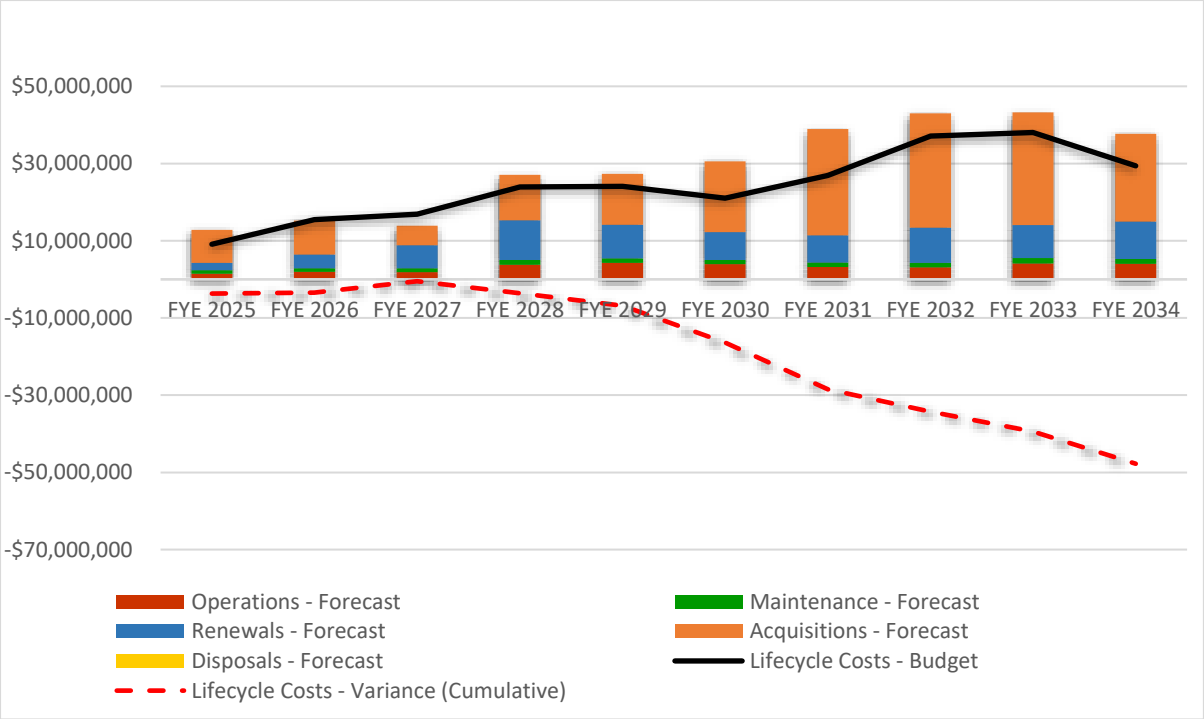
There are no assets identified for disposal within the next ten years. However, there are assets that may be transferred to the Transportation or Parks & Open Spaces services within this AMP timeframe, as indicated in Section 2.1.3.

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 Summary



All values in graph are adjusted for inflation.

After reviewing the lifecycle summary costs for this service, within this AMP timeframe, it is determined that the organisation's budgets are in reasonable shape for the forecasted costs.

However, clear financial gaps exist between Council's available funds versus the level of funding that Council is required to spend to meet the future demands of district residents.

The funding gap is primarily driven by a reduction in LoS projects. Achieving the target level of service for stormwater is likely to cost in the order of $0.5B-$1B, especially when combined with the increasing aspirations and expectations around stormwater treatment and broader societal and ecological impacts. As such these LoS improvements need to be considered on a long-term basis of 50-100+ years. Viewed in this light and when compared to stormwater budgets for either the previous ten years or historically overall (Table 5.6.1), it is evident that Council has significantly increased its focus and investment in the stormwater and flood protection activity as a whole. This is evidenced in the 147% increase in total budget since 2021 and the 620% increase in budget since 2018.

Table 5.6.1 – Historic LTP budgets for NPDC Stormwater & Flood Protection service

Budget Type	2018-2028[1]	2021-2031[1]	2024-2034[2]
Opex	$17M	$19M	$39M
Capex	$18M	$83M	$213M
Total	**$35M**	**$102M**	**$252M**

[1] Not adjusted for inflation [2] Adjusted for inflation

These increases have been across renewals, LoS, growth and opex, although the bulk of the opex increase is associated with budgeting for consequential opex which did not occur prior to the 2024 LTP.

This increased investment directly addresses the concerns raised by Central Government around the lack of investment in the stormwater and flood protection components of the Three Waters activities. It will also directly translate into material progress towards achieving the Stormwater Vision:

To protect and enhance the mauri of wai/lifeforce of water where our streams and waterbodies:
- Are healthy and flow naturally with clean, fresh water
- Are alive with abundant indigenous species
- Support the health of the community


WAIWAKA
STORMWAT
UPGRADE
NPDC
Works period:
Contractor: DOWNER

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 their associated potential failures, the significant (high or extreme) risks being managed, including those risks outside of Council's appetite; while considering 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 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(s)	Impact(s)
Detention Dams	Dam break flood caused by earthquake, overtopping, spillway failure or piping.	Potential injuries or death, flooding of habitable floors, damage to infrastructure and environment
Waitara war memorial pumpstation	Electrical or mechanical failure, seismically induced liquefaction.	Flooding of habitable floors and damage to infrastructure
Diversion tunnels (including inlet and outlet)	Collapse or blockage	Potential injuries or death, Flooding of habitable floors, damage to infrastructure and environment
Critical pipes[1] (including inlet and outlet)	Collapse or blockage	Potential injuries or death, Flooding of habitable floors, damage to infrastructure and environment

[1]These are pipes where blockage or failure is expected to lead to significant habitable floor level flooding due to the lack of a secondary flow path and have been identified through modelling.

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.

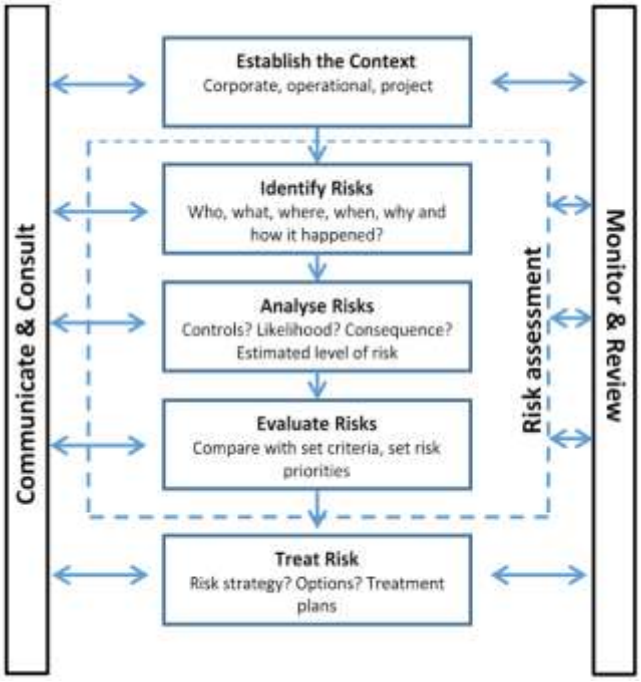
Critical assets will be prioritised when allocating maintenance and renewal funding, undertaking condition assessments and for improvement works.

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 can 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 stormwater and flood protection 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 or extreme risks

Risk Type	Description	Current risk rating	Proposed Risk treatment actions	Post treatment risk rating	Relevant projects
Environment, Financial, Health, safety and wellbeing	A lack of understanding of the performance of the stormwater network, flood risk and stream health across the district leads to financial loss, increased H&S risk and environmental damage	High (possibly extreme)	Preparing CMP for the entire network, including hydraulic models by 2034	Medium	Dam compliance technical assessments Stormwater Network Program Stormwater Network Modelling Project
Environment, Financial, Health, safety and wellbeing, Legislative compliance and control, operations and service delivery	A key infrastructure asset fails because of inadequate preventative maintenance or renewal (including poor use of asset information to inform maintenance decisions) resulting in an inability to maintain levels of service, subsequent community discontent and potentially prosecution.	High	An Enterprise Asset Management system implemented and a maintenance role in the Asset Operations Team were both created in July 2016, and Asset Management Plans have been updated. Additional inspection and condition rating resources were allocated in the Long-Term Plan 2021-31. With 12.5% of stormwater assets by length inspected by Sept 2023(asset discovery work) and 3% per year point forward, the whole network inspection should be completed by 2052. Also the Stormwater Roadmap includes actions to capture unrecorded assets (mostly treatment and storage devices), create O&M manuals, schedule maintenance etc. $4M of renewals funding allocated in Years 1 and 2. This is insufficient to address known backlog issues. Unclear if full 10yrs of funding will address backlog as condition is poorly understood. Uncertainty whether sufficient resource is available to deliver budget.	Medium	Stormwater Reticulation Renewals

Financial, Health, safety and wellbeing	We do not meet our LoS and level of protection for many areas causing flooding, damage to assets, H&S risk and other impacts on the community, such as reduced uptake of active transport due to flooded footpaths.	High	Almost all Operational and Capital actions identified in this AMP will help address this risk. However, resolving it will require intergenerational investment so the change in risk over an AMP cycle is limited.	High	Almost all
Environment, Health, safety and wellbeing	Inflow of stormwater to the wastewater network causes wastewater overflows in Waitara and Inglewood leading to environmental damage and public health risk	High	Pilot project to investigate and address I&I in Inglewood. Wastewater network upgrades in Waitara and Inglewood. Stormwater network upgrades in Waitara and Inglewood	Medium	Waitara Stormwater Upgrades, Tangaroa Restoration, Upper Waiari Stormwater Upgrades, Inglewood Stormwater Remedial
Planning and Strategy, Governance, Environment	Insufficient planning to enable growth leads to reputation damage and poor growth outcomes (e.g. slow, environmental damage, building in flood prone areas, high O&M costs etc).	High	Development of CMP, development guidelines and better structure plans. Note: further resolution of this risk relies on interdisciplinary planning actions outside the scope of this AMP.	Medium	Stormwater Network Programme, Stormwater Network Modelling
Project/quality management	Increased engagement with Tangata whenua leads to delays and higher costs due to a lack of systems, processes and competence.	High	Training staff in IAP2 methodology and Te ao maori Creation of the Stormwater Vision and Roadmap Establish policies, procedures and common expectations	Medium	
Financial, operations and service delivery	Unrecorded assets are not maintained, insured, depreciated or renewed leading to failure and financial loss. Currently unrecorded assets include natural assets and some retaining structures and treatment and storage devices.	High	Add Council owned storage and treatment devices to the asset register, assign ownership and create O&M manuals and maintenance schedules. Roadmap includes an action to look at how to approach natural assets in 2030. No plan for retaining structures and the like at this stage.	Low	
Legislative compliance and control	Council breaches the provisions of the RMA (including consents) resulting in environmental and reputation damage and prosecution due to insufficient training and checks and balances in place.	High	Add Council owned treatment devices to the asset register, assign ownership and create O&M manuals and maintenance schedules. Staff training. Complete dam safety management system.	Medium	
Financial, Governance, Health, safety and well being	The Highlands Park Dam is classified as "dangerous", the Waimea Dam auxiliary spillway is expected to be under capacity and there are a number of other dam safety risks for all 4 dams that require further investigation. Any of these could lead to a dam failure resulting in loss of life and extensive damage to assets.	High	The Dam safety regulations compliance project has been initiated to better understand these risks and the options to resolve.	Medium	Dam safety regulations compliance Dams Compliance technical assessments

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.

Table 6.2.2 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
Environment, Health, Safety and Wellbeing	Adverse - Medium	Inflow of stormwater to the wastewater network causing wastewater overflows in Waitara and Inglewood leading to environmental damage and public health risk	High	Pilot project to investigate and address I&I in Inglewood. Wastewater network upgrades in Waitara and Inglewood. Stormwater network upgrades in Waitara and Inglewood	The Upper Waiari Stormwater Upgrades – Stage 3, Waitara West Stormwater Upgrade and Lower Waiari Stormwater Upgrade have been deferred to outside the LTP period due to affordability and resource constraints.
Financial, Health, safety and wellbeing	Adverse - Medium	Not meeting LoS and level of protection for many areas causing flooding, damage to assets, H&S risk and other impacts to the community, such as reduced uptake of active transport due to flooded footpaths.	High	Almost all Operational and Capital actions identified in this AMP will help address this risk.	Council has increased funding by 600% since 2018 and 140% since 2021 . However, the scale of the deficit means that intergenerational investment will be required and the change in risk over an AMP cycle is minimal.

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 currently restructuring which is impacting capacity to deliver due to unfilled roles and may continue to impact resourcing depending upon 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 have 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 communities and environment and adapting to climate change are key drivers for NPDC. Table 6.3 describes how Council is enabling a resilient community with respect to the Stormwater and Flood Protection Activities.

Due to its nature, failure of the stormwater and/or flood protection network normally has a significant effect on everything within the area flooded but minimal effects outside that area. The exception to this is very large flood events such as on the East Coast in 2023 which is outside the target level of protection. Within the flooded area key impacts are typically damage and loss of service to buildings, roads, water and wastewater networks, and open spaces. These effects are common across events and potential points of failure.

Table 6.3 – Potential Failure points of Stormwater assets

Event	Key Point of Failure
Earthquake	Liquefaction causing loss of function of piped network, diversion tunnels and Waitara War Memorial Pump Station, especially in Waitara. Shaking causing loss of function of piped network, diversion tunnels and Waitara War Memorial Pump Station. Ground movement (including liquefaction) causing change in ground profile and natural flow path. Liquefaction or shaking compromising the function of the dams and stopbanks
Flood	Not meeting LoS and LOP due to undersized infrastructure Blockage of inlets and pipes due to debris in flood waters. Dam failure due to overtopping or spillway erosion. Infrastructure built-in areas with high flood risk Ecosystem damage due to changed hydrological regime
Drought	Ecosystem damage due to changed hydrological regime
Coastal Erosion	Damage to and blockage of outlets
Coastal Flooding	Damage to and blockage of outlets Infrastructure built-in areas with high flood risk.
Tsunami	Damage to and blockage of outlets Infrastructure built-in areas with high flood risk.
Volcanic Eruption	Lahars and ashfall causing change in ground profile and natural flow path. Lahars and ashfall causing damage to and blockage of outlets. Ash entering the stormwater network and causing blockages (potentially very hard to remove)
Climate change	Increased frequency and intensity of floods, coastal erosion, coastal flooding and Tsunamis and their associated effects

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 captured if 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:

- 38 Egmont Rd Stormwater Project
- Tangaroa Restoration – Stage 2, Stage 7 Pennington Park and Stage 8 Marsh Projects
- Upper Waiari Stormwater Upgrades – Stage 3 Project
- Waitara West Stormwater Upgrade
- Lower Waiari Stormwater Upgrade
- Lepperton Smith St and Cross St Drainage Upgrade

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:

- No improvement in social outcomes associated with the stormwater network for the areas identified.

6.4.3 Risk Trade-offs

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

- No alleviation of flood or wastewater inflow or infiltration risk for the areas identified
- No improvement in the environment or alleviation in environmental risk associated with the stormwater network for the areas identified.

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
ten year renewal budget	$65,037,122
ten year renewal forecast	$72,095,718
Asset Renewal Funding Ratio	90.2%

The ARFR calculates that Council expects to have 90.2% 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
ten year proposed budget for existing assets	$102,838,359
ten year forecast costs for existing assets (operations, maintenance & renewals)	$115,106,882
Average annual funding gap	-$1,226,852
Current Asset Funding Indicator	89.3%

The CAFI shows a shortfall, in that only 89.3% of the forecast costs needed to provide the services documented in this AMP are accommodated, over the ten 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 $1,193k per annum and the CAFI shows that 89.9% 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.

The financial gap is due to the deferral of projects that, if completed, would make progress towards achieving the Stormwater Vision and target LoS and protection. As achieving these is expected to be intergenerational and take 50-100 years or more this gap is considered acceptable.

Table 7.2.2: Expenditure forecast summary (inflated)

Activity	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	LTP Total
Operations	$1.49M	$1.95M	$1.88M	$3.76M	$4.31M	$3.90M	$3.18M	$3.08M	$4.14M	$3.99M	$31.68M
Maintenance	$0.88M	$0.91M	$1.02M	$1.22M	$1.11M	$1.14M	$1.17M	$1.22M	$1.39M	$1.27M	$11.33M
Total OPEX	**$2.37M**	**$2.86M**	**$2.89M**	**$4.98M**	**$5.43M**	**$5.05M**	**$4.35M**	**$4.30M**	**$5.53M**	**$5.26M**	**$43.01M**
Level of Service	$6.68M	$7.59M	$2.16M	$6.13M	$5.51M	$12.54M	$16.83M	$15.82M	$13.94M	$14.19M	$101.37M
Growth	$1.80M	$1.22M	$2.89M	$5.68M	$7.68M	$5.79M	$10.73M	$13.74M	$15.19M	$8.59M	$73.31M
Renewals	$1.94M	$3.54M	$5.97M	$10.28M	$8.74M	$7.22M	$7.06M	$9.11M	$8.56M	$9.69M	$72.10M
Total CAPEX	**$10.42M**	**$12.35M**	**$11.02M**	**$22.08M**	**$21.92M**	**$25.55M**	**$34.61M**	**$38.67M**	**$37.69M**	**$32.46M**	**$246.77M**

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 breakdowns currently available.

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

A more detailed breakdown of forecast costs provided in this summary is given in Appendix 2.

7.3 Valuation Forecasts

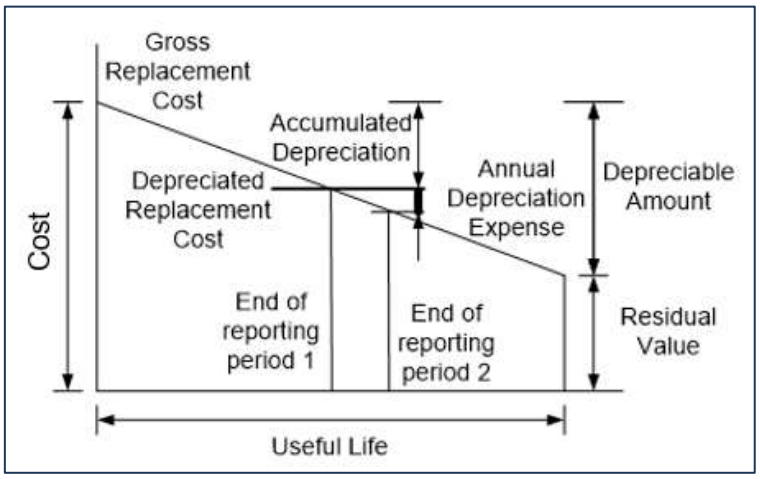
7.3.1Asset valuations

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)	$510.7 M
Depreciated Replacement Cost	$318.9 M
Annual Depreciation	$5.2 M

Figure 7.3.1: Understanding valuation and depreciation values



7.3.2Valuation forecast

Total asset portfolio value is forecast to increase over the ten 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.

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.
- Capex forecasts have been inflated using BERL.
- Opex forecasts have been inflated using 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 the 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 AM Plan 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%)
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	C. Medium	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. There is also less confidence in where this growth will occur which is central to planning for stormwater and flood protection assets.
Acquisition forecast	E. Very low	Cost estimates are mostly based on unclassified estimates with no business case.
Operation forecast	B. High	Data based on previous years actual expenditure
Maintenance forecast	B. High	Data based on previous years actual expenditure

Renewal forecast - Asset values	D. Low	Data based on condition assessment of 12.5% of the network and no business cases or investigations on the cost to renew.
- Asset useful lives	C. Medium	Reflect the useful lives generally used in the industry but there is some evidence of premature failure occurring. Insufficient data available at this stage to get a complete picture. Condition data is also not being used to modify RUL where the is evidence of early failure occurring.
- Condition modelling	D. Low	Based on CCTV of 12.5% of the network. Balance is based on expected useful life
Disposal forecast	E. Very Low	Timing and expectations around asset transfer still to be confirmed.

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 currently has an average rating of 2 (Developing) and is working towards a maturity rating of 3 (Competent).

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. Table 8.2.1 covers the actions identified in the Stormwater Roadmap and Table 8.2.2 covers a number of more general actions, many of which are across multiple activities.

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 – Actions in the Stormwater Roadmap*

Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
Catchment Management Plan	Develop Catchment Management Plans (CMP)	A	Three Waters Planning Lead	Three Waters Planning Engineer	Network Modelling Contract, CMP Contract	Waitara 2024 Bell Block 2026 Inglewood 2027 All 14 by 2035 Refer Roadmap for more details
Structure Plan	Creation of Pre-structure plans	A	Three Waters Planning Lead	Three Waters Planning Engineer	Network Modelling Contract	Puketapu, Junction and

						Patterson Road, 2024 Oropuriri, Carrington 2025, Armstrong Ave, Ōākura South 2026. Refer roadmap for balance.
Data Generation	Overland flow path, watercourse and catchment mapping	A	Three Waters Planning Lead	Stormwater Network Planning Engineer	Contract with Morphum	2024
Data Collection	Create and populate NPDC stormwater device register	A	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning and Asset Data	2024
Guideline	Catchment hydrology method development	A	Three Waters Planning Lead	Three Waters Planning Engineer	Network Modelling Contract	2024
Data Generation	Initial contaminant load model	A	Three Waters Planning Lead	Stormwater Network Planning Engineer	CMP Contract	2025
Data Generation	Initial connected network	A	Three Waters Planning Lead	Stormwater Network Planning Engineer	CMP Contract	2025
Risk Register	Contamination Risk Register	B	Three Waters Planning Lead	Stormwater Network Planning Engineer	CMP contract	2025
Guideline	Stormwater Development Guidelines – Greenfield	A	Three Waters Planning Lead	Three Waters Planning Engineer	Development Guidelines Contract	2025
Guideline	Stormwater Development Guidelines – Densification	A	Three Waters Planning Lead	Three Waters Planning Engineer	Development Guidelines Contract	2026
Operation & Maintenance	Operation and maintenance manuals and maintenance schedules for all NPDC devices	A	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning, Operations and Asset Data	After creation of NPDC stormwater device register
Data collection	Private Stormwater Device register	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning and Asset Data	2028

Planning	Natural Asset Management Proposal	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning, Operations and Asset Data	2028
Planning	Overland Flow Path Protection	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning, Operations and District Planning	2026
Operation & Maintenance	Private device operation and maintenance manuals	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration between 3 Waters Planning, Operations and Asset Data	After creation of NPDC stormwater Private device register

* For more information on the actions refer to the Stormwater Vision and Roadmap

Table 8.2.2: Improvement Plan

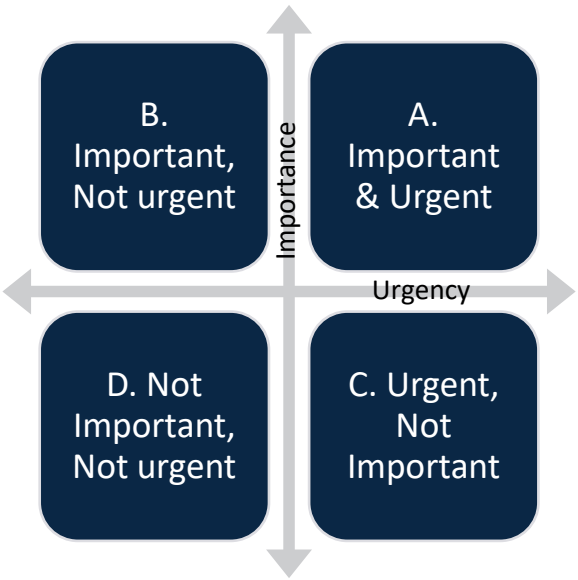
Activity	Task	Priority	Accountable	Responsible	Resources Required	Due date
Engagement	Continue our journey towards partnership with iwi and hapū	A	Project Management Leads	Project Managers	BAU	Ongoing
Engagement	Continue to improve our engagement with the community and key stakeholders.	A	Project Management Leads	Project Managers	BAU	Ongoing
Data collection	Set firm timeframes for the handover of asset data and embed in process. (Ref: Section 5.1.1)	B	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 RUL based on condition data	B	Manager Strategic Planning	Asset & Data Lead	BAU collaboration between 3 waters planning, operations and Asset Data	2026
Vertical Datum	Adjust all reduced levels to NZVD 2016	B	Manager Strategic Planning	Asset & Data Lead	BAU Activity	2024
Critical assets	Adopt an asset criticality framework for 3W that supports the systematic identification of all critical	B	Three Waters Manager	Three Waters Planning Lead	BAU collaboration across asset owners, no	Jun 2025

	assets that is consistent throughout Council. (Ref: Section 6.1).				additional funds necessary	
Dam Safety	Submit Potential Impact Classification for all 4 dams	A	Three Waters Planning Lead	Three Waters Planning Engineer	Dam Technical Assistance Contract	Oct 2024
Dam Safety	Submit dam safety assurance programme	A	Three Waters Planning Lead	Three Waters Planning Engineer	Dam Technical Assistance Contract	Oct 2025
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, 3 Waters Planning and Operation teams	Ongoing as new consents and models are developed
Ownership	Confirm ownership of ponds, soakage devices, swales and wetlands, get valued, determine TUL, and add to asset register	A	Three Waters Planning Lead	Three Waters Planning Engineer	BAU collaboration	2024
Maintenance	Develop Maintenance Schedules for stormwater assets	A	Asset & Data Lead	Asset Works Programme Planner	BAU collaboration	2024
Hydraulic Models	Develop a model maintenance and update process	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU Activity	Ongoing
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 & Renewals Engineer, Three Waters Planning Engineer	BAU collaboration between Asset Data, 3 Waters Planning and Operation teams	Under Investigation
CCTV	Schedule pipes likely to have an ongoing serviceability issue for periodic re-inspection.	B	Manager Three Waters Networks	Stormwater Dam & Renewals Engineer	BAU Activity	Ongoing
Serviceability Issues	Undertake an investigation to confirm if the 29% of the network with serviceability issues is representative based on	A	Manager Three Waters Networks	Stormwater Dam & Renewals Engineer	BAU Activity	2025

	the 2021-2023 data. Based on the findings make recommendations on whether the scale of the programme needs to increase					
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 & Renewals Engineer	BAU Activity	2026
Condition assessments	Undertake detailed condition assessments on poor and very poor assets	B	Manager Three Waters Networks	Stormwater Dam & Renewals Engineer	BAU activity with technical support from Project Max	Ongoing
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 & Renewals Engineer	BAU Activity	Ongoing
Condition assessment	Undertake condition assessment on the pipes that were originally scored using pass/fail criteria	B	Manager Three Waters Networks	Stormwater Dam & Renewals Engineer	BAU Activity	Ongoing
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
Resource Consents	Explore the suitability of a comprehensive discharge consent	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU Activity	Ongoing
Resource Consent	Input into the TRC Natural Resources Plan process to ensure that it adequately covers the approach to urban stormwater.	B	Three Waters Planning Lead	Three Waters Planning Engineer	BAU Activity	Ongoing
Budgets	Improve forecast definition in the AMP including providing separate	D	Manager Three Waters Networks	Stormwater Dam &	BAU Activity	Ongoing

	operations, preventative and reactive maintenance forecasts			Renewals Engineer		
Environmental Sustainability engagement and inclusion	Ensure that Environmental Sustainability Policy settings are incorporated into all actions and commitments indicated within LTP and AMP	C	Three Waters Planning Lead	PMO Leads PMO Project Managers	BAU Activity	Ongoing

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, act 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.


S2(E)

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Glossary

Term/ Phrase/ Acronym	Definition
Acquisition	Those activities involved in the creation/ purchase/ donation or otherwise gain of new or upgraded assets.
AC	Asbestos Cement
AM	Asset Management
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
ARFR	Asset Renewal Funding Ratio
BAU	Business as Usual
CAFI	Current Asset Funding Indicator
CAPEX	Capital Expenditure
CBD	Central Business District
CCO	Council Controlled Organisation

Term/ Phrase/ Acronym	Definition
CCTV	Closed Circuit Television
CDEM	Civil Defence and Emergency Management
Council	Refers to New Plymouth District Council specifically
CMP	Catchment Management Plan
Customer	Customer in this document is used to describe anyone who uses the products or services provided by Council assets or who has a vested interest 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.
ECM	Enterprise Content Management - manages documentation and records.
ELT	Executive Leadership Team
GCRC	Gross Capital Replacement Cost
GIS	Geographic Information System
H&S	Health and Safety
I&I	Inflow and Infiltration
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

Term/ Phrase/ Acronym	Definition
LIM	Land Information Memorandum
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
LoP	The rainfall event that can be conveyed within the secondary flowpath
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
NPS-FM	National Policy Statement for Freshwater Management (2020)
NZD	New Zealand Dollar
O&M	Operations and Maintenance
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.
OPEX	Operational Expenditure
P3M	Portfolio, Programme and Project Management Framework
Performance measure	The means by which Council measures achievement of its level of service statements.
PIC	Potential Impact Classification
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
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.

Term/ Phrase/ Acronym	Definition
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 fixing or reducing a risk that Council is currently exposed to.
RMA	Resource Management Act
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.
SCADA	Supervisory Control and Data Acquisition system
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)
WSE	Water Services Entity

Appendices

Appendix 1 – Legislation & Regulations

The following is a list of all relevant legislation and regulations relating to the delivery of the stormwater and flood protection service.

Legislation/ regulation	Relevance to service/ assets
LGA 2002 and Amendments	Sets the statutory requirements for local governments and includes the mandatory preparation and adoption of a 30yr infrastructure strategy that underpins each LTP.
Health Act 1956 and Amendments	This aims to protect public health by improving the quality of drinking-water provided to communities. It also establishes a national consistent approach to community water fluoridation.
Taumata Arowai – the water Services Regulator Act 2020	Establishes and sets powers and responsibilities of Taumata Arowai as the Water Services Regulator
The Water Services Entities Act 2022 and amendments	Establishes 10 water service entities that will be responsible for the delivery of the Three Waters activity. Note the responsibility for Flood Protection assets is still to be confirmed.
The Water Services Legislation Act 2023	Establishes the detailed powers functions and duties of the new water services entities and contains the mechanisms for transfer of assets and liabilities.
Resource Management Act 1991 and amendments	Primary legislation dealing with the management of natural and physical resources. It provides a national framework to manage land, air, water and soil resources, the coast, subdivision and the control of pollution, contaminants and hazardous substances
Health and Safety at Work Act 2015, Amendments and associated regulations.	Promotes the prevention of harm to all people at work, and others in, or in the vicinity of, places of work
Building Act 2004 and Amendments	In conjunction with the District Plan and Infrastructure standards controls how buildings interact with the stormwater network most notability around management of runoff from impermeable surfaces and prevention of cross connections.

Climate Change Response Act 2002 and amendments	Requires the government to develop and implement policies for climate change adaption and mitigation which is the basis for the National Climate Change Risk Assessment
Public Works Act 1981 and Amendments	This Act acknowledges that works often cannot be carried out without affecting private landowners. It provides the framework for government entities to acquire land, including compulsory acquisition, for public works so that public works proposals are not unreasonably delayed
NPDC Water, Wastewater and Stormwater Services Bylaw 2008	
NPDC Operative 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. Currently being replaced by the Proposed District Plan
Regional Freshwater Plan for Taranaki	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.
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.
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, capital and maintenance expenditure for the ten year term of this AMP. Future iterations of this plan will improve the breakdown classification.

Table A2.1: 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	$1.17M	$1.65M	$1.58M	$2.80M	$2.75M	$2.59M	$2.20M	$2.19M	$3.30M	$2.65M	$22.88M
Direct Costs	$1.21M	$1.25M	$1.36M	$1.57M	$1.48M	$1.51M	$1.54M	$1.59M	$1.76M	$1.64M	$14.92M
Internal Charges	$1.61M	$1.80M	$1.76M	$1.85M	$1.89M	$1.93M	$1.93M	$1.96M	$1.98M	$2.02M	$18.71M
Total Operating Expenditure	**$3.99M**	**$4.69M**	**$4.70M**	**$6.22M**	**$6.12M**	**$6.04M**	**$5.67M**	**$5.74M**	**$7.04M**	**$6.31M**	**$56.51M**
Level of Service	$3.30M	$7.82M	$6.50M	$7.55M	$8.15M	$7.87M	$14.29M	$18.75M	$12.95M	$9.96M	$97.13M
Growth	$2.15M	$1.25M	$1.69M	$2.17M	$3.49M	$2.30M	$2.93M	$6.60M	$12.44M	$7.04M	$42.05M
Renewals	$1.27M	$3.53M	$5.71M	$9.84M	$8.26M	$6.78M	$5.94M	$8.02M	$7.59M	$8.11M	$65.04M
Total Capital Expenditure	**$6.71M**	**$12.60M**	**$13.91M**	**$19.55M**	**$19.90M**	**$16.95M**	**$23.15M**	**$33.37M**	**$32.97M**	**$25.12M**	**$204.23M**

Table A2.2: 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	$0.68M	$0.67M	$0.73M	$0.84M	$0.79M	$0.81M	$0.83M	$0.85M	$0.94M	$0.88M	$8.02M
Reactive Maintenance	$0.52M	$0.58M	$0.63M	$0.73M	$0.69M	$0.70M	$0.72M	$0.74M	$0.82M	$0.76M	$6.90M
Emergency Maintenance											
Total Maintenance Expenditure	**$1.21M**	**$1.25M**	**$1.36M**	**$1.57M**	**$1.48M**	**$1.51M**	**$1.54M**	**$1.59M**	**$1.76M**	**$1.64M**	**$14.92M**

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 LoS 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

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