

# Wastewater Asset Management PLAN 2024-34

## About this Plan

This Plan aims to describe how wastewater assets in the South Waikato District will be managed to provide acceptable levels of service in the most cost-effective way.  
This Plan will contribute to the achievement of the Long Term Plan.

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# Executive Summary

## Introduction

The purpose of this asset management plan is to describe how wastewater assets in the South Waikato District will be managed so that acceptable levels of service are provided in the most cost-effective manner and contribute to the achievement of the 2024-34 Long Term Plan (LTP). This plan details information about:

- The strategic outcomes that Council is seeking to achieve related to wastewater infrastructure.
- The level of service to be provided.
- The infrastructure that needs to be maintained, renewed, and developed to meet the demands placed on it over the next ten years.
- How these services are to be provided.
- What funding is required to meet these demands.
- The associated risks.

The AMP covers the period 1 July 2024 to 30 June 2034 with a focus on work programs over the next ten years. It informs the Council's 2024-34 LTP and contributes to meeting Council's identified strategic outcomes and goals.

## What we do

The South Waikato District Council (SWDC) is in the business of owning, operating, and maintaining wastewater collection networks and disposal schemes in Arapuni, Tīrau, Putāruru, and Tokoroa communities.

We collect wastewater from homes and businesses via sewage pipes and send it to the treatment plants either by gravity or pumping.

We treat wastewater to a high quality, then discharge it to water or land.

The services that are provided to the community through the assets in this plan are as follows:

- Wastewater collection system provided throughout the urban environment in the towns of Tokoroa, Putāruru, Tīrau and Arapuni.
- Gravity and pumped delivery of the wastewater to the individual wastewater treatment plants.
- Effluent treatment at the Tokoroa, Putāruru, Tīrau and Arapuni Wastewater Treatment Plants prior to discharge of the treated effluent to the receiving environments.

## Why we do it

The provision of wastewater collection networks and treatment plants is vital to the needs and aspirations of all who live in the District. They provide the means of safe, reliable, and efficient disposal of wastewater for resident's homes, schools, and businesses 24 hours a day, 365 days a year in a manner that is safe for both human health and the environment.

## Our Goals and Outcomes

The Wastewater activity contributes to the Council's Vision, Outcomes and Goals linking to the Levels of service and driving performance objectives. Asset management planning is undertaken within both an internal and external strategic environment. The assumptions around which this AMP has been framed are outlined further into this document and include:

- The assets will remain in Council ownership, subject to the future impacts of the Government-led water reform and legislations arising from the Water Services Act 2021.
- Replacement costs are realistic.
- Assumed asset lives are reasonable.



- Growth in Demand will be in line with current forecasts – potential changes in demand due to growth have been factored into our capital works program.

Council's strategy presents what we are going to do for the next ten years to make our district a better place to live and work. At the core of our strategy is our vision, our outcomes, and our goals. The link between the three is explained in the figure below:



The external strategic environment is also of relevance in that the performance of the wastewater network is governed by legislative obligations and dependant on the management of the receiving waters which fall under the control of the Waikato Regional Council.

### Three Waters Reforms and Water Services Act 2021

The NZ Government has repealed the Three Waters Reform. Further details will be available once the Government embeds this in the legislation. In the meantime, Council will cease all efforts in relation to the Three Waters Reform where practical.

### Contribution to Councils Strategy

Council's Wastewater services are provided for the benefit of the community to ensure that the Vision of 'A thriving community and robust economy that outpaces the rest of NZ', as expressed in the Long Term Plan, is achieved. The Wastewater Activity contributes towards the implementation of Council's Vision, through achieving the Outcomes and Goals.

Outcomes	Goals
<p><b>Thriving communities:</b></p> <p>Our diverse people of South Waikato are healthy and well, with ample opportunities to support their quality of life.</p>	<ul style="list-style-type: none"> <li>• More people in the South Waikato own their own home than anywhere else in the country.</li> <li>• More people participate in community activities and events in the South Waikato than anywhere else in the country.</li> <li>• Our economy grows faster than anywhere else in the country.</li> <li>• All our young people are in either education or employment.</li> </ul>
<p><b>A sustainable environment:</b></p> <p>The District is a national leader in benefiting economically from a circular economy.</p>	<ul style="list-style-type: none"> <li>• No waste or rubbish leaves the district.</li> <li>• Our economy grows faster than anywhere else in the country.</li> </ul>
<p><b>A robust economy:</b></p> <p>Leveraging our location and rich soils, we rebuilt a strong foundation for our grandchildren.</p>	<ul style="list-style-type: none"> <li>• More people in the South Waikato own their own home than ever before.</li> <li>• Our economy grows faster than anywhere else in the country.</li> <li>• All our young people are in either education or employment.</li> </ul>

### AMP Response to the Strategic Context

The approach taken in this AMP is to ensure that safe and reliable collection, treatment, and disposal of wastewater to protect community health and the environment. Specific issues focussed on for the 2024-34 period and addressed in the plan are:

- Reductions in stormwater infiltration and inflow to the wastewater network to provide better control of peak wet weather wastewater flows.
- Staged upgrades of the existing wastewater network to meet projected growth.
- Completion of necessary upgrades to the wastewater treatment plants to meet enhanced resource consent requirements.

The external strategic environment is also of relevance in that performance of the wastewater network is governed by legislative obligations and dependant on management of the receiving water courses which fall under the control of the Waikato Regional Council. The current Three Waters Reform process and new Water Services Act will also impose additional requirements on our wastewater services.

The benefits of addressing these problems and the consequences of not addressing them are outlined in this AMP.

### The key achievements for Wastewater activity from the previous AMP are:

- Awarding of long term (35 year) resource consents for Tokoroa, Tīrau, Arapuni and Putāruru Wastewater Treatment Plants.
- Completion of the new Anaerobic Digester and associated equipment at the Tokoroa Wastewater Treatment Plant.
- Replacement of the old inlet screen with a new high efficiency screen at Tokoroa.
- Completion of network model of the Tokoroa, Putāruru and Tīrau wastewater reticulation.

### Key Focus Areas 202434:

- Undertaking a CCTV inspection of sewer pipes to ascertain the condition of pipes to assist in preparation of a long-term renewal programme.

- Construction of growth-related upgrades to the network in Putāruru previously identified from modelling work undertaken in 2018-2020.
- Construction of new wetlands at Tokoroa and Putāruru.
- Construction of network upgrades needed to meet growth in Tokoroa and Tīrau.
- Construction of new plant and process at the Tokoroa, Putāruru and Tīrau WWTP's to meet the requirements of the new consents.

## The Assets Covered in this AMP

Council owns and operates four reticulated sewage schemes in the urban communities of Tokoroa, Putāruru, Tīrau, and Arapuni.

The key assets that contribute to providing these services are summarised in the below table.

Asset Component	Quantity
Pipelines	171 km
Manholes	3,241
Pump Stations	17
Treatment Plants	4

The total replacement value of the wastewater assets over period of 2024 to 2084 is **\$118.7 M**.

## Levels of Service for Wastewater

Customers' expectations of the service have been identified and subsequently defined in terms of Levels of Service and Performance Indicators that can be monitored, measured, and reported. Council has adopted a series of measures which are intended to indicate how well the wastewater infrastructure contributes to community outcomes and levels of service. Both Customer Service Levels and Technical Standards are used.

This plan supports Council providing:

- Wastewater collection and treatment systems which protect public health and provide residential, commercial and industrial properties in the District with safe and reliable disposal and treatment of wastewater.
- Wastewater infrastructure that meets the expected growth requirements.
- Wastewater services which comply with regulatory and consenting requirements.
- Management of wastewater activity in a financially sustainable way.

The key LOS relate to treated effluent quality, system performance, continuity of service and responding to faults. LOS measures for the above services are contained within the Councils ten-year plan and include a number of regulatory and DIA mandatory performance measures. Key performance indicators include environmental compliance for treatment performance and ensuring wastewater is contained in the network.

The AMP also sets out both customer and technical levels of service in the areas of network performance, wastewater overflows, odour events as well as responsiveness, consent compliance, fault and complaint occurrence and planning.

## Planning for the future

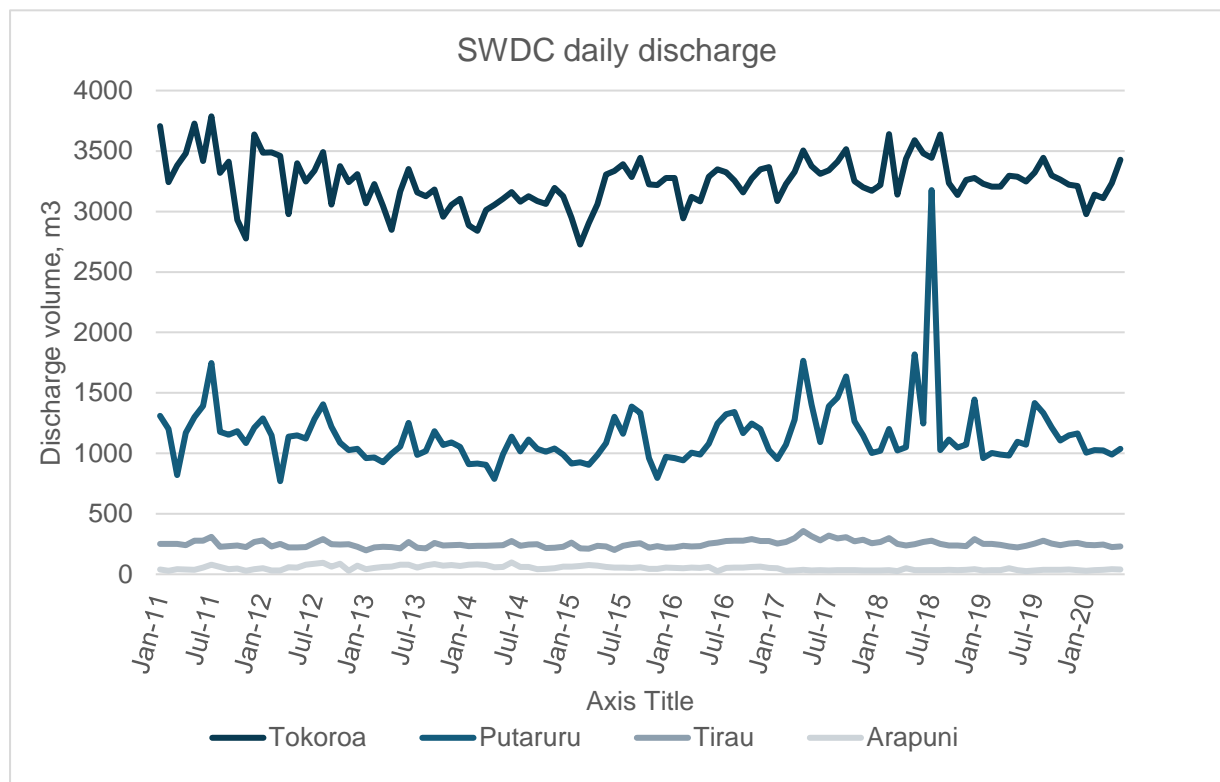
Council expects that the demand from existing sources of wastewater will generally not exceed capacity within the ten-year planning horizon of this AMP.

The legislative requirements that apply to wastewater management include:

- Local Government Act 2002 (and amendments)
- Health Act 1956
- Health and Safety at Work Act 2015
- Resource Management Act 1991 (and amendments)
- Civil Defence Emergency Management Act 2002 (and amendments)
- Water Services Act 2021.

## Demand

Tokoroa, Putāruru Arapuni and Tīrau wastewater discharge volumes have been steady over the past five years, in line with limited township population change. Refer Figure below.



The following key issues have been identified for the ten-year planning period:

- Reducing inflow and infiltration to the network.
- Management of trade waste.
- Renewal of resource consents and anticipated higher standards.
- Residential and Industrial growth in the District.
- Climate Change.

The District has an estimated population of 25,400 in 2020 and 26,000 in 2023, which is just over a 2.4% increase. Most of the growth is likely within the Tīrau and Putāruru wards.

The impacts of proposed developments in Putāruru have been modelled to measure the impacts on sewerage treatment both on site, and at Councils treatment facilities. From this modelling several upgrades are proposed to both the reticulation and treatment plant to enable the wastewater infrastructure to cope with increased flows. Increased sewage flows can be expected from new development during the planning period, and infill development in Tīrau, Putāruru and Tokoroa. The demand for services is to be met through a combination of managing existing assets, upgrading existing assets and through providing new assets.

## Lifecycle Management

The Council owns and manages four separate wastewater systems in the urban areas, using its professional engineering staff and external resources where required.

The wastewater assets include:

- Reticulation pipe work.
- Manholes and inspection points for access into the wastewater network.
- Wastewater pump stations.
- Electrical controls to monitor the pumping systems.
- Rising mains from pump stations.
- Wastewater Treatment Plants.
- Discharge structures.

	Tokoroa	Putāruru	Tīrau	Arapuni	Total
<b>Reticulation, m</b>	118,898	37,679	9,919	4,474	170,971
<b>Manholes (reticulation network)</b>	2,268	706	180	87	3,241
<b>Inspection points</b>	0	0	4	0	4
<b>Pump stations</b>	8	6	3	0	17
<b>Electrical controls</b>	17	15	9	2	43
<b>Rising mains, m</b>	4,147	2,005	1,002	441	7,595
<b>Treatment plants</b>	1	1	1	1	4
<b>Discharge (Outlet) structures</b>	1	1	1	1	4

Details of these assets are recorded in our management software system (AssetFinda). This enables the individual components to be tracked including size, age, depreciated and replacement value, and reports can be produced to predict theoretical replacement requirements.

### Asset Condition and Performance

The overall performance of the wastewater network is considered to be Good, although there are some Poor and Very Poor condition assets.

### Wastewater Collection Network

The overall performance of the wastewater collection network is considered to be Good based on the overall relatively few overflows and pipe blockages that occur.

However, there is significant stormwater inflow and infiltration in older parts of the network contributing to high peak wet weather flows. There are also a number of pipe blockages occurring in service laterals and some smaller diameter sewers due to the impact of root intrusion.



## Wastewater Pump Stations

The majority of the pump station assets are in Good to Excellent condition. Two of the larger pump stations Baird Road and Tasman Drive have been identified as requiring minor seismic upgrades during the term of this AMP. Some smaller pump stations are fitted with obsolete electrical and control equipment and are in need to upgrading, which is scheduled early in the next ten-year period.

## Wastewater Treatment Plants

The Councils Wastewater Treatment Plants (WWTP) have in general been well maintained to a high standard with an ongoing maintenance program and timely replacement of mechanical and electrical equipment, as necessary. Major upgrades to the inlet screens, grit traps, and pumps/blowers are either in progress or programmed for the next ten-year period. In addition, with the funding made available from the Three Waters Reforms program the Council has been able to bring forward proposed denitrification treatment at the Tokoroa Treatment Plant and achieve greater discharge quality ten years sooner than previously forecast.

The wastewater discharge consents have recently been renewed which will require additional upgrades to all of the WWTPs. The Putāruru Wastewater Treatment Plant is the first plant scheduled for upgrades which are due in 2026 and are intended to improve nitrogen removal prior to discharge.

## Maintenance and Operations

Wastewater plants are operated, and assets managed on a day-to-day level by the Wastewater Services Team part of the Service Delivery Group. This includes provision of wastewater quality sampling, with laboratory testing under subcontract.

The general requirements of the expected service levels are:

- Provide trained staff, plant and material resources to effect prompt and efficient routine maintenance of Council's sewerage systems.
- Ensure wastewater discharges meet their relevant resource consent requirements.
- Receive and treat sewage at each of the sewage treatment plants and monitor effluent water quality as specified.
- Inspect, schedule and program required maintenance and inspections.
- Execute the works to specification requirements in a safe, efficient, and timely manner that will enhance the Council's assets while minimising any inconvenience to asset users.

## Capital Renewals

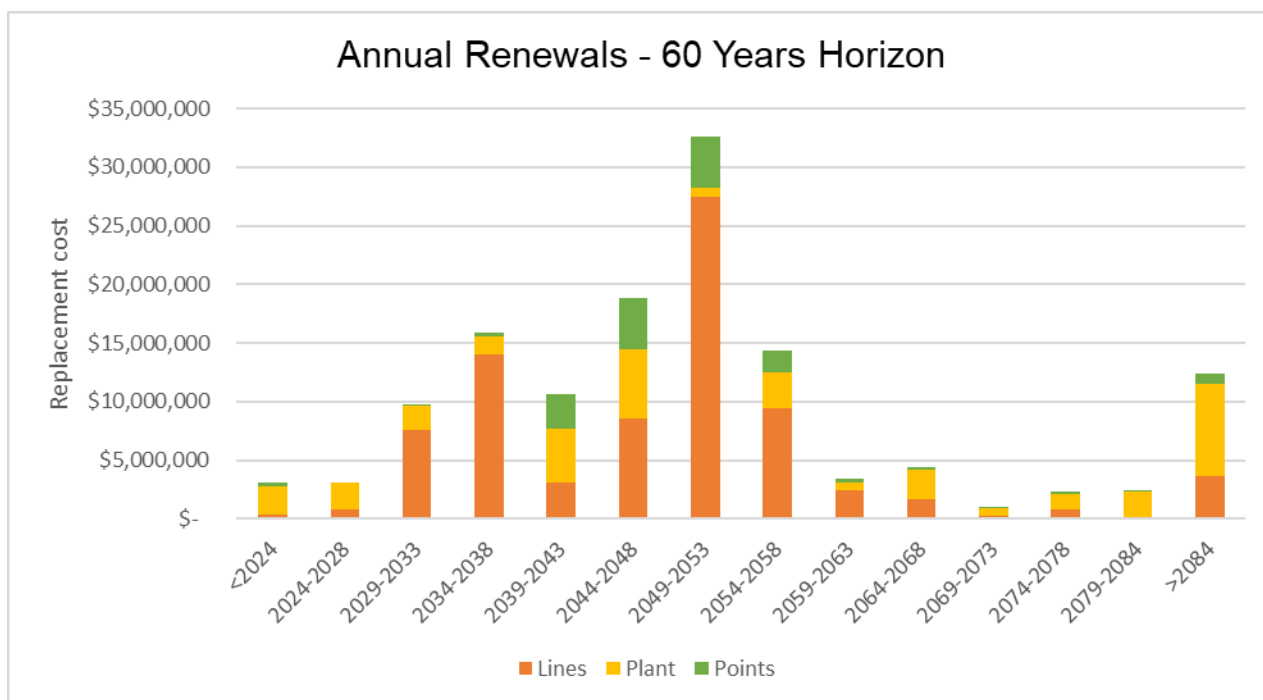
Network assets are not expected to require significant renewal over the early part of this planning period. Current forecasts based on age alone indicate a significant spike in renewals in the latter half of this AMP. Additional inspections and analysis are required to assist in smoothing out this spike by either deferring or bringing forward some or all of these forecast renewals. Pumping and treatment plant assets have shorter lives than the pipe reticulation system, and more frequent renewals are required.

Replacement costs for the treatment plants and reticulation over next ten years are to be in the order of **\$20 M** due to the need to upgrade the Putāruru and Tokoroa Treatment Plants to meet discharge consent conditions.

The graph below illustrates the post-WW2 infrastructure expansion phase, which is clearly visible in the centre of the chart.

Infrastructure assets all have a design life, during which they are fit for the purpose of providing the required service reliably and effectively. When they are no longer capable of providing that service, a decision is required regarding continued operation of the service.

The figure following shows the projected future asset renewals required over the next 60 years.



## Managing Risk

Sustainable and reliable delivery of the Wastewater service requires careful consideration of the various types of risk associated with the service.

The major risks addressed in this Asset Management Plan include:

### Business Risk

The Corporate Risk Management Policy addresses community outcomes, vision statement and strategic themes. Full details can be found in the South Waikato Risk Register and Risk Profile, which ranks the risks and includes control measures, where they exist.

### Asset Risk

An Asset Criticality and Risk Assessment report in 2007 addressed the consequences of infrastructure failure and identified the critical assets that required further investigation to ensure that they would continue to perform reliably delivering the agreed levels of service. Subsequent to that review our understanding of criticality and risk has evolved further and additional work is underway to further refine our critical assets.

Critical assets are those assets which have the highest consequences in terms of disruption in services and financial, environmental, and social cost should they fail. For the wastewater activity the assets in this category are:

- Large diameter wastewater pipes
- Wastewater treatment plants
- Assets with critical customers
- Wastewater pipes adjacent to sensitive environments.

Mitigation measures to address these risks are covered in this plan. Resilient infrastructure is able to deal with significant disruption and changing circumstances as a result of the occurrence of natural hazards such as earthquakes and volcanic events.

## Business Continuity Risk

Council has developed Business Continuity Plans that address the continuation of service delivery in the event of a disaster or failure of critical infrastructure. This is also linked to the regional lifelines program involving all territorial authorities in the greater Waikato and other utility providers.

## Expenditure components

The graphs below detail the actual funding program over the 2024-2034 planning period. A condition assessment will be carried out on the water supply AC pipes in conjunction with wastewater AC pipes during the term of this AMP to ensure SWDC have allowed correct estimations of remaining lives for funding purposes and replacement timing.

Expenditure components are as follows:

**Operating Costs:** It covers costs of operating and maintaining the wastewater treatment plants and reticulation, including fault repairs.

**Support Costs:** This item covers the share of Council support costs incl. overheads apportioned to Wastewater.

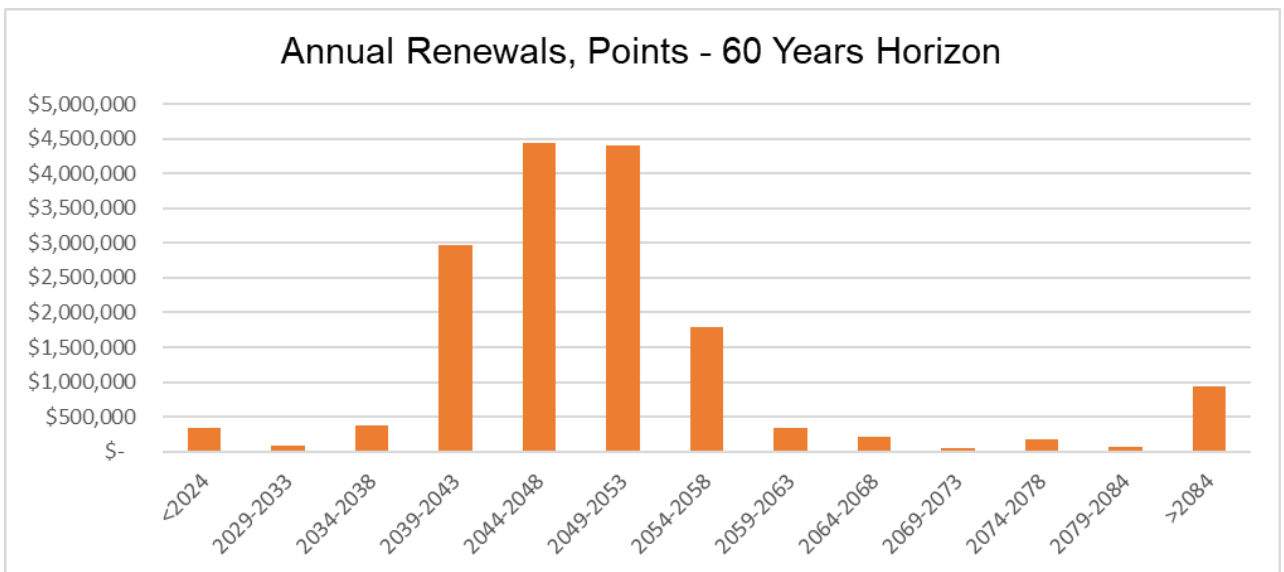
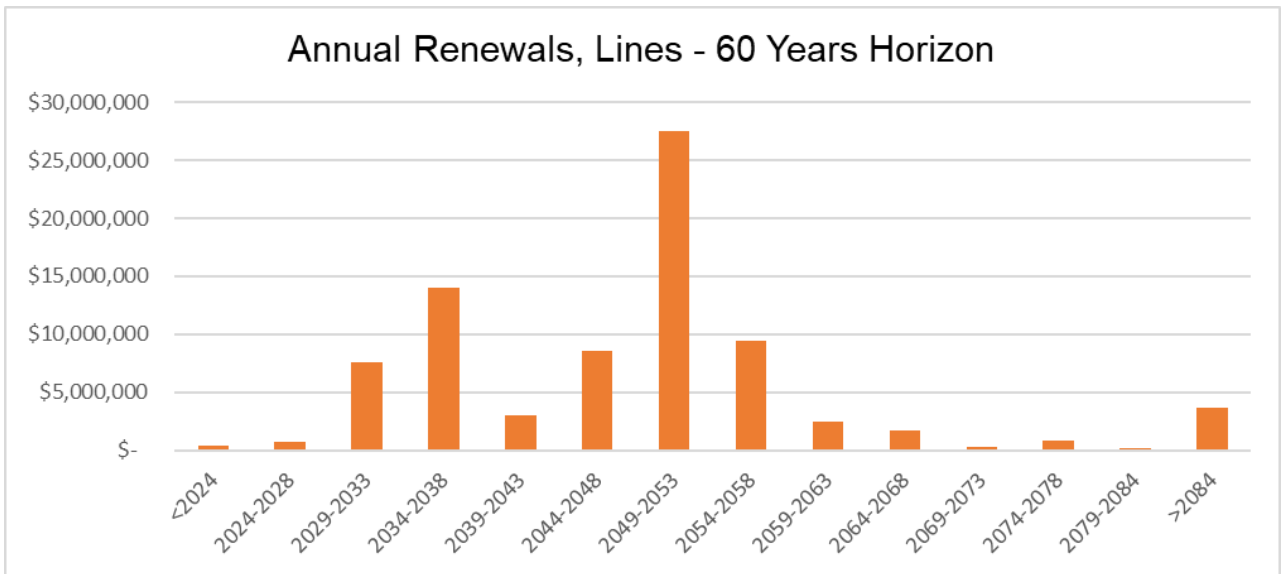
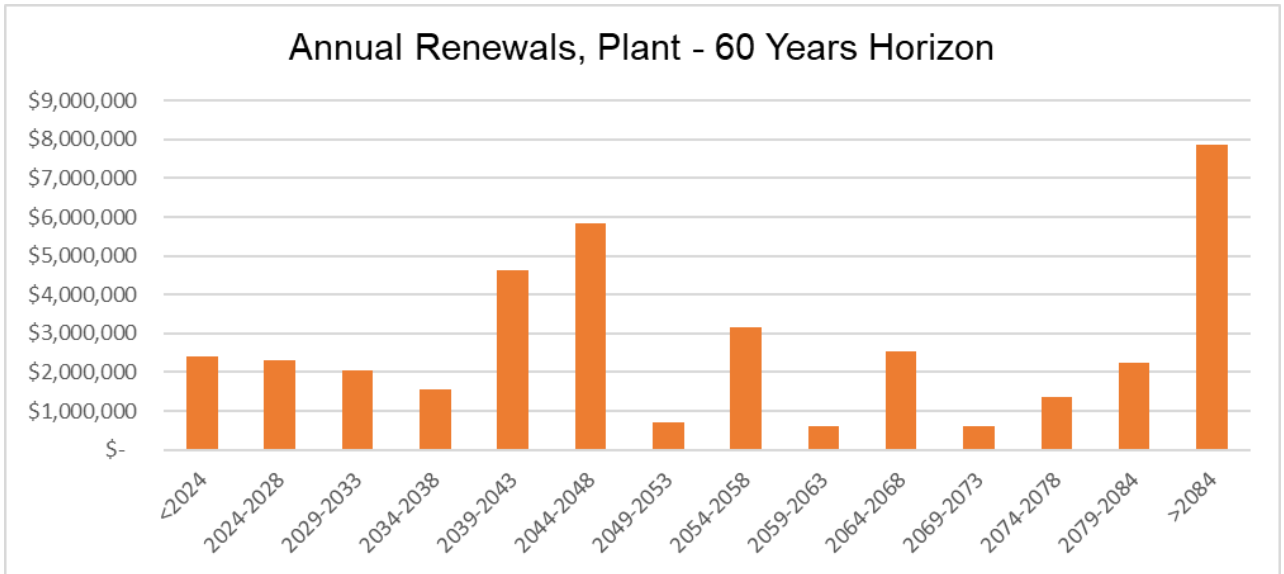
**Depreciation:** Both renewal of existing assets and investment in new assets drive a gradual increase in depreciation charge over the plan period. The contribution of the older pipe assets to depreciation charges decreases as their value diminishes toward the end of their lives. Depreciation is based on the useful lives of assets. Useful lives vary depending on many factors:

- Mechanical and electrical plant depreciate faster than reticulation pipes.
- Different pipe materials have different life expectancies.
- Different historical installation standards and service conditions also affect lives.

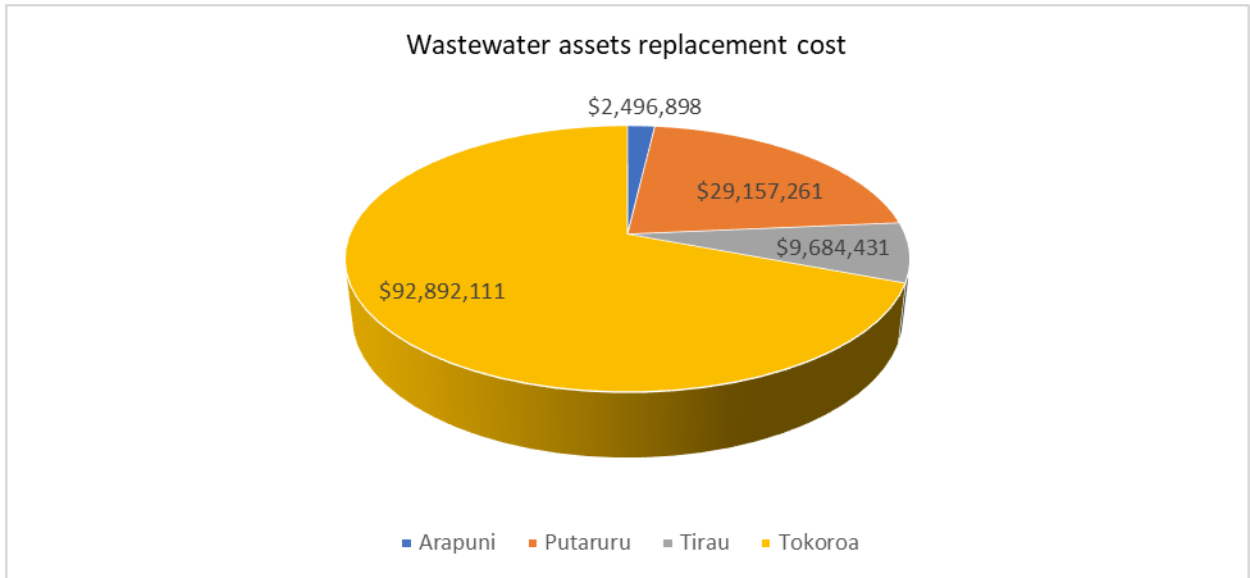
**Interest and Principal:** New works are generally funded by borrowing. Interest payments, and repayment of principal are an operating expense.

**New Works:** Capital investment is required to service additional consumers, to manage risk or for a change in level of service to meet residents' expectations or changes in legislative/consent requirements.

**Renewals:** This capital cost is for replacing reticulation system component and treatment plant equipment to maintain the agreed environmental (plant discharge quality) levels of service. Renewal or restoration of assets is required to ensure that the service potential of the assets is maintained and that the level of service can continue to be delivered. It is funded by drawing from the depreciation reserve.

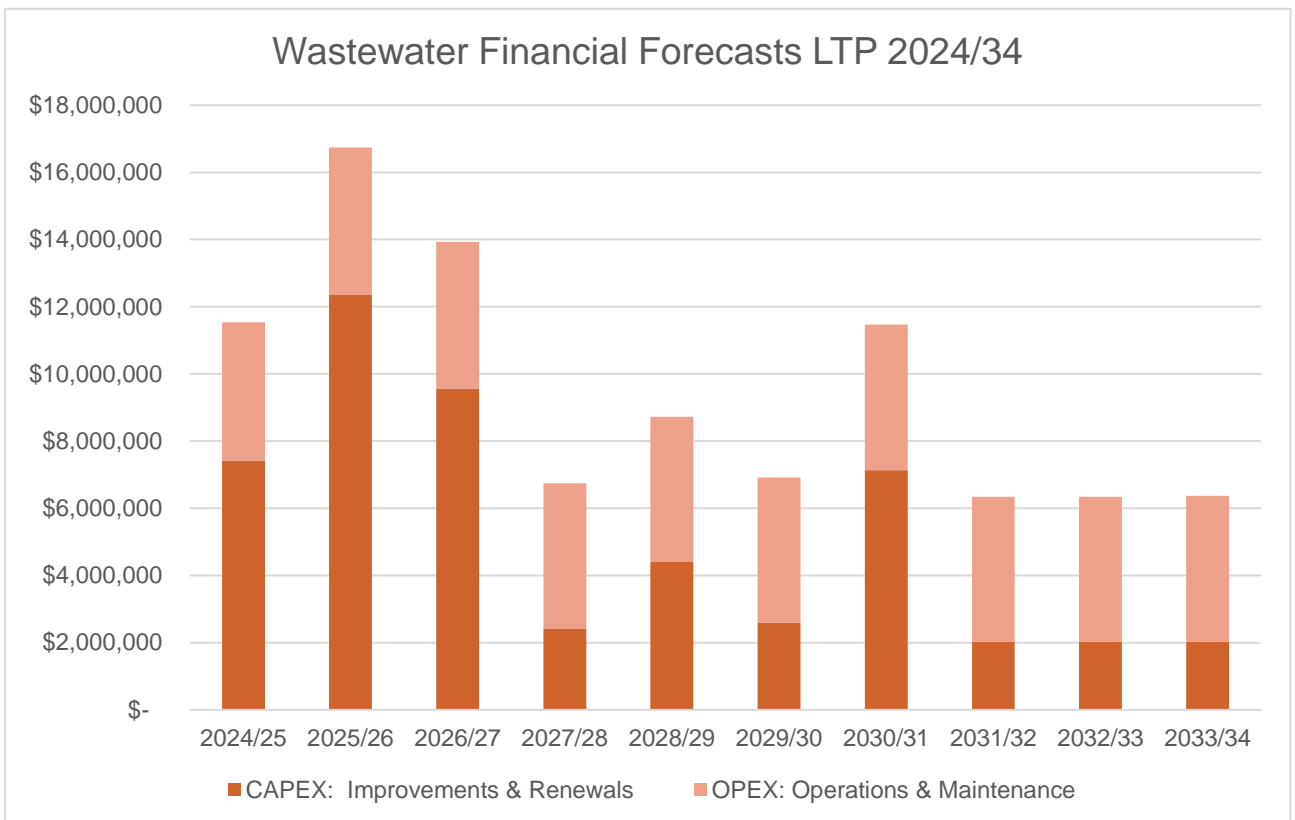


The main cost-increase over this planning period is the creation of new wastewater treatment assets and the increase operational costs resulting from the increase in treatment levels required.



## Financial Forecasts LTP 2024

The table below summarises financial projections for the planning period. These are expressed in 2024 dollars and have not been indexed for inflation.





## **Improvement Plan**

Council's asset management target is to achieve the "intermediate" level, which is appropriate for an organisation of its size. Following guidance from the Office of the Auditor General and the NAMS manual, a number of Improvement Plans have been developed and implemented historically, while others are ongoing.

Further improvement proposals are based on a review of the current status of compliance with the requirements of "intermediate" level.

## **Conclusion**

This AMP sets out programs for operating, maintaining, renewal and development of the Wastewater Activity over the next ten years that will ensure that the required level of service is delivered to the community, the service potential of the assets is maintained for future generations, and that the growth of the District is provided for.