

Water Supply Asset Management PLAN 2024-34

About this Plan

This Plan aims to describe how water supply 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.

Contents

Executive Summary	3
What we do.....	3
Why we do it	3
The Assets covered in this AMP	7
Levels of Service for Water Supply Customers.....	7
Planning for Future Growth and Demand.....	8
Lifecycle Management.....	8
Managing Risk.....	12
Financial Forecasts LTP 2024.....	13
Processes and Practices	14
Improvement Plan	14
Conclusion	14

Executive Summary

The purpose of this asset management plan is to describe how Water Supply 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 Water Supply 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 particular focus on work programs over the next ten years. It informs the Councils 2024-34 LTP and contributes to meeting Councils identified strategic outcomes.

What we do

The South Waikato District Council (SWDC) is in the business of owning, operating and maintaining water treatment plants and water distribution networks in Arapuni, Tīrau, Putāruru, and Tokoroa urban communities and the Athol and Lichfield rural communities.

We collect water from various water sources, treat the water to be safe for drinking and distribute water to homes and businesses via water supply pipes either by gravity or pumping. We treat drinking water to a quality mandated by the current drinking water standards.

Why we do it

A reliable supply of clean drinking water is essential for the health of our residents and supports community safety through provision of adequate water supply to meet a minimum level of firefighting capability. A stable supply of water is essential in supporting our existing businesses and encouraging new businesses to our District. Council ensures that residents who are serviced by Council's Water Supply have high quality water that meets all statutory and environmental standards.

Our Goals and Outcomes

The Water Supply 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.
- 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 vision, outcomes and goals is explained in the table below:



The external strategic environment is also of relevance in that the performance of the Water Supply network is governed by legislative obligations such as, Local Government Act, Resource Management Act, Health Act (Drinking Water) Amendment Act and Drinking Water Standards for New Zealand.

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 Water Supply 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 Water Supply Activity contributes towards the implementation of Council's Vision, through achieving the Outcomes and Goals.

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

The National Infrastructure Plan (NIP)

The NIP details the Government's view of the challenges and priorities for infrastructure. The 2015 NIP describes the view to 2045. A Vision for New Zealand's Infrastructure in the NIP is:

New Zealand's infrastructure is resilient and coordinated and contributes to economic growth and increased quality of life.

More specifically the vision for the Water Sector is:

Water infrastructure will contribute to healthy and safe communities, promote the social, economic and cultural well-being of those communities, and will provide a competitive advantage for New Zealand's primary producers and industry.

National Policy Statement – Freshwater Management 2020

National Policy Statements (NPS) are issued by central government to provide direction to local government about how to carry out their responsibilities under the Resource Management Act 1991 when it comes to matters of national significance.

This Freshwater NPS applies to the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management. It directs the content that regional councils, in consultation with their communities, must include in their regional plans. Regional plans tell resource users what is allowed in terms of things like water takes and discharges, and what will require a resource consent.

AMP Response to the Strategic Context

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

- Replacement of the existing telemetry network to improve reliability and resilience of the data used to demonstrate compliance with drinking water standards.
- Staged upgrades of the existing water network to meet projected growth.
- Completion of necessary upgrades to the water treatment plants to meet enhanced Drinking water requirements resource consent requirements.

Key achievements over the last 3 years:

The key achievements for the Water Supply activity from the previous AMP update are:

- Permanent flow meter at Colson’s Hill.
- Implementation of Infrastructure Data systems (for compliance).
- WSPs (Water Safety Plans) approved and audited by the Drinking Water Assessor.
- Pinedale Reservoirs upgrade (baffles and new liners on the roof, tension bands).
- Permanent chlorine disinfection of the Te Waihou water supply.
- Billah St Reservoir rising main upgrade.
- Stratmore Park upgrade to install a new pipe from Benalder Crescent to subdivision boundary.
- Installation of a new 150 mm diameter link between SH1 from the BP service station to Patetere Street on SH27, Tīrau.

Key Focus Areas 2024-34

The key focus areas for the Water Supply activity for the next ten years are:

- Delivery of growth-related programmes in Tokoroa, Putāruru and Tīrau.
- Delivery of watermain renewal programme to address deteriorating and/or under sized pipes.
- Investigation to improve security and resilience of Tīrau water supply.
- Renewal of Tīrau water take resource consent.
- New pH equipment for Putāruru.
- Replacement of reservoirs that have reached end of life.
- Seismic upgrade of reservoirs.

Asbestos Cement Pipes

The pipe network is generally in good condition. There is a significant amount of Asbestos Cement (AC) pipework in our water supply. AC pipes have deteriorated faster than expected resulting in lower performance and higher than expected maintenance. The current renewal expenditure is targeted to replace the AC pipes as a priority.

pH Management

Council is investigating the options for pH correction for the water supplies which have naturally low pH. pH correction has health benefits and helps to prevent excess corrosion of pipework and other fittings in older houses. The mean average value of pH in the Drinking Water Standards is between 7-8 PPM. Water within the South Waikato District is typically below 7 PPM. pH correction is applied in the Tokoroa water supply. Correction of pH is programmed to be installed in the Putāruru.

The Assets covered in this AMP

Council staff manage four urban and two rural water supplies, Tokoroa, Putāruru, Tīrau, Arapuni, Lichfield and Athol. This includes 11 reservoirs, 9 bore water pumps, and 273 km of reticulation.

Assets	
Watermains, km	273
Bores & water supply springs	9
Treatment Plants	6
Reservoirs	11
Valves	1,718
Hydrants	1,125
Assets total replacement value, \$M	89.8

The total replacement value of the Water Supply assets was estimated at \$89.5 M, as per the 2022 revaluation.

The major water supply assets include:

- Water source bore wells and associated pumps and controls.
- Treatment systems (small pumps and storage tanks) which inject chlorine disinfectant into the water.
- Treated water storage reservoirs.
- Large diameter trunk mains (conveying water to reservoirs).
- Water Mains – the backbone pipes of the reticulation network, of 100 mm diameter or larger.
- Fire Hydrants – connected to the fire mains as supply points for the Fire Service.
- Valves – permit parts of the network to be turned off in case of pipe breaks or other service requirements.
- Rider mains – smaller pipes, usually 40 mm or 50 mm diameter, used to supply properties on the opposite side of the street to fire mains.
- Service Connections and Meters – which convey water from the mains to individual buildings.
- Backflow prevention devices at certain properties - ensure that contaminants do not enter the reticulation network.

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

Levels of Service for Water Supply Customers

Council has adopted a series of measures which are intended to indicate how well the Water Supply infrastructure contributes to community outcomes and levels of service, as well as responsiveness, consent compliance, fault and complaint occurrence and planning. Both Customer Service Levels and Technical Standards are used.

The key LOS relate to water quality and continuity of service which are reported on in the SWDC Annual Report.

This plan supports Council providing:

- Safe and reliable drinking water and adequate supplies for firefighting to residential, commercial and industrial properties in the District.

- Water infrastructure that meets the expected growth requirements.
- Water services which comply with regulatory and consenting requirements.
- Management of the water activity in a financially sustainable way.

The key LOS relate to water 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 regulatory and DIA mandatory performance measures. Key performance indicators include environmental compliance for treatment performance and ensuring wastewater is contained in the network and does not contaminate water supplies.

Planning for Future Growth and Demand

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

- Compliance with revised national drinking water standards.
- Renewal of ageing pipes.
- Water demand management.
- Compliance with resource consent conditions.
- Planning for growth in the District.

The following legislative requirements apply to Water Supply management:

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

Demand

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.

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

The impacts of proposed developments in Putāruru have been modelled to measure the impacts on both treatment/source capacity and reticulation. From this modelling, several upgrades are proposed to the reticulation and treatment plant to enable the water infrastructure to cope with increased demands. Increased water demand can be expected from new development in Tokoroa and Tīrau during the planning period. The demand for services is to be met through a combination of managing existing assets, upgrading existing assets and through providing new assets and demand management.

Lifecycle Management

Council manages six separate water supply schemes using its professional engineering staff and external resources as required.

Asset Condition

Most of the pipe network appears to be in good condition based on the frequency of fault and failure incidents. However, some assets are coming to the end of their useful design life. Renewal expenditure is primarily targeted to replace these pipes based on pipe condition and where we have performance issues.

Several reservoirs are made of reinforced concrete and are programmed to be investigated for performance during an earthquake.

Maintenance and Operations

The operation and maintenance of the water supply systems is carried out by the Water Services Team as part of the Service Delivery Group. This includes provision of water 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 water supply.
- Ensure water supply meets the relevant water take resource consent requirements.
- Ensure water is treated at each treatment plant to meet Drinking Water Standards and monitor 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.

Asset operations are organised to meet the fluctuating demands placed on the assets and maintain service to the consumer. Proactive maintenance is aimed at maintaining asset performance and condition at optimal levels and is generally applied to critical assets where the consequences of failure are unacceptable. Reactive maintenance is carried out in response to failure of an asset. A balanced approach is required, with critical assets being proactively maintained while less critical assets are allowed to run to failure.

Capital Renewals

Asset renewal is significant work which restores, rehabilitates, replaces, or renews an existing asset to extend its economic life and/or restore its service potential. Work over and above restoring an asset to its original capacity is classed as development work.

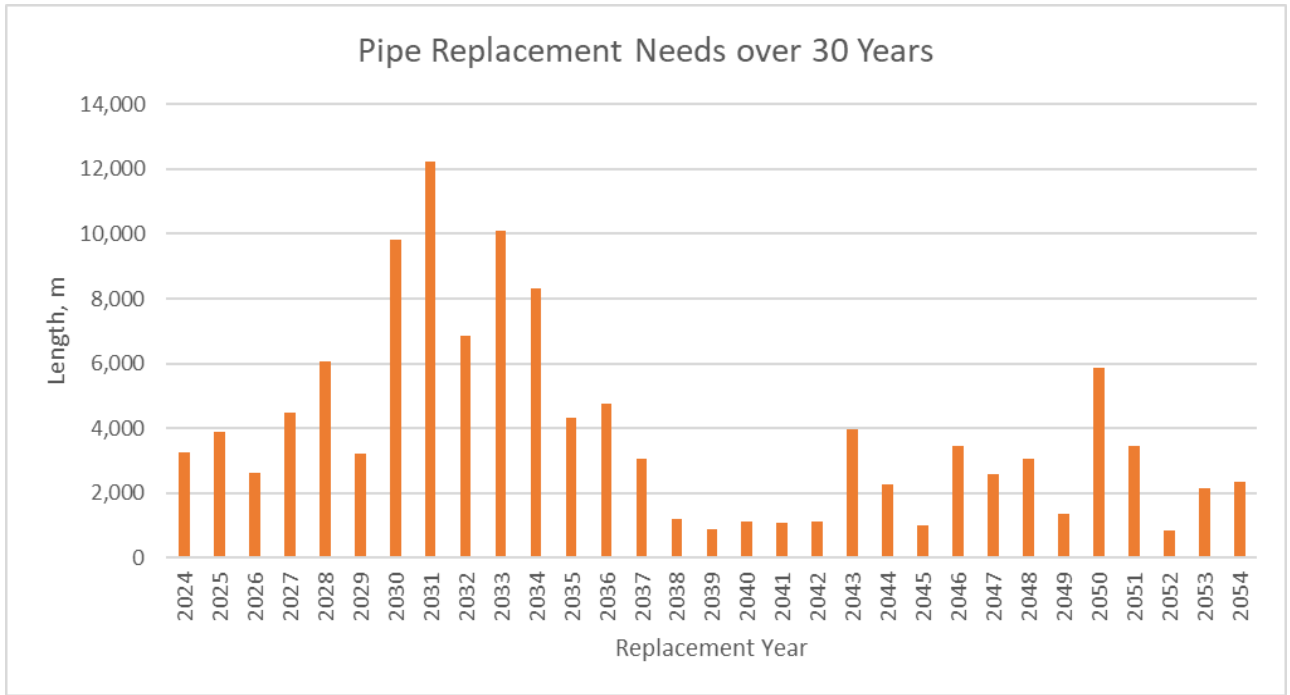
Pumping and treatment plant assets have shorter lives than the pipe reticulation system and more frequent re-investment is required. The AC-E type pipe assets are now in their renewal phase and increased annual renewals funding is required over the next 30 years.

Network hydraulic models have been developed to analyse the water supply network capacity, firefighting capacity and pressure, as well as to optimise operations of the network to meet current and future demands on the network.

Council has a programme of testing pipes to determine their remaining life. This information will be used to reassess pipe lives and further refine the renewal programme. Council also continues to monitor pipe breakages and disruption to consumers. Water pipe replacement is planned to increase over the period of this AMP.

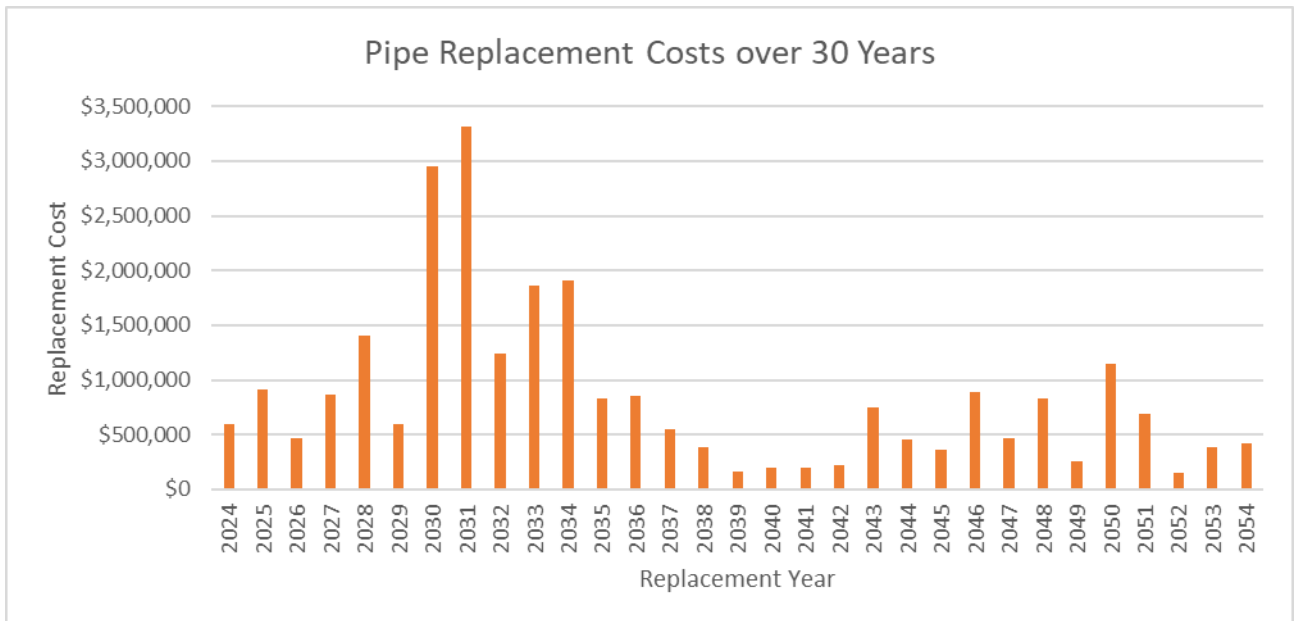
Water Supply Network Renewals

Water supply pipe renewals requirements (in metres) over the next 30 years is shown below.



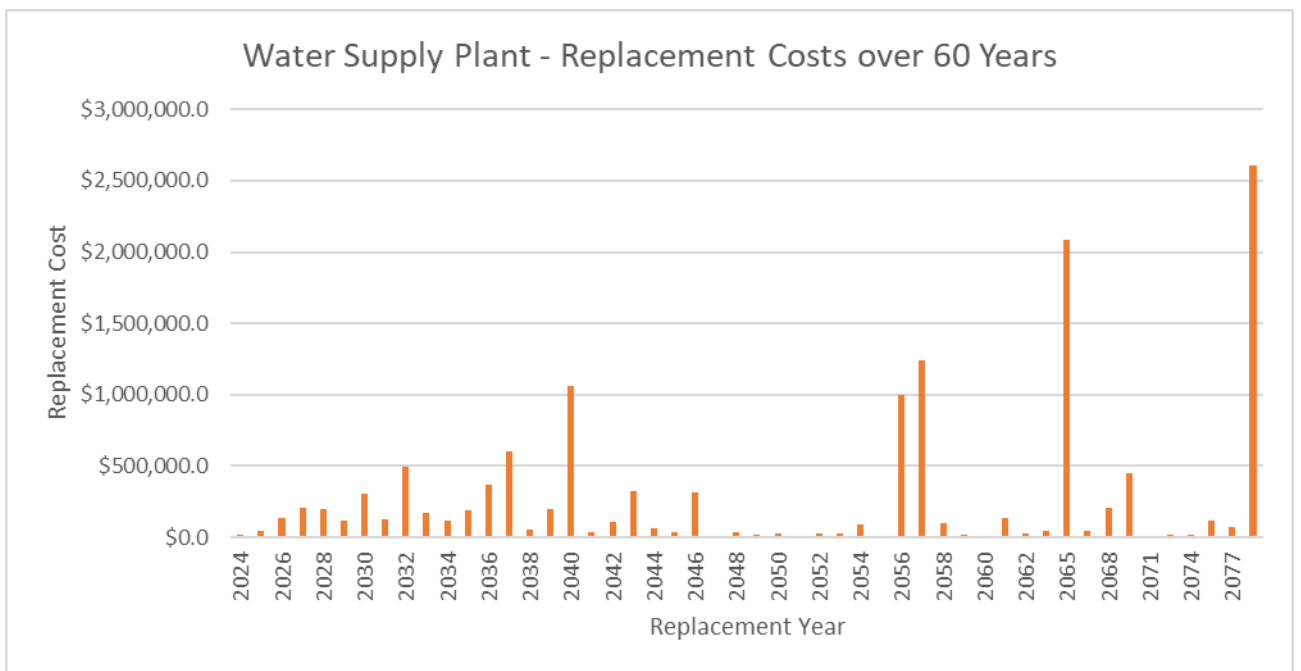
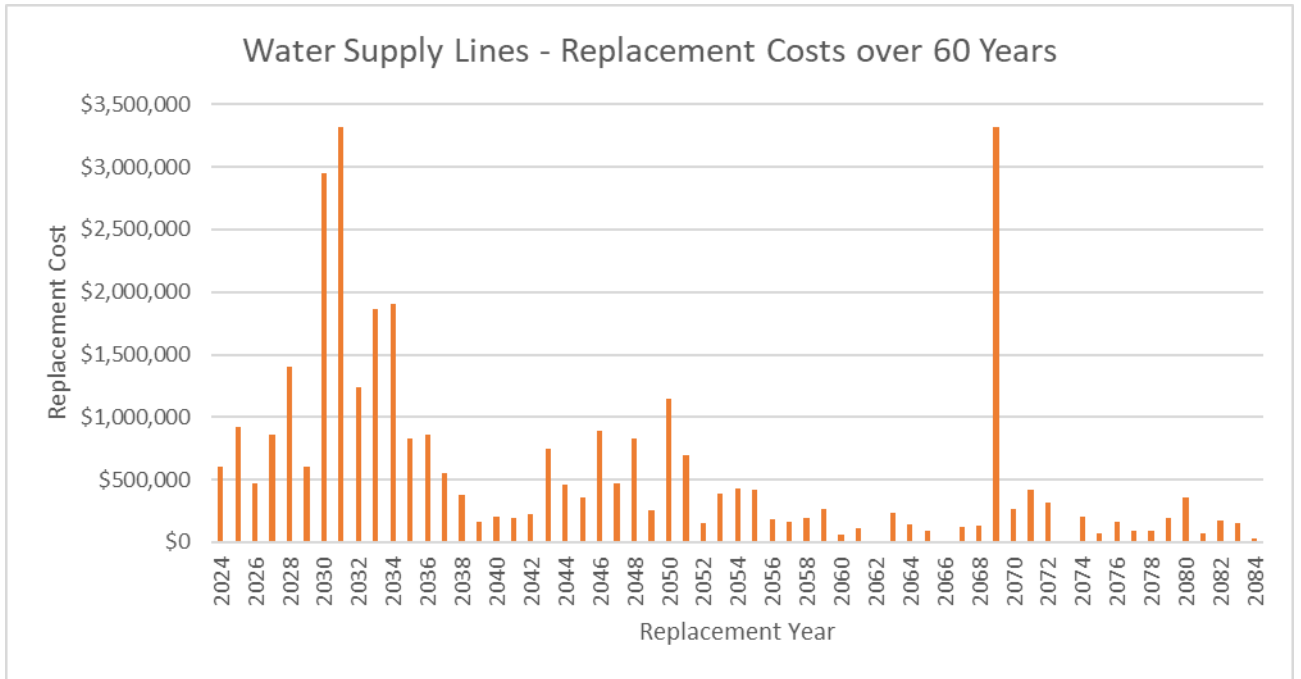
Capital Renewals needs for the next ten years are projected to be **\$16.1 M**.

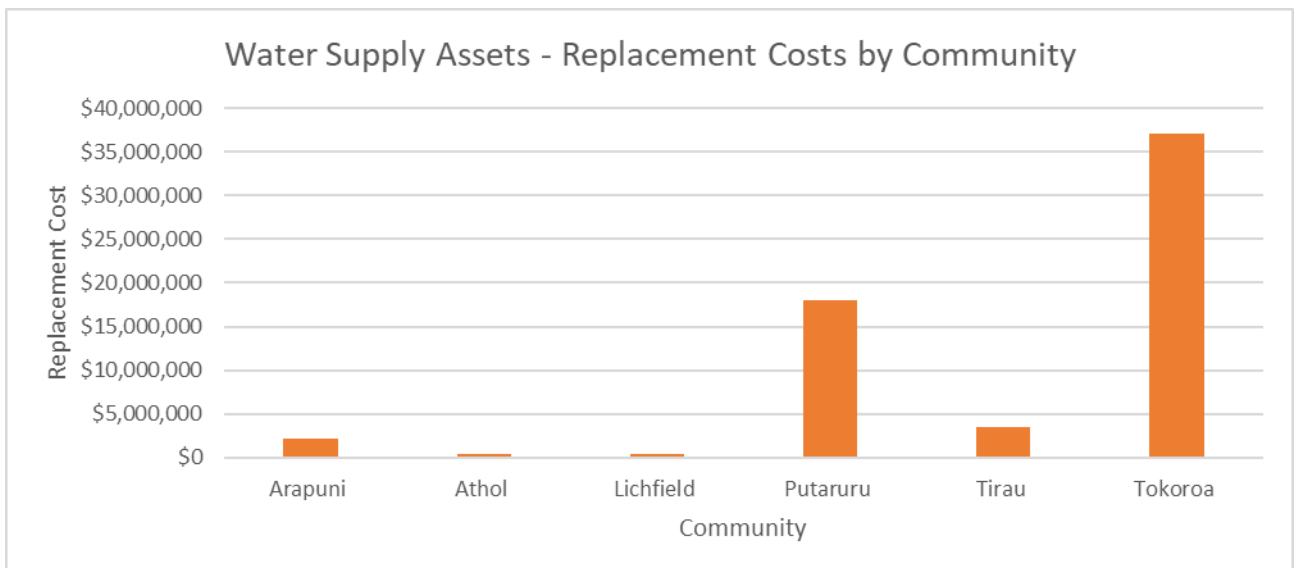
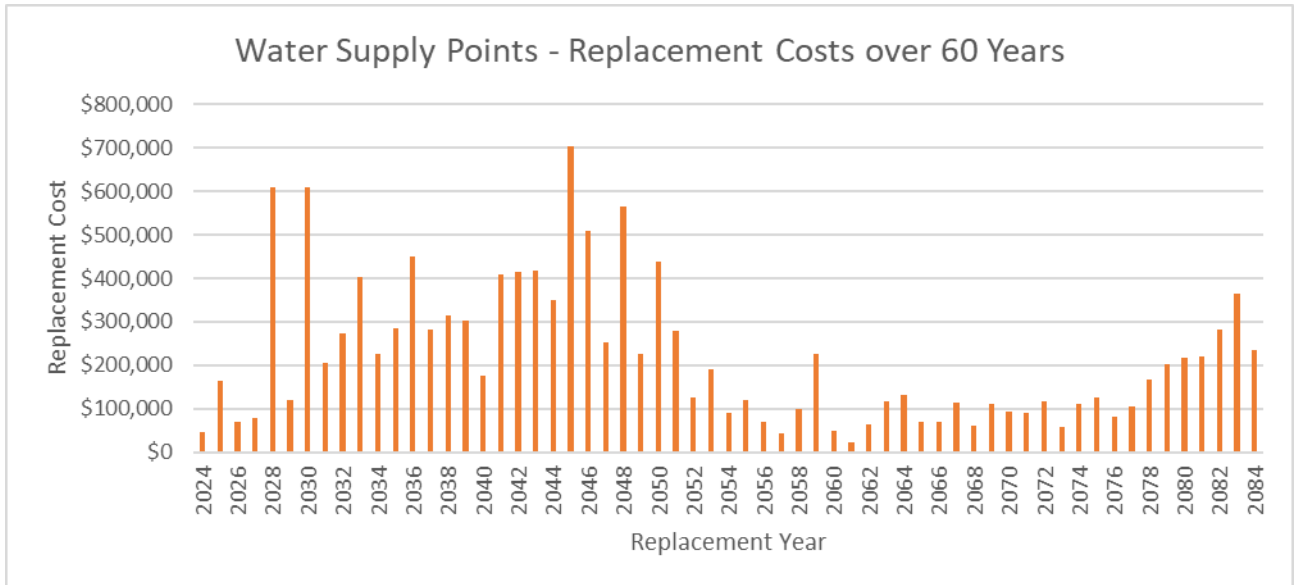
The cost of water supply pipe renewals requirements over the next 30 years is shown below.



Capital Renewals needs for the next thirty years are projected to be **\$26.3 M**.

The costs renewal requirements for the water supply infrastructure over the next 60 years are detailed below.





Managing Risk

Sustainable and reliable delivery of the Water Supply 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 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 Water Supply activity, the assets in this category are:

- Large diameter Water Supply pipes
- Water Supply treatment plants
- Assets with critical customers.

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 seismic 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.

Financial Forecasts LTP 2024

The graphs below detail the actual funding program over the 2024-34 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 water supply network, including fault repairs. See graph below for cost components.

Depreciation: both renewal of existing assets and investment in new ones 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.

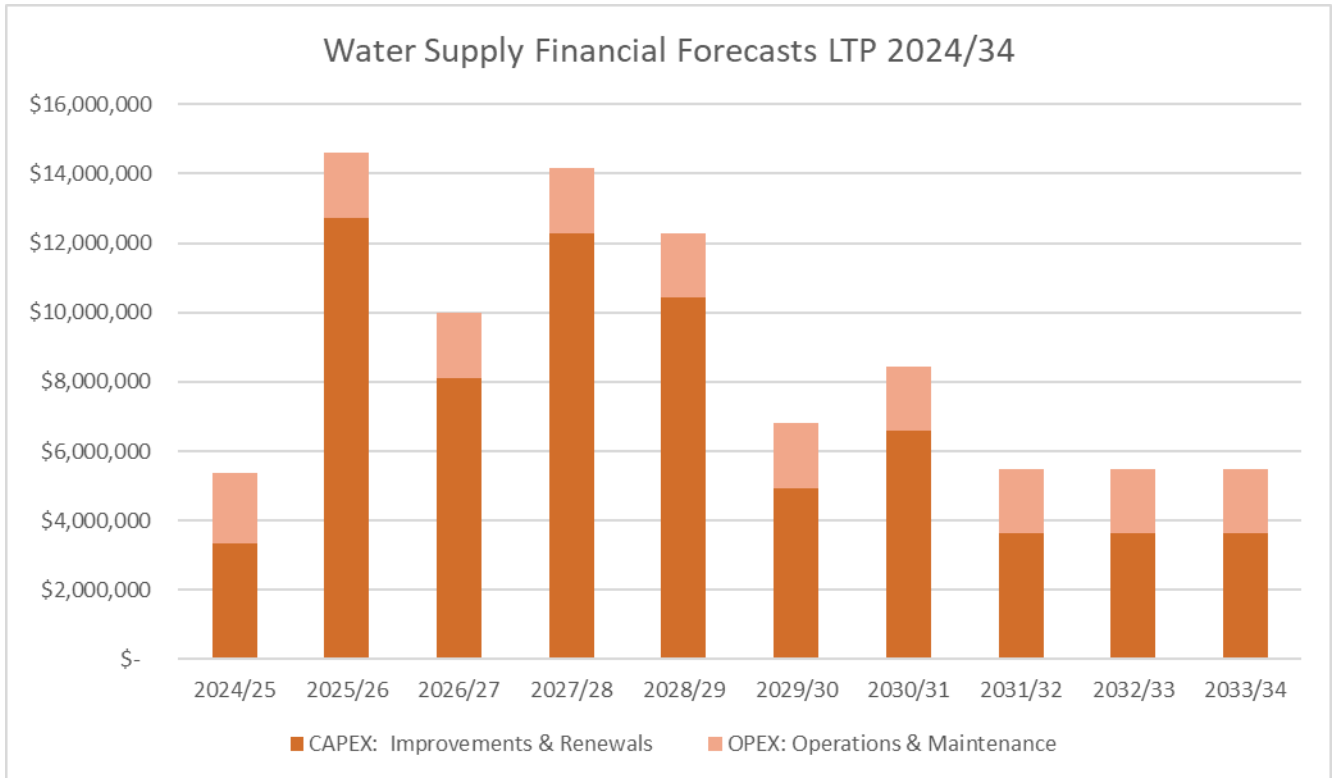
Interest and Principal: New works are funded by borrowing. There is currently no loan balance for water supply works.

Support: This item covers the share of corporate support costs apportioned to Water Supply.

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 old pipes and treatment plant/intake equipment to maintain service to existing consumers at the agreed levels of service. It is funded by drawing from the depreciation reserve.

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



CAPEX & OPEX	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	Total Cost, 10 years
CAPEX: Improvem	\$ 3,325,000	\$ 12,724,066	\$ 8,113,000	\$ 12,291,400	\$ 10,424,314	\$ 4,930,000	\$ 6,575,768	\$ 3,630,000	\$ 3,630,000	\$ 3,630,000	\$ 69,273,548
OPEX: Operations	\$ 2,055,650	\$ 1,896,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 1,871,650	\$ 18,925,500
Total Water:	\$ 5,380,650	\$ 14,620,716	\$ 9,984,650	\$ 14,163,050	\$ 12,295,964	\$ 6,801,650	\$ 8,447,418	\$ 5,501,650	\$ 5,501,650	\$ 5,501,650	\$ 88,199,048

Processes and Practices

The management activities referred to or implied in the preceding paragraphs include decisions about water quality, service responsiveness, reliability, pressure and flow, demand management, renewal and new works requirements, funding, staffing, an overall consideration of risk and other factors.

Decisions are made based on data that is mostly stored in electronic form. They are made on a rational basis which includes economics, engineering and pragmatic considerations.

Improvement Plan

Council's asset management target is to achieve the "intermediate" level, which is considered to be 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 Water Supply 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.