

ASSET MANAGEMENT PLAN

WASTEWATER



OVERVIEW

ASSET MANAGEMENT PLAN EXECUTIVE SUMMARY **WASTEWATER**

Manaaki whenua, manaaki tangata, haere whakamua.
Tihei mauri ora!

No reira, e te haukainga Rangitāne, nei rā te mihi nui ki a koutou e pupuri nei i te mauri o te whenua me ngā wai e rere atu e rere mai.

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

We provide wastewater systems for the safe and reliable collection, treatment and disposal of wastewater (sewage) from residential and commercial properties in Ashhurst, Bunnythorpe, Longburn and Palmerston North.

As a member of the Manawatū River Leaders’ Accord, we recognise we have a role in improving the mauri and health of the Manawatū River. Presently, all the wastewater is treated at a single facility at Tōtara Road, Awapuni and discharged to the Manawatū River. As our population grows, environmental legislation is tightened, and residents’ value in our natural environment strengthens – the way we manage wastewater in the future is likely to change dramatically.

The infrastructure assets that provide the wastewater service are valued at \$400 Million.

Taumata Arowai

In 2019, the Taumata Arowai-Water Services Regulator Bill was introduced to Parliament with the purpose to establish a new regulatory body by the same name. Initially, Taumata Arowai will be responsible for administering a new drinking water regulatory system and a small number of complementary functions relating to improving the environmental performance of wastewater and stormwater networks.

A freshwater policy review is also underway. It is likely this will mean stronger regulations and more inter-regional coordination. We expect this would mainly have implications for the current discharge of wastewater and may lead to a stronger emphasis on protecting waterways from uncontrolled overflows.

Nature calls will answer many of our questions

The Nature Calls project is taking a fresh look at how we treat and dispose of our wastewater. We are collaborating with Rangitāne o Manawatū on the wastewater Best Practicable Option review in order to apply for new consents by June. Any outcome will require us to treat wastewater to a higher standard. It will also require us to look closely at how we manage our Trade Waste customers and how we manage the network to reduce wet weather flows at the treatment plant.

This Asset Management Plan outlines how we plan to manage and invest in our wastewater assets for the next 30 years

Scope of this plan

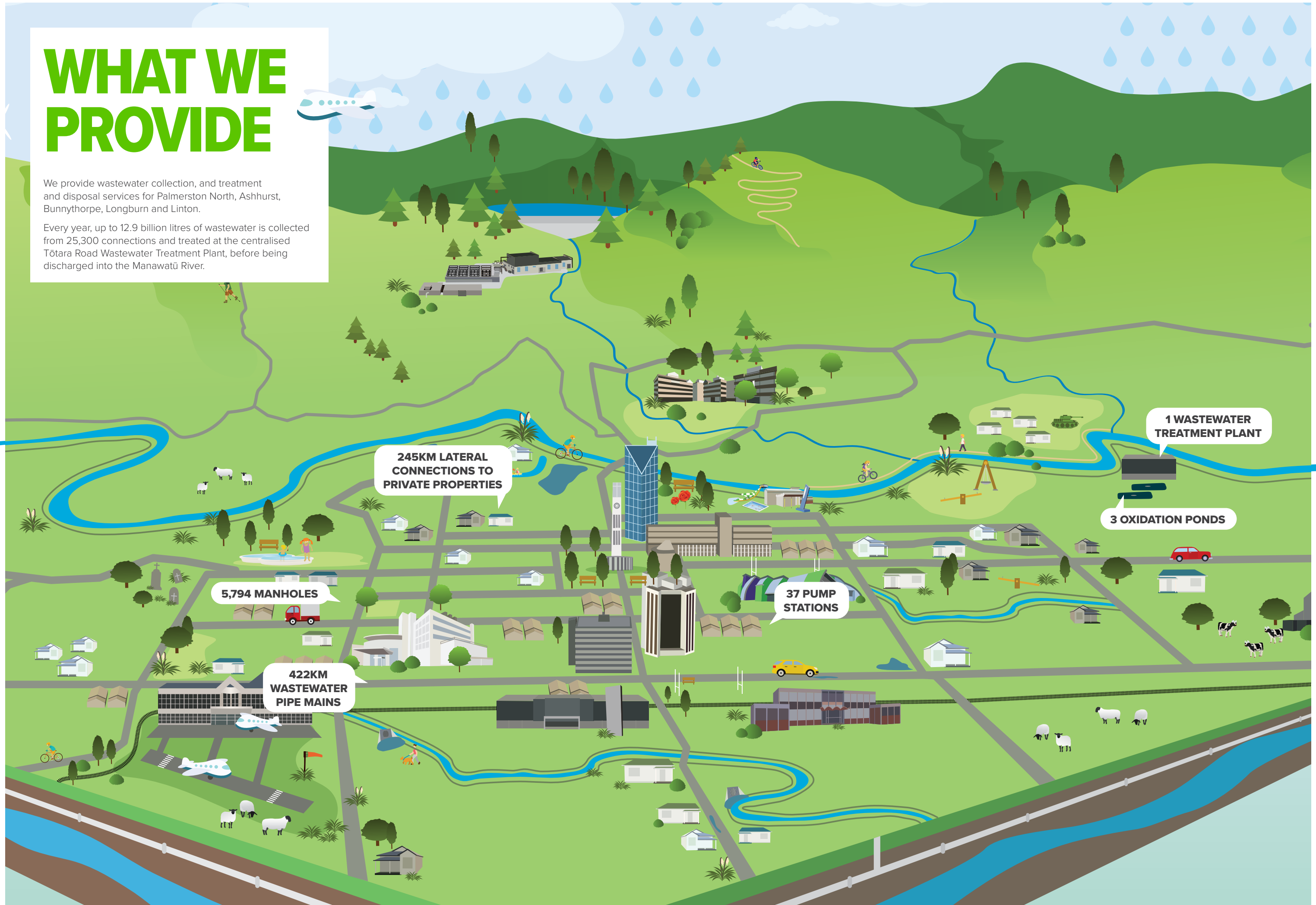
This Plan informs our 10 Year Plan, Financial Strategy and 30 Year Infrastructure Strategy. It supports us in the management of our wastewater assets to:

- Achieve our strategic outcomes as set by Goal 4: An Eco City and the Eco City Strategy
- Meet the levels of service we have committed to;
- Plan for growth and adjust to other drivers such as climate change and new legislation;
- Improve asset knowledge and monitor performance;
- Minimise risk; and
- Plan operations.

WHAT WE PROVIDE

We provide wastewater collection, and treatment and disposal services for Palmerston North, Ashhurst, Bunnythorpe, Longburn and Linton.

Every year, up to 12.9 billion litres of wastewater is collected from 25,300 connections and treated at the centralised Tōtara Road Wastewater Treatment Plant, before being discharged into the Manawātū River.



EVERYONE IS A CUSTOMER



RESIDENTIAL



VISITORS



INDUSTRIAL



RURAL



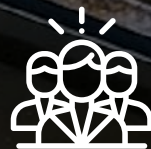
EDUCATION



FIRE AND
EMERGENCY
NEW ZEALAND



HEALTHCARE



COUNCIL



DEVELOPERS



COMMERCIAL

We service a population of around 90,000 people by providing wastewater services in Palmerston North City, Ashhurst, Longburn and Bunnythorpe.

Businesses that produce trade waste are consented as their wastewater can contain substances which can be detrimental to the sewage system, treatment plant processes and the environment, and to the health and safety of people working at wastewater plants.

About 500 businesses are required to have a treatment device to prevent fat, grease and oil from getting into the wastewater system. A smaller number of industries pay significant additional fees, mainly to cover treatment and sampling costs.

There are no restrictions on our other customers, but we do remind them to bin wipes instead of flushing them to reduce blockages. This was more of an issue than usual during Covid-19 due to people taking extra sanitary measures.

The majority of residents were satisfied with the wastewater activity in 2020 but village residents were significantly less satisfied compared to 2019. People expect a reliable service and the number of blockages and faults is increasing. Otherwise, we are meeting our customer performance measures.

We have a strong partnership with Rangitāne o Manawātū. Our stakeholders include, regulators, river leadership, adjoining councils and communities and central government.

WE HAVE SOME CHALLENGES + RISKS

Our treatment plant is aging

Under Nature Calls it is unlikely that any upgrade to the existing treatment plant will be operational until 2026-28. The existing treatment plant was opened in 1968 and it has been maintained to a high standard, but it is showing its age. Some of the equipment has been in service for more than 40 years and some of the technology is out-dated. As a result, breakdowns are more frequent, requiring higher levels of maintenance which leads to an increase in costs. The treatment plant must remain fully operational until any upgraded plant is commissioned, so we have been busy replacing critical components. We have been shifting more and more from a reactive maintenance to preventative maintenance plan.

Our pipe infrastructure is at risk of failing

Currently we have \$20M (31km) of highly critical pipes (typically service a large number of customers or critical providers such as hospitals), that are old and potentially overdue for replacement. The true state of these pipes needs to be understood in order to confirm the risk of them failing, and the priority for their repair or replacement.

We need to stop stormwater entering our wastewater pipes

Stormwater and groundwater can get into our wastewater pipes in a variety of ways, including through downpipes, gully traps and leaking pipes. This is known as inflow and infiltration and increases as pipes and manholes age and deteriorate. This can lead to more overflows during heavy downpours and puts a higher demand on treatment and disposal facilities (flows can increase by up to six times to 150,000 m3 per day). As there are many entry points it is a challenging issue to address. The cost of locating defects and repairs needs to be carefully balanced with early renewal and treatment plant upgrades so a targeted approach is being proposed. The catchments with the highest assessed inflow and infiltration have been the focus of our renewals over the past few years.

Disaster resilience is more than earthquakes and floods

In late 2019, the Ministry of Civil Defence & Emergency Management updated its National Disaster Resilience Strategy, Rautaki ā-Motu Manawaroa Aitua. This strategy covers natural hazards, pandemics, technological risks, security risks, and economic risks.

We have a good understanding of our natural hazard risks from earthquakes and floods. Our Business Continuity Planning has identified a residual risk of wastewater overflows potentially impacting low lying properties in the unlikely scenario of the Manawātū River being in flood following a major earthquake.

Around 80% of our pipes are made of brittle material like concrete or earthenware that could fracture or be damaged in a major earthquake. Our Operational Planning is key to managing risks that we cannot “build” our way out of but needs revising to reflect the recent creation of the Water Operations Division.

Covid-19 has forced us to revise our Business Continuity Planning to manage biological hazard risks and ensure that wastewater services continue as a critical service during pandemics.

Technological risks, security risks, and economic risks have not been comprehensively assessed for the Wastewater Activity.

Climate change will have an impact

Current research suggests that the main impacts of climate change on the wastewater activity will be a significant increase in rainfall in winter, resulting in higher peak flows and total wastewater volumes due to more Inflow and Infiltration. This increase in wet weather flows will increase energy and treatment costs. Climate change will also increase the intensity of short duration events. The impact of more downpours is likely to result in an increase in the number of overflows during wet weather. A budget has been proposed to identify and reduce Infiltration and Inflow, which will also benefit the Nature Calls project.

We are meeting our level of service though and our customers are satisfied

While the risk of failure is considered too high, particularly at the wastewater treatment plant, the actual performance of our network is currently considered satisfactory for our customers. This is based on the number of pipes blocked, sewer overflows and customer satisfaction surveys.

Our short-term focus is on projects that support growth and demand

While we are still unsure what the treatment and discharge solution will look like in the future, it is clear our region is showing strong signs of economic recovery from Covid-19 and growth.

This means a key short term focus is supporting this growth and the increase in demand. This work includes constructing new assets for land that is rezoned for residential and industrial growth, as well as implementing capacity upgrades of existing pump stations.

WHAT’S OUR PLAN?

Improve health and safety

We have some health and safety hazards which though currently controlled, need to be further mitigated to minimise the risk. These include access for staff around the digesters at the Tōtara Road Wastewater Treatment Plant, our wastewater pump stations as well as the quality of equipment we use for maintenance.

Reduce risk of service failure

When we upgrade our pump stations for health and safety reasons, we will also make them more resilient through standardising equipment and ensuring they have enough storage and backup power supplies. Standardisation will also reduce maintenance costs.

We will consolidate the renewal of more critical pipes (trunk mains) into a single programme of works in order to better prioritise projects as better inspection data is obtained.

An investigation has found that the network is vulnerable in locations such as in gullies, below stormwater services and trees. We plan to relocate these services to reduce the risk of stormwater ingress or sewage spills, particularly in Aokautere.

There are a number of large diameter mains that are no longer in service but have not been decommissioned. To prevent collapses in these old pipes we plan to properly decommission these assets to prevent property damage and keep the public safe.

Maintain the front end of the plant

The treatment plant will be upgraded under the Nature Calls Project, but the front end of the plant is unlikely to change. Therefore, we plan to carry out seismic strengthening on the sedimentation tanks, inlet works and main building.

Collect more condition data to inform renewals

Better pipe condition data will either confirm our risk of failure profile as unacceptable or lower it. Either way, better data is needed to prioritise renewal investment to address the current backlog. Better plant condition data will ensure fewer “surprises” and better resource planning.

Improve network and treatment performance

We will be Investigating inline storage options to mitigate the risk of overflows occurring during wet weather. Storage will also attenuate peak flows reaching the plant and improve treatment performance.

In addition to carrying out more condition inspections we need to better identify sources of inflow and infiltration. This will also help with prioritisation of pipe renewals and will generate a backlog of prioritised defects to repair.

Sludge removal – 25% of aerated ponds is full of sludge and we need to better manage sludge removal and disposal from the ponds.

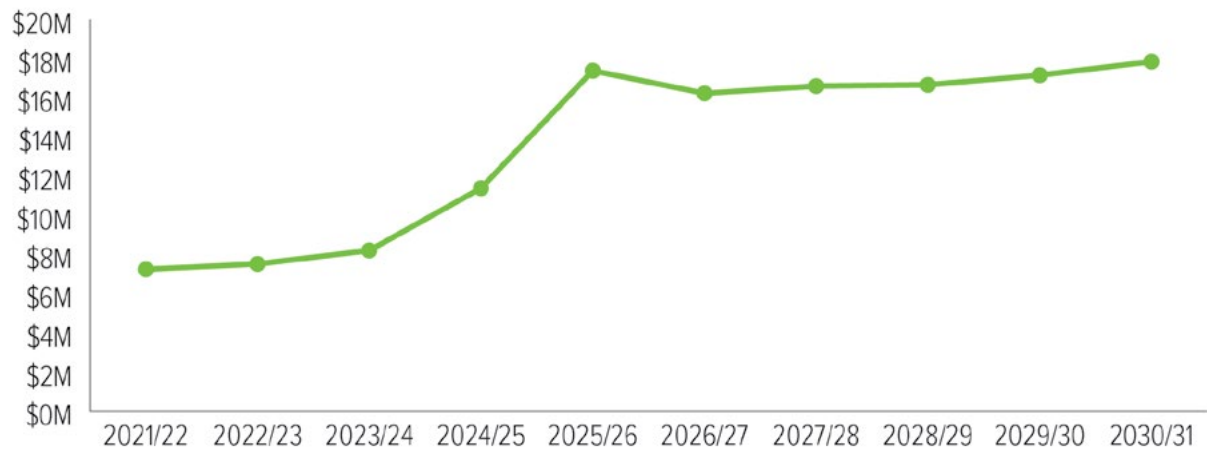
Maintain existing levels of services

We plan to keep operating the existing services at the same level and continue to look for ways to improve operational efficiency. This includes responding to growth in a way that enables new customers to receive the same level of service, at an optimum cost.

HOW MUCH WILL IT COST?

In order to continue to provide safe and reliable wastewater services, we need to invest in both the collection and treatment/disposal of wastewater.

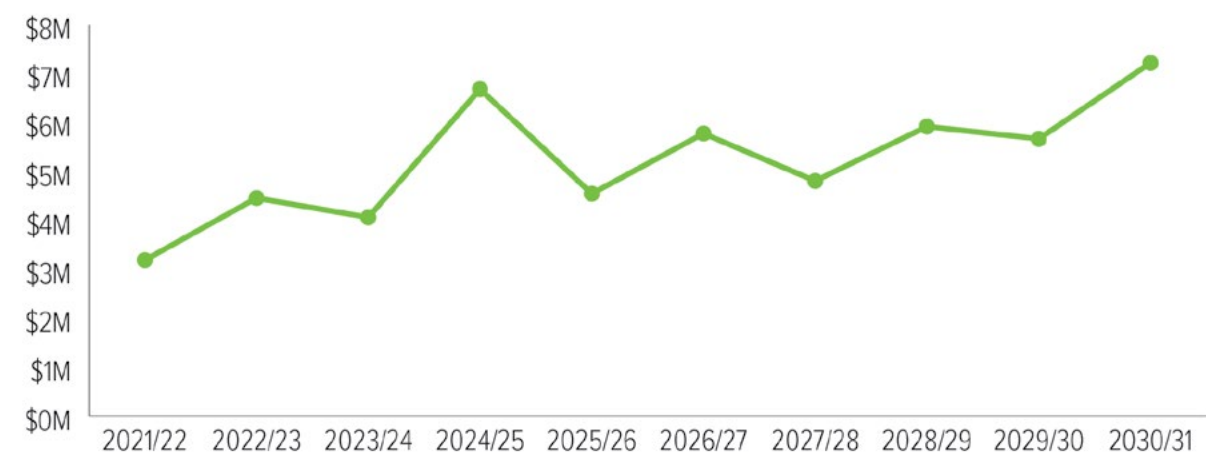
OPERATIONS + MAINTENANCE WASTEWATER ACTIVITY



Operations and maintenance costs are forecast to rise due to the construction of new assets as the city grows. There is also a near doubling in expected operations and maintenance expenditure as a result of the implementation of Nature Calls. Costs will rise as a result of the increasing rate of failure of aging assets until our renewal investment addresses the backlog in asset condition. There are other increases associated with an increase in maintenance costs to maintain service levels.

Other proposed budgets are operating programmes associated with planning and investigation, which include asset condition assessments, inflow and infiltration investigations and decommissioning of redundant mains. Operating programmes also provide for applications to renew resource consents and desludging of ponds.

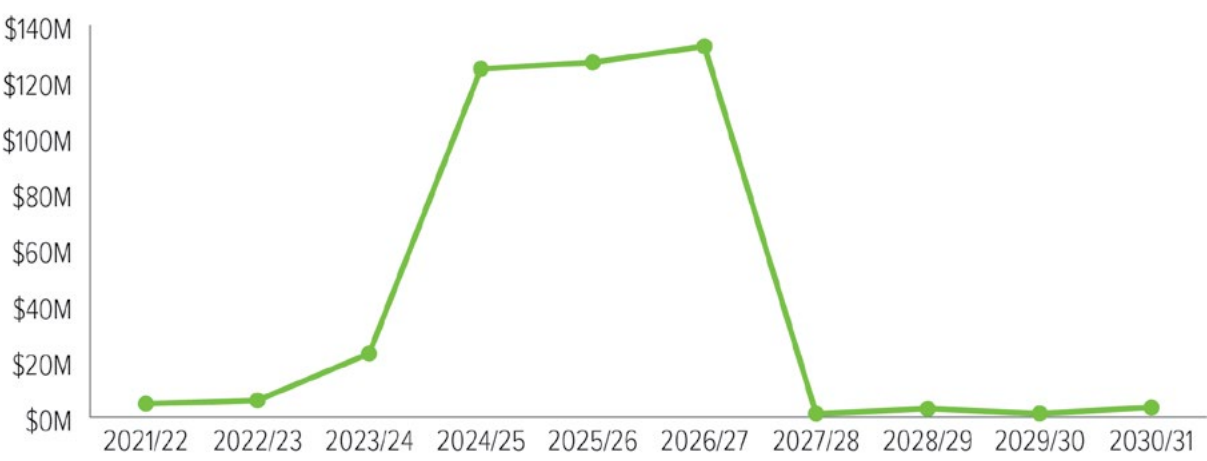
RENEWAL
WASTEWATER ACTIVITY



Of the \$45M in renewal programmes, \$36M (80%) of investment is associated with the pipe network. \$6M of this is targeted at replacing our most critical wastewater pipes. Renewal of these critical mains requires significant planning and it is proposed to programme the replacement of key sections every two years.

The replacement of equipment is a key focus of major programmes of work at the wastewater pump stations, treatment plant (both before and after the upgrade) and the biogas generator. The remaining two inlet pumps at the Tōtara Road Wastewater Treatment Plant also require renewal. These programmes are estimated to cost \$9.1M in total.

CAPITAL NEW EXPENDITURE
WASTEWATER ACTIVITY



The amount we are proposing to invest in new assets is significantly higher in years four to six of the 10 Year Plan. Related to Nature Calls is the need to increase the resilience of the parts of the existing treatment plant that will become part of the proposed upgraded treatment plant. We are planning to do this by spending \$7M over the next six years. Health and safety and equipment upgrades are also planned at the biogas electricity generation system at Tōtara Road Wastewater Treatment Plant.

Pump station capacity upgrades are an ongoing programme responding to city growth and network deterioration. Working alongside this is a wet weather flow mitigation programme that aims to optimise network performance through storage and/or pipe upgrades. An investment of nearly \$13M is planned to improve the capacity of the network.

There are many wastewater programmes (\$6M in total) associated with urban growth that are expected to occur in the next five years.

