



Asset Management Plan
Executive Summary

Wastewater



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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 collection, treatment and disposal services for Palmerston North, Ashhurst, Bunnythorpe and Longburn. Linton also has some wastewater pipes, which drain via the Linton Army Camp network, to our treatment plant.

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 our treatment plant in Awapuni and discharged to the Manawatū River. As our population grows, environmental legislation increases, and residents' value of the natural environment strengthens – the way we manage wastewater in the future is undergoing significant change.

Taumata Arowai became New Zealand's dedicated regulator in 2023. Upon its establishment it released the Drinking Water Quality Assessment Rules that set standards for water supplies. In 2024, it will also assume responsibility for wastewater and stormwater networks, becoming the three waters regulator for Aotearoa.

The previous Government had been progressing Three Waters Reform so that three water services would be provided by ten publicly-operated water services entities by July 2026. With the change in Government in October 2023 the legislation has been repealed. The new government intends to introduce new legislation by mid-2024 in line with its Local Water Done Well proposal.

Under the National Policy Statement for Freshwater Management 2020, we must give effect to the hierarchy of obligations and six principles of Te Mana o te Wai.

Rangitāne O Manawatū expresses this in their Te Mana o te Wai statement and objectives. The Te Mana o te Wai statement is:

The most significant quality that flows through wai is mauri. The mauri is generated throughout the catchment and is carried through the connected tributaries, groundwater, wetlands and lagoons. It is the most crucial element that binds the physical, traditional and spiritual elements of all things together, generating, nurturing and upholding all life, including that of Rangitāne o Manawatū. The health and well-being of Rangitāne is inseparable from the health and well-being of wai. The Manawatū Awa, its catchment, tributaries and connections, wetlands and lagoons are taonga and valued for the traditional abundance of mahinga kai and natural resources.

Nature Calls is a key project for us

The Nature Calls project is taking a fresh look at how we treat and dispose of our wastewater for the coming decades. We're proposing a hybrid discharge to river and land, and the highest standard of treatment currently available. We're also looking at ways to reduce the amount of treated wastewater entering our river. In 2023 our consent application was accepted by Horizons Regional Council for processing.

This Asset Management Plan outlines how we intend 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 the proactive management of our wastewater assets to:

- Achieve our strategic outcomes as set by Goal 4: A sustainable and resilient city
- Meet the agreed levels of service,
- Plan for growth and key drivers such as consenting and legislative requirements,
- Improve asset knowledge and monitor and manage performance,
- Plan programmes and operations, and
- Mitigate and minimise risk, including for climate change.

What we provide

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

We have approximately 25,000 household and business connections that produce 13 trillion litres of wastewater each year. Wastewater is treated at our wastewater treatment plant in Awapuni for four days before being discharged to the Manawatu River.

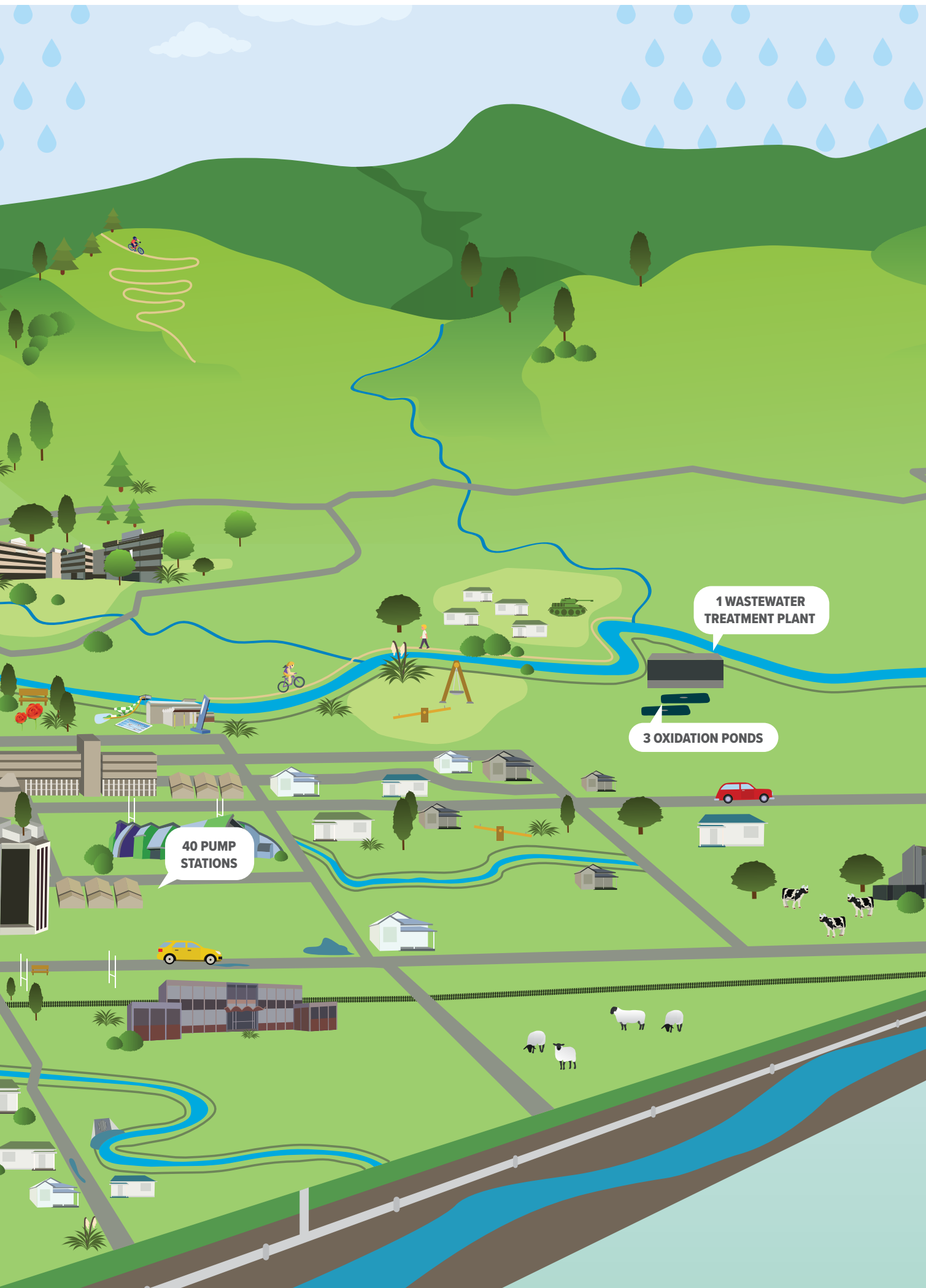


249KM CONNECTIONS TO PRIVATE PROPERTIES

6,028 MANHOLES

433KM WASTEWATER PIPE MAINS





40 PUMP STATIONS

1 WASTEWATER TREATMENT PLANT

3 OXIDATION PONDS

Everyone is a customer



Residential



Visitors



Industrial



Rural



Education sector



Fire and
Emergency
New Zealand



Healthcare



Council



Developers



Commercial

We service a population of approximately 90,000 people through the provision of wastewater services for the City of Palmerston North, including Ashhurst, Longburn and Bunnythorpe.

Businesses that produce trade waste are consented as their wastewater can contain substances which may be detrimental to our wastewater system, treatment plant processes, 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 damaging the wastewater network. A smaller number of industries pay additional fees, mainly to cover treatment and sampling costs.

There are no restrictions on our other customers, but we do remind them to dispose of wipes to landfill, rather than flushing them, in order to reduce blockages. The majority of residents were satisfied with the wastewater activity in 2022. People expect reliable service, and the number of blockages and faults are decreasing. We are meeting our customer performance measures.

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

We have some challenges + risks

Our treatment plant is aging

As our consent is now being reviewed for processing by Horizons Regional Council, it is unlikely that any upgrade to the existing treatment plant will occur in the next few years. The existing treatment plant was opened in 1968 and it has been maintained to a high standard but is now showing its age. Some of the equipment has been in service for more than 40 years and some of the technology is outdated. As a result, breakdowns are becoming more frequent, requiring higher levels of maintenance which leads to an increase in operating costs. The treatment plant must remain fully operational until any upgrades occur, so we have been busy replacing critical components. The focus is on moving towards a more preventative maintenance programme.

Our pipe infrastructure is aging

Currently we have 24km of highly critical pipes. These pipes typically service a large number of customers or critical providers such as hospitals and schools. Some assets are old and potentially due for replacement. The condition of these pipes needs to be better understood in order to confirm the risk of failure, and the priority for repair or replacement.

We need to stop stormwater entering our wastewater network

Stormwater and groundwater can get into our wastewater pipes in a variety of ways, including from roof downpipes, gully traps and leaking pipes. This is known as inflow and infiltration and it may increase as pipes and manholes age and deteriorate. This can lead to increased overflows during heavy or prolonged rainfall and puts a higher demand on treatment and disposal facilities.

Risk and Resilience

We have a good understanding of the risks to our wastewater network due to natural hazards such as earthquakes and floods.

Around 80% of our pipes are made of brittle material like concrete or earthenware that could fracture or be damaged in a major earthquake. Some buildings and structures at the treatment plant have unacceptable seismic risk. Our asset management planning is key to managing risks that we cannot “build” our way out of.

Pandemic risks, technological risks, security risks, and economic risks have been assessed for the Wastewater Activity. A criticality framework has been developed to help inform operations and renewal planning. The criticality of collection and treatment assets are yet to be integrated into the criticality framework.

Growth is continuing

A key focus is supporting growth and demand increase. This work includes constructing new assets for land that is rezoned for residential and industrial growth, as well as implementing capacity upgrades of existing pipelines and pump stations.

Climate change

Climate change is also expected to increase rainfall in winter. As there are many connections and entry points this is a challenging issue to effectively address. The catchments with the highest assessed inflow and infiltration (where rain is entering wastewater pipes) have been the focus of our upgrades over the past few years, and modelling is underway to determine an appropriate programmed approach.

What's our plan?

Reduce risk of service failure

We will consolidate the upgrading of critical pipes into a single work programme in order to prioritise projects as better condition data is obtained.

An investigation has found that the network is vulnerable in locations such as in gullies and around other services. We plan to relocate or protect these services to reduce the risk of failure and wastewater overflows.

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

Sustainability

Sustainable energy usage can be achieved through improvements to Biogas Electricity Generation and operational efficiency at the Tōtara Road Wastewater Treatment Plant and our pump stations. We are undertaking a study to address future management of sludge from ponds and bio reactors. Implementation of food waste and organic waste to energy initiatives could lead to improvements. We'd do this by using surplus digester capacity to treat organic waste to generate biogas which is then burned in the gas engine to generate electricity to run the wastewater treatment plant site. The gas cogeneration system will receive upgrades and improvements to optimise the capture and conversion to energy of the biogas.

Implement Nature Calls project

We have confirmed the 'best practicable option' for managing, treating and discharging the city's wastewater for the next 30 to 50 years. The selected option will see treated wastewater discharged to both land and river. Three quarters of the time the treated wastewater will be discharged to the Manawātū River. During the remainder, the discharge of wastewater reduces to the river by 75% and this highly treated wastewater supplied will be to land by irrigation.

We will also look at diverting a higher proportion from the river over the lifespan of the consent. The wastewater is planned to have the highest treatment currently available in New Zealand.

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 in the short to medium term.

Collect more condition data to inform renewals

We are working hard to improve our pipe condition data, as this information is key to informing our risk failure profile. Understanding condition is also key to prioritising investment to ensure better outcomes. More plant condition data will ensure fewer reactive maintenance issues and improve planning.

Improve network and treatment performance

We will be investigating capacity constraints and design solutions to help mitigate the risk of overflows occurring during wet weather periods.

As well as collecting condition assessment data, we need to identify sources of inflow and infiltration. We are establishing a flow monitoring programme to collect data to use in calibrating our hydraulic model and update our network system performance that will inform the capital renewal and upgrade programmes. During calibration the selected rainfall data will consider climate change, taking these effects into consideration.

Maintain existing levels of services

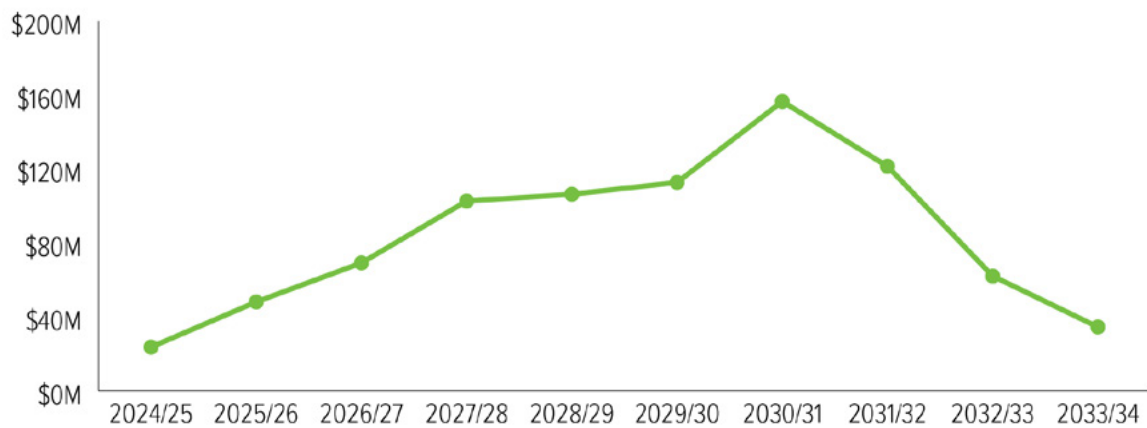
We plan to keep operating the existing services at the same or better levels and continue to look for ways to improve operational efficiency. This includes responding to growth in a way that enables new customers to receive the agreed level of service, at an optimum cost.



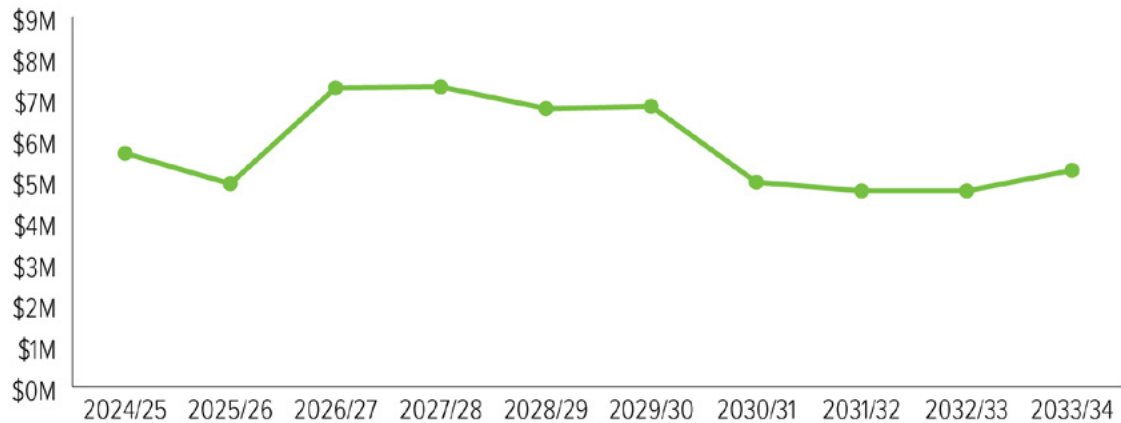
How much will it cost?

Operations and Maintenance

The largest proportion of operational expenditure is spent operating and maintaining our existing assets. Our consequential operational expenditure (from the creation of new assets) will increase steadily from year 7 once the new treatment and discharge with our future wastewater (Nature Calls) comes into effect, and new assets associated with growth areas begin to require maintenance.



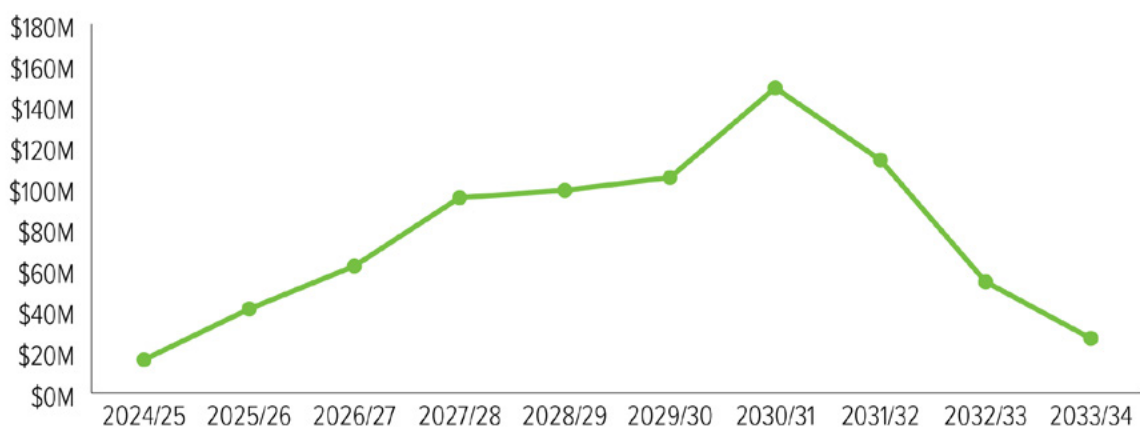
Renewals



Investment will continue to be required to implement the Nature Calls project, renew critical assets and provide infrastructure for new growth areas.

The majority of proposed future spend is for renewing wastewater pipes throughout the city, and particularly, critical wastewater trunk mains. Further work will be required to fully develop our renewals programme.

Capital new



Nature Calls takes up the majority of our capital new budget over the next 10 years. In addition to this we need to upgrade parts of the pipe network and increase network storage capacity to reduce the probability of overflow during rainfall events, as these events are predicted to be more frequent and more intense in the future.

There is also a need to realign at risk pipelines (those under stream beds and buildings) and ensure that we can extend our wastewater network to future growth areas. To do this work, we expect to be investing at least \$7 to \$11 million per year over the next 10 years.

