

PALMYTM
PAPAIOEA
PALMERSTON
NORTH
CITY



ASSET MANAGEMENT PLAN
STORMWATER



OVERVIEW

ASSET MANAGEMENT PLAN EXECUTIVE SUMMARY **STORMWATER**

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 māi.

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

With the effects of climate change becoming more apparent over the next 30 years, our stormwater network has never been so important.

More frequent and intense rainfall means our network will need to be adapted to cope with these new risks.

The purpose of the stormwater system is to protect the environment and public health by controlling the level of pollutants and sediment in stormwater runoff that goes into streams and rivers, and to protect buildings from internal flooding by water that ponds or flows during heavy rain events.

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. Council's strategic focus is to raise the profile and quality of city urban streams, acknowledging their cultural significance as tributaries of the Manawatū River.

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 and enforcing 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 lead to discharge of wastewater and a stronger emphasis on protecting waterways from uncontrolled overflows.

This Asset Management Plan outlines how we plan to manage and invest in our stormwater 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 stormwater 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
- Plan operations

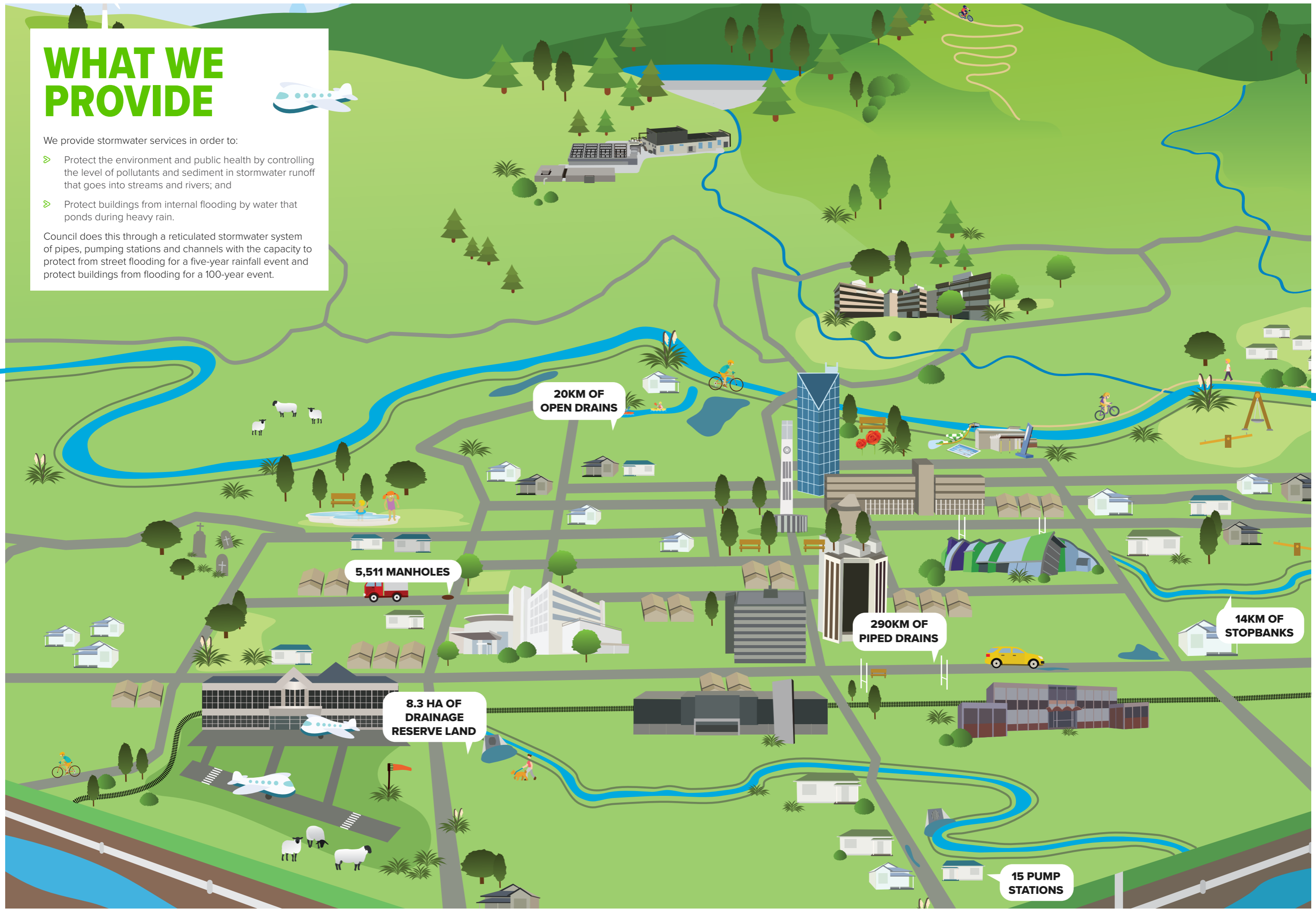
WHAT WE PROVIDE



We provide stormwater services in order to:

- Protect the environment and public health by controlling the level of pollutants and sediment in stormwater runoff that goes into streams and rivers; and
- Protect buildings from internal flooding by water that ponds during heavy rain.

Council does this through a reticulated stormwater system of pipes, pumping stations and channels with the capacity to protect from street flooding for a five-year rainfall event and protect buildings from flooding for a 100-year event.



20KM OF OPEN DRAINS

5,511 MANHOLES

290KM OF PIPED DRAINS

14KM OF STOPBANKS

8.3 HA OF DRAINAGE RESERVE LAND

15 PUMP STATIONS

EVERYONE IS A CUSTOMER



Our strategic focus is to raise the profile and quality of city urban streams, acknowledging their cultural significance to Rangitāne as tributaries of the Manawatū River. Stormwater quality is an issue across the city due to contamination from wastewater during heavy rain and land use. We are working with Horizons Regional Council as we have overlapping responsibilities. Complaints about the urban waterways have increased since maintenance budgets and activities were reduced.

People expect their properties to be safe from flooding. We ensure that at the very least, habitable floors are protected

by requiring minimum floor levels to be set on new houses where appropriate. Some properties have been flooded in recent years and we are in the process of upgrading the network to address these capacity issues. Complaints about nuisance ponding of water on roads has increased but no action is justified as this is part of the stormwater system design.

Even though certain complaints have increased, the overall satisfaction of residents has improved for the Stormwater Activity.

WE HAVE SOME CHALLENGES + RISKS

Our city is growing

In most areas where the City is growing there are existing sensitive receiving environments such as urban streams and wetlands. Many of these are already degraded. As these areas are urbanised there is an opportunity to improve water quality and ecology by applying water sensitive design.

Water quality is poor in our urban streams

Cultural health monitoring of the urban streams carried out by Rangitāne o Manawatū under our joint programme Hei Manga Ora. Previous water quality monitoring indicates that the urban streams are contaminated by sewage from urban environment and our wastewater network.

Inspections in 2019 identified significant areas of poorly managed vegetation in our open drains and streams and other issues causing hydraulic capacity problems. More appropriate species are needed to improve capacity, water quality and amenity.

Infill / intensification

We're seeing more subdivisions of existing properties (infill). This is putting the existing level of service at risk due to more hardstand surfaces contributing to direct more rapid rainfall runoff.

Climate change will have an impact

Current research suggests that the main impacts of climate change on the stormwater activity will be a significant increase in rainfall in winter, and a higher frequency of extreme rainfall events. This could increase both nuisance surface water ponding and flood events.

Overland flow paths have been piped and built over

We now have better modelling and GIS tools to manage overland flow paths. However a lack of controls in the past has meant that there are some problematic areas that need rectifying.

Related to this, some urban streams are accessible only through private property, preventing us from effectively managing them.

Regional stormwater management

We are working regionally to better manage stormwater, but this work has slowed while water reforms take place as some issues will be addressed nationally. However, progress towards integrated management of our stormwater discharges.

Asset condition knowledge is limited

While the risk profile of our stormwater pipes is acceptable as they tend to last a very long time, we have limited knowledge of the actual condition of these assets.

Pump stations are vulnerable

Our pump stations are vulnerable due to the lack of dedicated emergency backup system.



WHAT'S OUR PLAN?

Partnership with Rangitāne and the community

Applying water sensitive design to renewal work will be a key change. It will help achieve improved outcomes for water quality, hydraulic capacity and amenity.

Our new approach is to fund a "one time" clean up and vegetation removal exercise for all the urban streams over the next five years. As sections are cleared, they will be planted with appropriate species with support from Rangitāne and community groups/businesses.

Operationalise our new stormwater framework

The framework will set out the performance requirements and challenges for each catchment in the city and other work to renovate our open streams and drains. Once adopted by Council it will empower Council officers to set specific requirements of developers.

Respond to growth

Requiring hydraulic neutrality will be a key response to growth but some capacity upgrades of existing infrastructure will be required.

We are expecting increased operational costs to maintain stormwater treatment devices that are vested to us.

As our city grows, we will need to maintain our stormwater model to reflect the changes.

Improve resilience and reduce risk

Purchasing additional mobile generators and emergency pumps will provide the much needed resilience in the stormwater system.

Areas where more capacity is needed has been identified for upgrading, and retention of flows at the Linklater Reserve is planned.

Where possible, we intend to purchase land adjacent to urban streams to enable us to better manage them and facilitate access for walking and cycling.

Design for climate change

We will continue to design new infrastructure with provision for climate change. Where infill is occurring, the impacts of heavier, more frequent rainfall is expected to be mitigated by developers adopting rainwater tanks for retention and minimising the area of impervious surfaces.

Use data to prioritise repairs

New condition assessment data will confirm our service failure risk profile and provide us with a prioritised backlog of pipe defects. This will help us maintain our level of service and plan and optimise future pipe replacements.

Obtain consents for our discharges

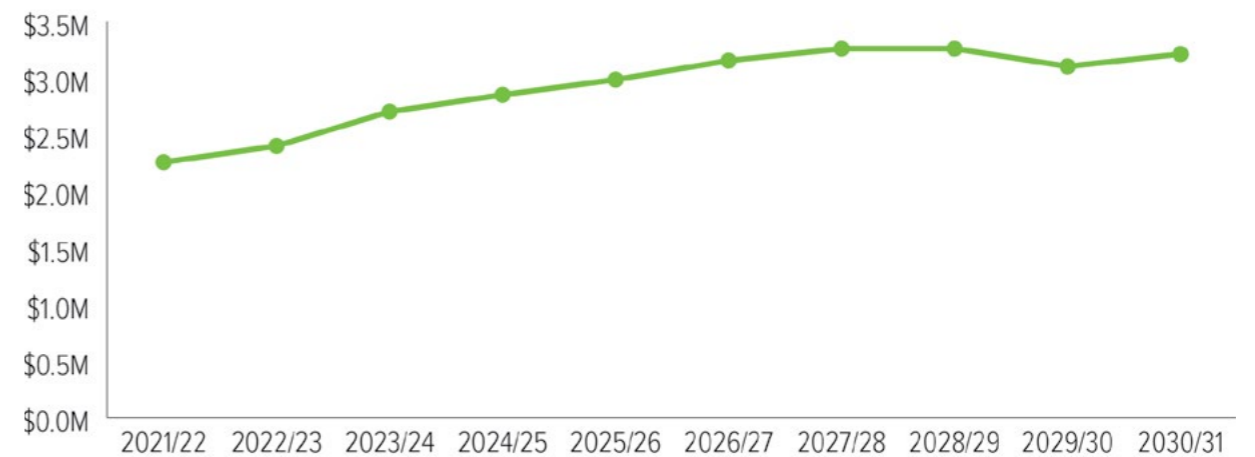
Our partnership with Rangitāne on Hei Manga Ora has provided us with invaluable information on the cultural health of our waterways. This information combined with the roll out of an improved water quality monitoring programme will inform future discharge consent applications.



HOW MUCH WILL IT COST?

In order to increase the capacity and performance of our stormwater services to meet our agreed levels of service, we need to invest significantly across all areas of the stormwater network in the first five years of the 10 Year Plan. This includes investing in planning and investigations, the maintenance of urban waterways, and the renewal and/or upgrading of pump stations and pipe network.

OPERATIONS + MAINTENANCE STORMWATER ACTIVITY

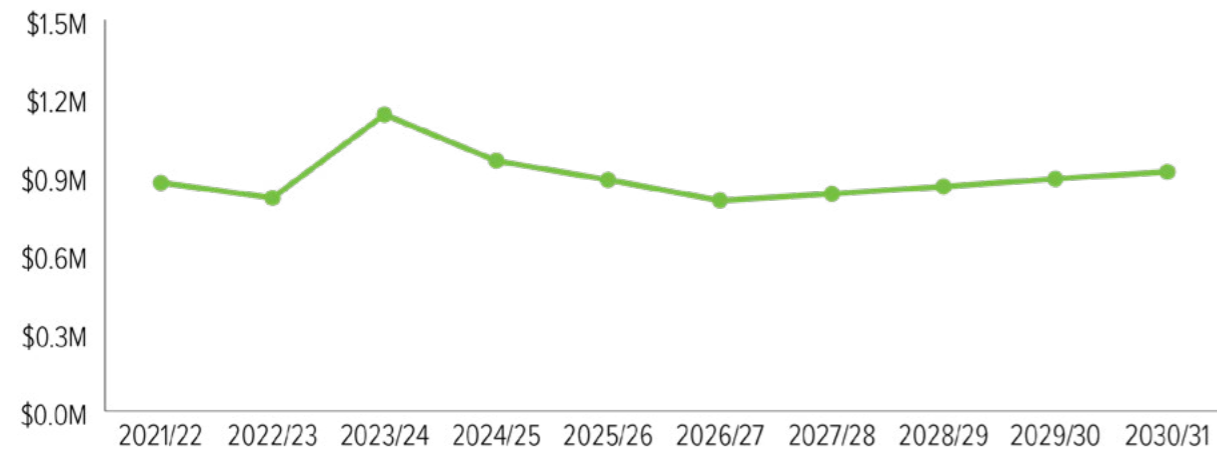


Maintenance budgets for open channels have been exceeded in recent years as we respond to the significant backlog of deferred maintenance of open channel and drains. A reasonable increase in operations and maintenance budgets (\$0.25M per year) is required to meet the required levels of service reflecting the acquisition of new assets associated with treating stormwater before discharge to the receiving environment. There are small increases proposed to meet a shortfall in pump station maintenance costs and operations and maintenance costs associated with new assets.

Investment is also required to better understand network capacity and performance as well as the impact of land use on water quality. This is a high priority. Associated with this is the need to update and extend the stormwater model to cover new growth areas to inform applications for stormwater discharge consents where required under the One Plan. An extra \$1.7M is needed for each of these issues (\$3.7M in total over ten years).

The asset failure risk profile of stormwater mains is relatively low but informed by a limited amount of condition information.

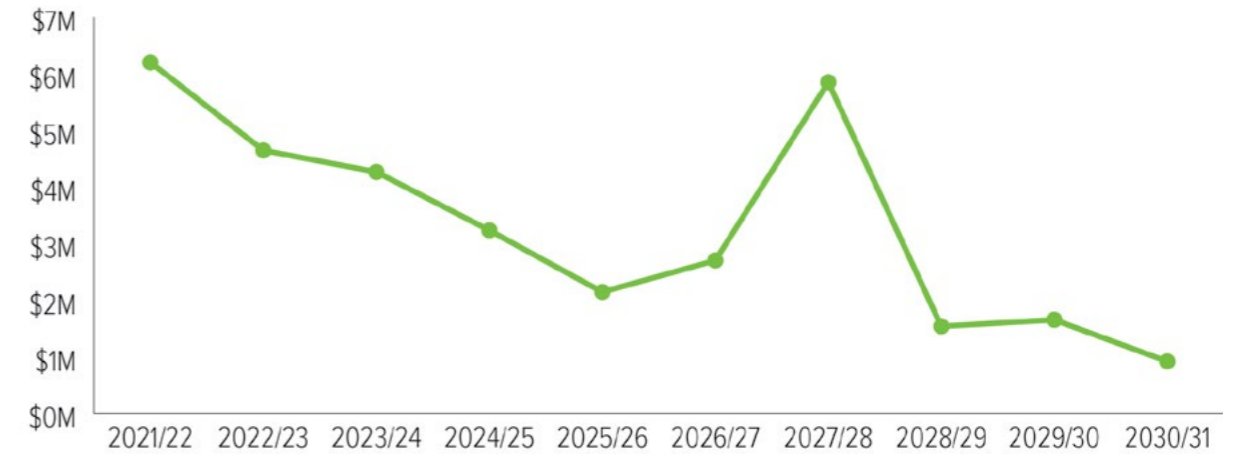
RENEWAL STORMWATER ACTIVITY



Most renewal investment (75%) is associated with our stormwater pipe network. Due to the long life of the pipe assets, their renewal needs (\$0.6M per year) are relatively modest compared to our Water and Wastewater Network assets.

Most of the stormwater pump stations have equipment that is at or near the end of its useful life. We plan to overhaul these in the next five years. We have also included budget provision for the replacement of minor pump station equipment as that comes up each year.

CAPITAL NEW EXPENDITURE STORMWATER ACTIVITY



Of the \$30M capital new budget, \$7M is earmarked initially on resolving known capacity issues in the network and at pump stations. Some allowance has also been made for the ongoing resolution of capacity issues as they arise in the future.

\$7M is also needed for flood mitigation, which is expected to become more of a focus in years three, four and seven as we improve the accuracy of our network performance modelling and understand how best to mitigate the impact of climate change.

More than a third of capital new investment (\$12M) is required to provide for urban and industrial growth. Most of this is needed in the first five years but there is a need for new stormwater infrastructure to meet growth throughout the 10 Year Plan.

