

PALMY[®]
2021-31



**TE MAHERE
MŌ NGĀ WAI
WATERS PLAN**

TE WAI PARA
WASTEWATER CHAPTER

TE RATONGA WAI MĀORI
WATER SUPPLY CHAPTER

TE WAI UA
STORMWATER CHAPTER

Ahunga rautaki



Strategic direction



Te whakaaraara rawa: Te ahunga rautaki a te Kaunihera

Resource recovery and Council's strategic direction

The Palmerston North City Council vision is He iti rā, he iti pounamu Small city benefits, big city ambition. The Waters plan primarily contributes to the Palmerston North City Council's goal of an Eco city. The Plan describes Council's activities for the first three years of the 2021-2031 10-Year Plan in three chapters: Wastewater, Water supply and Stormwater. Significant reform has been proposed for the future management of the three waters. The Government is considering shifting the three waters management functions of councils to new regional entities. If the reforms proceed, the role of Council in managing three waters infrastructure could be significantly changed.

Ngā tino Priorities

The priorities of Goal 4: An eco city are:

1. He kauanuanu, he hapahapai i te mauri o te awa o Manawatū

Respect and enhance the mauri of the Manawatū River
2. He mahitahi ki te hāpori ki te whakaiti i te tukutanga o te waro

Work with the community to reduce carbon emissions
3. He whakahaumanu i te kanorau koiora māori

Regenerate native biodiversity

4. He whakapau pūtea ki ngā momo pūnahanga e whakamarohitia ai, e whakapūmautia ai te taiao

Invest in infrastructure that services to protect, enhance and preserve the environment

5. He whakamahi i te mana ā-ture o te Kaunihera me ana kaupapahere kia toitū ai te whanaketanga o te tāone i te wātonu, ā, haere ake nei

Use Council's legislative powers and policies to ensure urban development is sustainable now and into the future

6. He whakaako i te hāpori, mātua rā ko ngā kaupupuri whare, ki te whaihua o te whakapau moni kia hoahoaina ai he whare toitū, whare kākāriki hoki

Educate the community, in particular, property owners, on the benefits of investing in sustainable building design and green buildings

7. He whakaatu i te hautūtanga me te mahi tika, mā te whakawhanake me te whakatinana i tētahi mahere taiao toitū mō te Kaunihera me ōna takunetanga, taiwhanga anō hoki

Demonstrate leadership and best practice by developing and implementing an environmental sustainability plan for the Council, Council-run events, and facilities

Te take o te mahere Purpose of the plan

The 10-Year Plan levels of service for this plan are:

- Council provides stormwater services to protect buildings from inundation from flooding in major events
- Council provides wastewater services for the safe collection, treatment and disposal of the city's wastewater
- Council provides water services for the provision of safe and readily available water

Ngā hononga ki mahere kē Links with other plans

The actions in this Plan also contribute to the achievement of the City growth plan, and the priorities 'Create and enable opportunities for employment and growth' and 'Provide infrastructure to enable growth and a transport system that links people and opportunities'.

Te mahitahi me Rangitāne o Manawatū Rangitāne o Manawatū partnership

Council will work in partnership with Rangitāne o Manawatū and:

- collaborate with Rangitāne o Manawatū on the wastewater Best Practicable Option review [note – this will expand to include other iwi as the selection of the preferred option progresses]
- collaborate on urban waterway improvement projects
- Rangitānenuiarawa¹ is reflected in the city's approach to water management

These commitments will guide the implementation of all aspects of this plan.

Ngā puka Kaunihera e whai wāhi mai ana ki tēnei mahere Council documents that contribute to this plan

The implementation of this plan is shaped by these Council-adopted documents:

- Asset Management Plans – Stormwater, Wastewater and Water Supply
- Dam Safety Policy
- Pressure Sewer Systems Policy
- Stormwater Bylaw
- Trade waste Bylaw
- Turitea Reserve Management Plan
- Wastewater Bylaw
- Water Conservation Management Plan
- Water Supply Bylaw

Te ine i te angitutanga Measures of success

Council will monitor these measures of success and report on these through the City Dashboards:

- A regional resource consent for wastewater discharge is lodged by June 2022
- The wastewater network has the capacity to function without failure in significant rainfall events
- Safe drinking water
- District Plan is updated to address stormwater detention, water sensitive design and restrict impervious surface by June 2024
- City-wide stormwater discharges are consented by Horizons Regional Council by June 2024

¹ Rangitānenuiarawa is the Rangitāne expression of kaitiakitanga, or customary authority and guardianship, and affirms their customary leadership in ensuring the health and regeneration of their tribal rohe.



Kupu whakataki

Introduction

The purpose of this chapter is for wastewater to be well managed, enhance the mauri of the Manawatū River and avoid adverse effects on the environment.

Kei hea tātou i tēnei wā?

Where are we now?

- As a member of the Manawatū River Leaders Accord, Council recognises its role in improving the health and mauri of the Manawatū River.
- Council has brought forward its wastewater resource consent review by five years to look at how the city can contribute to improving the health and mauri of the Manawatū River. A new resource consent must be lodged with Horizons Regional Council by June 2022.
- Council has an integrated district-wide wastewater network.
- A Pressure Sewer Policy has been developed to be implemented in dedicated zones within Council's network.
- Wastewater from the city and its associated villages are treated at and discharged from the Totara Road Wastewater Treatment Plant.
- The Wastewater Treatment Plant is fully compliant with its existing resource consent requirements.
- Rural properties are self-serviced for wastewater.
- Significant parts of the existing wastewater network are at capacity during major wet weather events, due to stormwater entering the network through damaged pipes and illegal discharges, for example runoff from roofs being misdirected into wastewater pipes instead of stormwater pipes.
- Wastewater reticulation renewals and condition assessments are sufficient to keep up with current budgets, but a greater level of funding will be required to fully grasp the asset condition and renew critical parts of the network.
- A city-wide wastewater network model has been developed. Trade waste discharge monitoring and control of trade waste discharges is being carried out by Council. An online monitoring system has been commissioned to assist trade waste customers to monitor their flow, discharge quality and invoicing.
- The Wastewater Treatment Plant is still performing well, but infrastructure is reaching its end of reasonable life and needs to be renewed.
- The wastewater treatment plant still needs to be maintained and kept reliable to maintain level of service until the Best Practicable Option (BPO) decision has been finalised.
- Council has commissioned cultural impact assessments from Rangitāne o Manawatū to inform decision making on infrastructure projects, such as the Ashhurst Wastewater Treatment Plant Review.
- There is a 100% user pays charge for trade waste consent monitoring, inspection, treatment and conveyance costs.

He aha ngā hiahia hei whakatutuki? What do we want to achieve?

- Wastewater has a lesser impact on the health and mauri of the Manawatū River.
- Rangitāne o Manawatū have opportunities for early involvement in all wastewater projects and initiatives.
- Council understands impact of flows and loads from large trade waste discharges.
- Council's renewal planning and investment in wastewater infrastructure is based on a better understanding of the asset condition.
- Stormwater infiltration and inflow into the wastewater network is reduced.
- Wastewater infrastructure is provided to support urban growth.
- Wastewater infrastructure has improved resilience to natural disasters and mechanical failures.

He aha ngā mahi e tutuki ai ngā hiahia? What actions will we take to get there?

Ongoing actions	Start date	Involvement of partners
Develop, maintain, upgrade and renew wastewater infrastructure in accordance with legislative requirements	All 2021/2022	
Initiate a city-wide stormwater infiltration and inflow reduction programme to identify defects in the wastewater network that are susceptible to stormwater entry and repair		
Identify and remedy sources of stormwater entry from private property to the wastewater network		
Introduce smart metering and online monitoring to provide more robust profiling of flows and loads from large trade waste discharges		
Gain a better understanding of the condition of wastewater infrastructure to create clear direction on upgrades and renewals required		
Renew and upgrade existing wastewater assets to maintain capacity and accommodate growth		
Investigate and carry out the seismic strengthening of wastewater infrastructure	2022/2023	
Operate and maintain pressure sewer systems vested in Council	2021/2022	
New and one-off actions	Completion date	Involvement of partners
Actively engage with Rangitāne and the community to identify a BPO for the treatment and disposal of the city's wastewater	2021/2022	
Complete the review of the Trade Waste Bylaw	2021/2022	
Lodge resource consent application for future discharge of the wastewater treatment plant	2021/2022	



Kupu whakataki Introduction

The provision of drinking water is an important public service. Unsafe drinking water can have negative effects on public health, economic wellbeing and the natural environment. The purpose of this chapter is for water supplies to be safe and readily available. Water services will protect, enhance and preserve the environment.

Kei hea tātou i tēnei wā? Where are we now?

- The Government is implementing a package of reforms to the three waters regulatory system, including the establishment of Taumata Arowai, the new Water Services Regulator. The service delivery model for water supply is likely to change in future.
- Council owns and operates the infrastructure required to collect, treat and carry water within a defined water supply area. Water collection infrastructure consists of two dams at Turitea Reserve, 21 bores and pump stations, and 14 reservoirs. The Turitea Water Treatment Plant treats water collected in the dams.
- Water is generally readily available in Palmerston North, and treatment capacity is adequate to meet current and immediately foreseeable demands. However, dry summers have led to a need to conserve water for months at a time to ensure residents and businesses have enough water for consumption and sanitation.
- Long-term the sustainable yield from the Turitea catchment will decline. This will lead to an increased reliance on bore supplies.

- As in all cities, Palmerston North's infrastructure is ageing. In recent years other councils have faced failures of critical water systems.
- A 2019 review of Council's three waters assets concluded that there is a lack of understanding of the condition and capacity of the pipe networks.
- Water New Zealand records from 2015 to 2018 show that average daily residential water consumption in Palmerston North has steadily declined.
- In 2018 the average daily water consumption in Palmerston North was 191.6 litres per person per day. This was below the national average daily residential water consumption of 306.1 litres.
- Council's obligations as the city's drinking water supplier are currently regulated by the Health Act 1956 and the New Zealand Drinking Water Standards. Recent amendments to the Health Act mean more emphasis on water safety and a significant change in expectations for managing drinking water supplies. This will have flow-on effects for both water supply infrastructure and operations.
- Water Safety Plans (WSP) are required to be reviewed and updated every five years. The WSP for the Palmerston North supply was updated in 2020.
- The city needs to be able to bounce back quickly from a significant natural disaster, with water an essential need for residents and businesses. Some assets have already been renewed or upgraded, and others will need to be.
- Most residential users of water pay a targeted rate. The targeted rate is intended to cover infrastructure and use costs. Non-residential customers are metered.
- Water discolouration is more frequent in Ashhurst than other communities, and Bunnythorpe water has higher turbidity than desired.

He aha ngā hiahia hei whakatutuki? What do we want to achieve?

- Water supplies are safe and secure, and Council meets the most recent legislative requirements for water safety.
- Water is conserved to ensure water supplies are sustainable into the future and wastewater flow is reduced.
- Water supply is delivery is efficient and cost-effective.
- Water supply infrastructure has improved resilience to natural disasters and mechanical failures.
- Water is available at the necessary flow rate for firefighting.
- Council’s renewal planning and investment in water supply infrastructure is based on a better understanding of the asset condition.
- Renewal programmes reduce the risk of unforeseen treatment and network failures.
- Water supply infrastructure is provided to support urban growth.
- Rangitāne o Manawatū have opportunities for early involvement in all water supply projects and initiatives.
- Rangitānenuiarawa is reflected in the city’s approach to water management.

He aha ngā mahi e tutuki ai ngā hiahia? What actions will we take to get there?

Ongoing actions	Start date	Involvement of partners
Develop, maintain, upgrade and renew water infrastructure in accordance with legislative requirements	2021/2022	
Ensure all Council water supplies have approved Water Safety Plans in place		
Use smart technology to optimise costs and identify sources that cost less to produce water		
Provide adequate water supply to provide for urban growth		
Meter industrial and commercial water users		
Provide education to all ages, with a focus on schools, about water supply and water conservation		
New and one-off actions	Completion date	Involvement of partners
Complete the review of the Water Supply Bylaw	2021/2022	
Investigate the costs and benefits of reducing water pressure	2023/2024	
Use smart metering to accurately profile water use		Lifelines Advisory Group
Increase the resilience of key water supply assets to emergency and seismic events		
Reinforce the trunk main network across the city		
Review the Water Conservation Management Plan		
Investigate and promote domestic water-saving and storage solutions		
Extend Palmerston North’s reticulated water supply to Bunnythorpe and Longburn supplies		
Investigate connecting Ashhurst water supply to Palmerston North supplies		
Gain a better understanding of the condition of water supply infrastructure to create clear direction on upgrades and renewals required		
Complete the renewal of the Ashhurst rising main		
Renew and upgrade water supply infrastructure to address identified water quality and contamination risks		
Strengthen processes and policies around the issuing, construction and commissioning of all new water supply service connections		
Upgrade hardware and software systems for real-time water quality monitoring		
Upgrade water mains to meet levels of service for firefighting flows		
Investigate the costs and benefits of reducing water pressure		Lifelines Advisory Group
Use smart metering to accurately profile water use		
Increase the resilience of key water supply assets to emergency and seismic events		



Kupu whakataki Introduction

More urban development has increased the amount and speed of rainwater that goes into urban waterways. This means there are greater peak flow rates and more soils and other contaminants going into the river system.

Horizons Regional Council is the lead agency for managing flood hazards, such as flooding from the Manawatū River or Mangaone Stream. The Council manages localised stormwater ponding issues and drains. The purpose of this chapter is for stormwater to be well managed and planned for city growth.

Kei hea tātou i tēnei wā? Where are we now?

- Council is working with Horizons Regional Council to measure the impact of urban run-off on the Manawatū, as part of developing a consistent regional approach to stormwater management.
- Intensification of development in the existing urban area and more urban development on the fringe of the city will generate even more stormwater for pipes and streams to cope with, which may trigger expensive upgrades if current levels of service are to be maintained.
- Climate change is expected to bring higher intensity rainfall events, moreover, which will increase the frequency of both nuisance flooding on roads and properties and the flooding of habitable dwellings. Ponding and surface flooding are apparent in parts of the city during significant and high intensity rain events. Infrastructure upgrades are being made progressively to address this.
- Water sensitive design is mandatory in new industrial and residential growth areas under the District Plan. There are no specific controls or standards that are applicable to existing brownfield or infill developments.
- The City is serviced by a range of engineered stormwater facilities, including culverts, drains and stormwater detention areas. Natural waterways also play a significant role in stormwater management, particularly in rural settings.
- City-wide stormwater modelling has been completed. Modelling data is being used to develop a Stormwater Management Framework, which will identify engineering solutions to reduce flood risk and improve water quality.
- Open channel stormwater facilities are largely treated as conveyance corridors with some connectivity via walkways.
- An active programme of work is in place to improve the connectivity and performance of the existing stormwater pipe network.
- Council has recently tried to take a more naturalised approach to managing stormwater. This is apparent in Norton Park, where a trial wetland has been established, as well as the nearby Edwards Pit Park, where wetlands have been developed to reduce pollution, illegal dumping, and damage to critical assets and habitats. There are otherwise very few functioning wetlands in the City.
- Secondary flow paths are often compromised by urban development, where they are not in the road corridor.
- Urban waterways are discontinuous through the City and interrupted by short piped sections and private property ownership, which makes access for maintenance difficult.
- Urban waterways have limited aquatic biodiversity, due to poor water quality, limited riparian vegetation, low base flow and because they are managed as stormwater conveyance corridors rather than waterways.
- The Rangitāne o Manawatū Claims Settlement Act 2016 places specific requirements on Council to inform and consult Rangitāne o Manawatū on developments adjacent to the Manawatū River and its tributaries. Rangitāne o Manawatū are informing Council's understanding of the sensitive sites located along waterways to ensure development is undertaken in a culturally appropriate matter.
- A cultural monitoring framework, Hei Manga Ora, is being developed to ensure appropriate management of waterways.

He aha ngā hiahia hei whakatutuki? What do we want to achieve?

- Adopt a Stormwater Management Framework to identify engineering solutions to reduce flood risk and improve water quality.
- Rangitānenuiarawa is reflected in the city's approach to stormwater management.
- Council understands community values around urban waterways.
- Urban waterways and wetlands are thriving ecosystems.
- Stormwater services are resilient enough to cope with the effects of climate change.
- The District Plan has the necessary provisions to regulate stormwater for all development across the city.
- Major stormwater mitigation projects protect the city from localised flooding.
- Rangitāne o Manawatū have opportunities for early involvement in all water supply projects and initiatives.
- There is an approved city-wide resource consent from Horizons Regional Council for managing stormwater.
- Biodiversity treatments are undertaken on all urban waterways.
- Council's renewal planning and investment in water supply infrastructure is based on a better understanding of the asset condition.

He aha ngā mahi e tutuki ai ngā hiahia? What actions will we take to get there?

Ongoing actions	Start date	Involvement of partners
Develop, maintain, upgrade and renew stormwater infrastructure in accordance with legislative requirements	All 2021/2022	
Establish and deliver a city-wide flood mitigation programme		Horizons Regional Council
Council-managed urban waterways and wetlands are enhanced and protected through planting and active management		Horizons Regional Council, Rangitāne o Manawatū, Environment Network Manawatū
Upgrade stormwater infrastructure to manage capacity, accommodate growth and reduce ponding		
Encourage water-sensitive design approaches to development and a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds		
Implement Hei Manga Ora – a cultural monitoring framework for freshwater management		Rangitāne o Manawatū
Provide education to increase awareness of sustainability in three waters		
New and one-off actions	Completion date	Involvement of partners
Complete the review of the Stormwater Drainage Bylaw	2021/2022	
Update the District Plan to require stormwater detention, restrict impervious surface cover and consideration of water sensitive design	2023/2024	Rangitāne o Manawatū, Developers
Lodge a city-wide ('global') resource consent for urban stormwater discharges with Horizons Regional Council		Rangitāne o Manawatū, Horizons Regional Council
Stormwater discharges and urban stream environments are assessed to better understand the impacts of urban stormwater on the environment		
Increase the resilience of key stormwater assets to emergency and seismic events		
Establish drainage reserves for urban streams in private ownership		
Gain a better understanding of the condition of stormwater infrastructure to create clear direction on upgrades and renewals required		



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Our north arrow draws directly from “North” in our city’s name. An upward arrow perfectly symbolises our ambition for a city that’s smarter, continually growing and evolving, innovating, collaborating and finding enlightened ways to work with nature.