



Eco City Strategy

Palmerston North

SMALL CITY BENEFITS, BIG CITY AMBITION

2018

Te Kaunihera o Papaioea
Palmerston North City Council



Vision

PALMERSTON NORTH 2028

Palmerston North is the heart of the Manawatū region within central New Zealand.

We are a small city with a lot to offer, and we're ambitious about where we're going.

Palmerston North 2028 has been informed by our communities and is a statement of the future we want for our city. This document identifies the vision and strategic goals for Palmerston North from now to 2028.



Palmerston North

SMALL CITY BENEFITS, BIG CITY AMBITION

Palmerston North celebrates its small city advantages – great quality of life, strong community and easy, affordable access to services. We are a city that embraces our people and the Rangitāne iwi heritage and diversity, offering vibrancy and big city excitement without the hassle and cost. We are arty, with a creative spirit, and a healthy and active city with excellent options for sports and recreation.

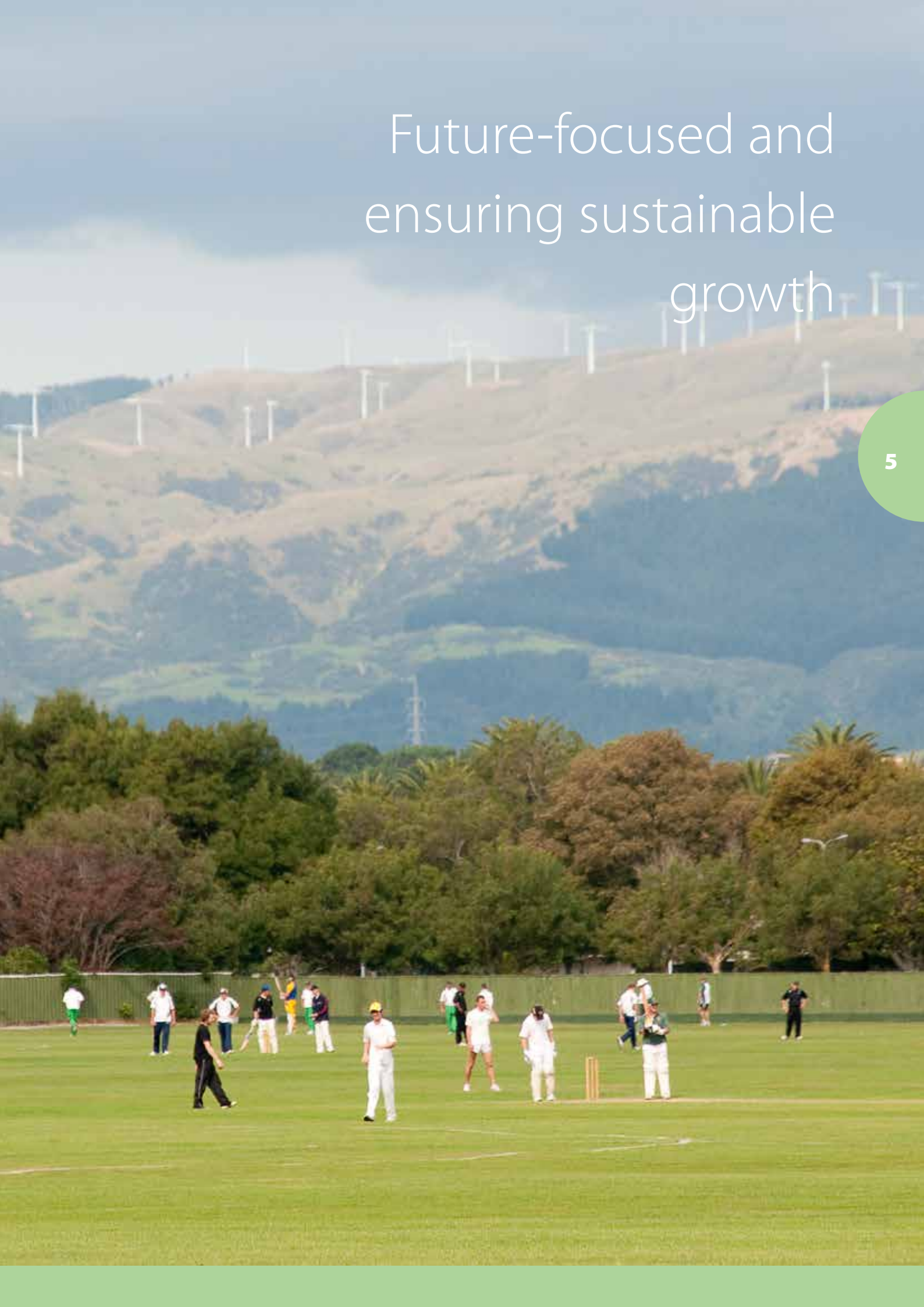
We take seriously our responsibility to manage and renew for the future the city infrastructure our community relies on for its health and wellbeing.

As the economic and cultural centre of our region, we are ambitious, innovative and agile, and quickly adapt to change in order to create prosperity. We are connected and use the talents of our whole community to work as one team. We are a future-focused city that enhances its environment and ensures growth is sustainable.

To fulfil the vision of *small city benefits, big city ambition*, Council has adopted five goals.

This strategy has been developed to achieve
Goal 4: An eco city.

Future-focused and ensuring sustainable growth





Goal 4: An eco city

Our aspiration

We want a future-focused city that plans for and cares about the future, enhancing its natural and built environment. Our city will realise the benefits to society from creating clean energy, lowering carbon emissions and reducing our ecological footprint.

Our goals

Palmerston North will have a sustainable future and a reduced ecological footprint through effective planning of infrastructure and the protection, maintenance and enhancement of our natural and built environment. We are working towards our city becoming a low carbon economy.

Our approach

We value the natural environment and the interconnectedness of our natural assets. Our response to changes in our economy, society and climate must leave our environment in a better place. One way we can do this is to grow our city in a sustainable way. For example:

- planning to accommodate growth through intensification rather than urban sprawl
- incorporating requirements for environmentally sensitive design in our public spaces and buildings
- supporting the infrastructure for electric vehicles and active transport
- actively promoting and creating renewable, clean energy
- actively pursuing new and sustainable economies that have low impact on our environment
- acknowledge Te Ao Māori practices for the Rangitāne iwi, especially around the protection and preservation of our environment.

While advocacy and education are important, so too are increasing our biodiversity and protecting our high-class soils from urban development. We will take the lead in demonstrating good practice while harnessing our natural assets, including protecting a plentiful and safe water supply.

Target: 25% reduction in CO₂e emissions in Palmerston North by 2028



1. Introduction

The Ministry for the Environment advises that “climate change is the biggest environmental challenge of our time. Each one of us needs to work on ways to cut our emissions, adapt to the effects of climate change, and become more resilient to the changes that are coming. Climate change is already affecting our climate. It is likely to impact our agriculture and other climate-sensitive industries, our native ecosystems, infrastructure, health and biosecurity, as well as having broader social and economic impacts.”

While the challenge of mitigating climate change is a global one, Palmerston North needs to play its part in reducing emissions. The task of lowering the city’s carbon footprint forces everybody to identify inefficiencies, and improve the way they do things. Council’s goal, therefore, is to reduce waste, improve energy efficiency, make better use of trees and natural systems, and take advantage of the opportunities offered by new technologies like LED lighting and electric vehicles. In all these efforts, Council need to support businesses and the community to bring them along with the Council.

The Manawatū River is the heart of the city and region, and the mauri of the river is a direct reflection of people’s values. The city is increasingly turning to the waterways it once turned its back on, only to find that those waterways are not in the same state as they were before. Council is a signatory to the Manawatū River Leaders Accord along with other councils, iwi, businesses and community groups. In the accord, Council made a series of commitments towards improving the mauri of the Manawatū River.

While the Manawatū River is the heart, through its tributaries it is also the veins of the city and region. Its veins criss-cross the city, and connect the city with its neighbours, the mountain ranges, and the sea. The Council can use these veins to strengthen the connection between the city and the Turitea Valley, the city’s drinking water reserve. Over the last decade, Council has invested heavily in predator control in the Turitea, which has resulted in rapid regeneration of the bush, and a tenfold increase in native birdlife. Planting the gullies and streams between the city and the Turitea not only improves water quality, it also provides corridors for native birds to move between the ranges and city. The work has the exciting potential to transform the way residents and visitors experience the city, by planting native bird-friendly-species within the urban setting, and controlling and eliminating predators such as rats, possums and stoats.



2. Priorities

PRIORITY 1: RESPECT AND ENHANCE THE MAURI OF THE MANAWATŪ RIVER

The Manawatū River forms the geographic, recreational, and spiritual heart of the city and the wider region. The Manawatū River is of great historical, cultural, spiritual and traditional significance to Rangitāne. The name 'Manawatū' refers to a pūrākau (story) of Hau, a significant ancestor in the region, whose heart stood still when he beheld the beauty of the river. Now, unfortunately, the river rarely inspires such a response.

The river's flow connects the people of Norsewood to those of Foxton, linking all of us who live between. Consequently, the mauri of the river cannot be restored by any single agency or group. Instead it requires a coordinated approach involving public, private and iwi groups from across the region.

The Manawatū River Leaders Accord sets out the commitment to improving the mauri of the river. Council will collaborate

with mana whenua to develop the best practical option for wastewater discharge, plant river banks; improve the city's stormwater network, re-establish wetlands, improve public access to the river, and undertake cultural monitoring of the quality of waterways.

PRIORITY 2: WORK WITH THE COMMUNITY TO REDUCE CARBON EMISSIONS

Recognising the threat that climate change poses, there is a growing international commitment from states, cities, and the private sector to reduce carbon emissions. Agreements such as the 2015 Paris Accord and the New Zealand Local Government Leaders' Climate Change Declaration, of which Palmerston North is a signatory, provide formal mechanisms to report on emissions and share practical knowledge. Palmerston North has a moral duty to reduce its emissions. A lack of action will not only contribute to further climate change, but risk the city missing out on the current wave of progress, and be forced to play catch up as international agreements strengthen. Alternatively, Palmerston North has an opportunity to be a leader, and reap the benefits of being a global leader exporting knowledge around the world.

High carbon emissions are a key indicator of inefficiencies and unsustainability. By identifying and systematically reducing emissions, the city will reduce electricity, natural gas, and fuel usage, and reduce waste. Reducing emissions will, in many cases, reduce costs, while improving air quality and other environmental outcomes. Understanding the emissions profile of the city is a critical first step to inform plans for emission reduction throughout Palmerston North.

Council will lead by example and take big steps towards reducing its emissions. It will partner with other public

institutions to share knowledge, and to trial emission reduction measures that target areas where there are the greatest gains to be made. Council will develop the local market for low carbon technology and products, as well as expertise in systematically reducing emissions, which can then be used to help support the wider community. Lastly, it will provide infrastructure that enables the rest of the city to make low carbon choices, particularly for transport, and support the provision of fast-charging stations for electric vehicles.

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PRIORITY 3: REGENERATE NATIVE BIODIVERSITY

Conservation

Council wants to build on its success in boosting native birdlife in the Turitea Reserve, and partner with Rangitāne to potentially reintroduce locally extinct species that have survived elsewhere.

The reserve is one of the most well-preserved podocarp forests in the Lower North Island. Monitoring shows that since Council began extensive predator control a decade ago, native birdlife has increased tenfold within the reserve. The operation has reduced predators in the area to very low numbers, allowing many previously struggling flora and fauna to rebound. Kākā

from Pukaha/Mt Bruce have been spotted in the reserve recently, and it is possible they could re-establish themselves there. If the predator control programme was discontinued, predators from adjacent areas would swiftly invade, undoing what has been achieved.

Green corridors

Connecting the reservoir of birds in the Turitea with the city through a series of 'green corridors' will encourage more birds to come down to the city.

This could radically change the experience of visiting the Esplanade and the river, and be a substantial drawcard for the city. Eventually the link could be extended along the Manawātū River pathway to Te Apiti and the Ruahine Ranges, and provide the missing link from Wellington to East Cape – a corridor along the Central Range.

Council will build on previous work by extending the green corridors programme into neighbouring gullies and streams

to create a network of links from the Turitea to the Manawātū River and into the city. Planting in these gullies will also provide auxiliary benefits such as reducing erosion, improving water quality, providing habitats for eels and other native fish, and improving amenity. Council will need to plant more trees along streets and in city parks to ensure native birds, once down in the city, have adequate year-round food sources.

Community involvement

Council will continue to support the work of Palmerston North's very active environmental community by facilitating greater coordination and cooperation between groups. Council encourages native plantings where practical and provides guidance on which plants are most appropriate in different contexts.

Following the announcement of the 'Predator Free New Zealand' vision, Council has become involved with several trial projects supporting Rangitāne and the wider community to be more involved with controlling introduced predators. Initial results have been highly encouraging, but more work needs to be done

to grow the nascent trapping network into a city-wide project. Spreading protection for the native wildlife across Palmerston North is a key part of Council's vision to have thriving native biodiversity within the city.

PRIORITY 4: INVEST IN INFRASTRUCTURE THAT SERVES TO PROTECT, ENHANCE AND PRESERVE THE ENVIRONMENT

Wastewater treatment

As a member of the Manawatū River Leaders Accord, Council recognises its role in improving the health and mauri of the Manawatū River. Palmerston North and its surrounding villages discharge treated wastewater into the Manawatū River via the Totara Road Wastewater Treatment Plant. Over recent years, efforts have been made to reduce the environmental impact of wastewater by following regional policy and complying with resource consents. The number of council wastewater discharge points into the river has reduced to one.

Council has also 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. The upcoming review will need to identify ways to improve the city's wastewater treatment, particularly when the river level is low. Council will need to actively engage with the community in the lead-up to this process to help identify possible future treatment options.

Due to infiltration from the stormwater network, significant parts of the city's wastewater network are at capacity during major wet weather events. The primary causes of this are damaged infrastructure and private property owners either

accidentally, or deliberately, diverting their stormwater into the wastewater network. Renewals will need to be prioritised to target critical trunk sewers. The leakiest parts of the network also need to be targeted to exclude stormwater infiltration.

New growth areas may need a different approach to managing wastewater. Extending the network as it currently exists in parts of the city could create problems at the treatment plant. New pressurised sewer technologies could provide cost-effective reticulated services with increased storage control.

Water supply

While Palmerston North has a generally good water supply, in recent years it has been affected by summer droughts. The city has an integrated water supply network, with water sourced primarily from the Turitea Dam and supplemented by bores across the city. The quality of Palmerston North water is very high and was awarded New Zealand's 'Best Water' in 2016. Water is generally readily available and capacity is adequate to service current and immediately foreseeable demands. However, summertime droughts 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.

Council will need to increase capacity to deal with potential seismic event failures or mechanical faults. Seismic strengthening of key assets, such as the Turitea Dam, is also needed to reduce the risk of major asset failure and reduced service in a significant earthquake event. Resilience should also be increased by providing a second pipeline across the Manawatū River and by strengthening the main trunk network across the city.

The costs and benefits of reducing water pressure need to be weighed up. Reducing water pressure could prevent significant wastage of water and reduce maintenance costs for water infrastructure. However, the community may not accept lower water pressure and there may be implications for commercial fire system compliance.

Council will investigate domestic water saving and storage solutions to identify potential water demand savings and wastewater flow reduction. District-wide resilience will be improved by connecting Palmerston North's water supplies to its satellite communities.

Like many cities, Palmerston North has aging infrastructure. Some assets have already been renewed or upgraded, and many others will need to be. Seismic resilience assessments are underway to investigate the city's earthquake risk. The city needs to be able to bounce back quickly from a significant natural disaster, with water an essential need for residents and businesses.

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Water-sensitive design / Green infrastructure

The impact of wastewater on the city is well understood as a result of monitoring for resource consents, and Council has a plan in place to mitigate these effects. However, the impact of stormwater run-off is less well understood. Council needs to raise the profile and quality of the city's urban streams, acknowledging their cultural significance as tributaries of the Manawatū River.

Development has increased the amount and speed of rainwater that goes into urban waterways, increasing both peak flow rates and the soils and other contaminants going directly into the river system. This is because buildings, paving and roads divert water that would have otherwise drained into the soil and recharged groundwater. 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. Developing a map of the city's catchments will help in developing a stormwater management plan for the city.

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. Council needs to explore alternative approaches to ensure there is a more sustainable response to growth. Water-sensitive design approaches to development and a wider use of tools such as water tanks, green roofs, swales, rain gardens and detention ponds will all help.

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. Development in high-risk areas with inadequate protection or floor-level separation should be avoided.

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. Council will look for more opportunities to transform drainage corridors and urban waterways, to improve biodiversity, and more sustainably manage stormwater.

PRIORITY 5: USE COUNCIL'S LEGISLATIVE POWERS AND POLICIES TO ENSURE URBAN DEVELOPMENT IS SUSTAINABLE NOW AND INTO THE FUTURE

District Plan

The District Plan is the framework for development in the city. It can encourage and discourage certain approaches to new development in order to promote sustainable use of the city's natural and physical resources. One of the key outcomes the District Plan is seeking to achieve is a compact city. The existing built form makes it easier to achieve this than in other more sprawling cities such as Hamilton or Tauranga. Compact cities depend less on cars, use less energy, and can leverage off existing infrastructure for intensification or redevelopment.

In recent years Council has enabled more renewable energy generation, including micro-scale wind turbines. The District Plan review has also promoted energy-efficient design for major new commercial buildings and multi-unit residential developments. More trees have been recognised for their ecological and heritage value and formally protected. As more urban intensification occurs, it will be important to identify other trees for protection to ensure the city's urban canopy is safeguarded for future generations.

Other development controls, such as site coverage, are provided by the District Plan. These are usually to control amenity, but also have environmental benefits by providing space for vegetation and for rainwater to be able to drain naturally into the ground. Council will investigate requirements for other site-

specific sustainability measures, such as rainwater tanks, solar panels, and insulation.

Water-sensitive design principles have been introduced into the District Plan. They are currently required in the North East Industrial Zone and the Whakarongo Residential Area, and are held up as a best-practice approach for future development. Water-sensitive design principles should be applied to other parts of the city when the District Plan is reviewed or new growth areas are proposed.

Residential accommodation, such as apartments in the city centre, need to provide adequate storage for bicycles. This approach is intended to encourage more sustainable transport options for inner-city residents. Similar approaches should be investigated for commercial activities in the city centre.

Development contributions

Council's Development Contributions Policy is designed to recover the costs of network infrastructure required for new development. Council will investigate discounting or waiving development contributions to incentivise alternative approaches to building design.

This could include the use of green rooves to reduce or eliminate stormwater discharges to network infrastructure. It could also mean reduced contributions for water supply if

buildings are fitted with water collection tanks. One difficulty with this approach is that development contributions are often paid at the time of subdivision, before buildings are designed.

Waste minimisation

To meet its obligations under the Waste Minimisation Act 2008 to "promote effective and efficient waste management and minimisation", Council must develop a Waste Management and Minimisation Plan (WMMP).

Council's WMMP is currently being reviewed, and will be informed by a city wide waste assessment that analyses the flows of waste in the city and identifies where the most significant reductions can be made, allowing us to prioritise interventions.

Recent progress has been made in moving towards zero waste events in the city. Council may mandate zero waste events in future once there is a system in place to make it easy for event organisers. Council has been having initial success in using a 'behaviour change' approach to encourage people to minimise

and properly dispose of waste, and this programme should be expanded significantly in future. Council has also been working with strategic partners such as iwi, the hospital and Massey University to trial programmes diverting waste, particularly food waste, from landfill.

PRIORITY 6: EDUCATE THE COMMUNITY, IN PARTICULAR PROPERTY OWNERS, ON THE BENEFITS OF INVESTING IN SUSTAINABLE BUILDING DESIGN AND GREEN BUILDINGS

For the city to become more sustainable, residents need to adopt more sustainable practices. However, Council recognises that, on its own, an 'information intensive' programme (involving flyers, billboards, advertisements, or workshops) does not produce significant changes in behaviour. Instead, Council must systematically identify and reduce the barriers to change, while also considering raising the barriers to undesirable behaviour.

One example of this approach having been successful is zero waste events. Council worked with the organiser of the Street Feast to make the recycling/composting bins prominent and easily identifiable in the event space. At the same time, it reduced the number of landfill bins available, and used consistent packaging to make it easy for patrons to place all of their compostable plates and other waste in the correct bins. The usually high cross-contamination rates were reduced, and opportunities opened up to productively use waste that would previously be sent to landfill.

Other ways Council helps encourage sustainable practices are through direct education. Council works with Horizons Regional Council to deliver the Enviroschools programme in schools and early childhood centres, to reduce waste and energy use, and to engage with biodiversity. Council also supports the EcoDesign Advisor (EDA) programme, in which an experienced council officer delivers advice to residents about how they can make their homes warmer and drier while also reducing their power bills and environmental footprint.

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PRIORITY 7: DEMONSTRATE LEADERSHIP AND BEST PRACTICE BY DEVELOPING AND IMPLEMENTING AN ENVIRONMENTAL SUSTAINABILITY PLAN FOR THE COUNCIL, COUNCIL-RUN EVENTS, AND FACILITIES

For the city to be successful and sustainable, Council must lead the way in sustainability. It will develop a culture of sustainability within the organisation so that it becomes business as usual. Recognising the value that mātauranga Māori can add to sustainability efforts, Council will progressively add a greater degree of local tikanga into its everyday activities.

Energy

Council monitors its energy use by collecting data from each building, facility and vehicle, which is agglomerated each month.

This monitoring identifies the largest energy users and which areas need to be targeted first. Council has begun a programme to conduct a comprehensive energy audit on each facility, starting with the facilities that use the greatest energy. These audits produce a list of energy and cost-saving recommendations, which are then implemented.

Council need not wait until each facility is audited before making improvements. It can make significant energy efficiency gains in numerous areas that will result in significant savings.

Council will undertake a separate programme of replacing obsolete lighting with newer LEDs, while still ensuring lighting standards are met. Other opportunities include investigating whether the use of solar technology might allow some smaller facilities to go off-grid, saving line charges. Council is also committed to constructing energy-efficient buildings, saving costs over the longer term.

Waste

A 2009 Council report estimated that Council facilities sent 840 tonnes of waste to landfill each year. As much as 88% of its office waste could be diverted from landfill and recycled or composted.

At Palmerston North parks, 35% of the waste stream is recyclable paper and glass, while 36% could be composted. Dealing with this waste is often a challenge, because the waste is typically co-mingled and difficult to dispose of.

A behaviour-change approach is needed to make it easier to recycle and compost and more difficult to dispose to landfill. However, even composting or recycling takes energy and time, and much waste could be avoided altogether by implementing a low-waste procurement policy.

Travel

Council will comprehensively review its travel requirements.

This will allow the fleet to be rationalised so Council has only as many vehicles as it needs, and that those vehicles are fit for purpose and electric wherever possible. More local trips will be taken using the Council's electric bike fleet, rather than cars.

Council will implement its workplace travel plan, encouraging more staff to walk, cycle, carpool, and take public transport for their commute to work.

3. Strategic themes

Council has identified four themes that will be strongly reflected in all of the plans developed to deliver on the strategies:



SMART CITY PRACTICES

- Monitor packages to track energy use, carbon emissions, and water quality.
- Promote a 'citizen science' approach, giving a platform for residents to meaningfully contribute to biodiversity monitoring.
- New technology such as LED lighting and electric vehicles to improve efficiency, reduce carbon emissions and improve air quality.
- Better use of waste, including composting organic matter, rather than sending valuable resources to landfill.

SUSTAINABLE PRACTICES

- Greater use of water-sensitive design, guided by the citywide stormwater management plan.
- Riparian planting of gullies and urban streams to promote biodiversity, and improve water quality and amenity.
- Monitoring and systematic carbon emission reductions.



IWI PARTNERSHIPS

- Council acknowledges the special relationship Māori have with the land, forests, rivers and sea.
- Working together in partnership with Rangitāne o Manawatū to restore the mauri of the waterways and forests.
- Engaging proactively and collaboratively to ensure positive outcomes where Rangitāne values are embodied.



STRATEGIC PARTNERSHIPS

- Manawatū River Accord.
- Horizons Regional Council has a major role to play in environmental health within the city and region, and is a key partner in Council's efforts.
- Engage with businesses on opportunities to invest in the city's biodiversity while supporting businesses to reduce emissions and improve sustainability.
- Work with the Mid-Central District Health Board, Massey University, and other public institutions to share knowledge and strengthen the market for sustainable procurement options.
- Other strategy partners include central government agencies such as the Ministry for the Environment, and Department of Conservation, and Linton Army. The Council will also work closely with the city's environmental community.

4. Plans

Plans to deliver on the Eco City Strategy:

- The **Three Waters Plan** will improve the mauri of the Manawatū River and its tributaries, while safeguarding drinking water supply. It will focus on mitigating the effects of urban stormwater and investigating the best practical option for reducing the impact of wastewater discharge.
- The **Waste Plan** will detail how Council intends to reduce waste within its own operation and support waste minimisation in the wider community.
- The **Energy Plan** will outline how Council is to become more energy-efficient. It will include energy audits of Council facilities and implementation of the resulting recommendations. It will also detail how Council intends to make more immediate energy-efficiency improvements.
- The **Biodiversity Plan** will detail how the ranges will be connected with the city by green corridors alongside city streams, and how native wildlife will be protected within the urban area. Planting of the stream banks will also go some way towards improving water quality.
- The **Sustainable Practices Plan** will detail Council's efforts to foster more sustainable practices within and outside Council, including efforts to reduce waste and encourage more sustainable buildings.

5. Success measures

Each of the three-year plans will have specific measures for each action specified. This strategy will also be monitored, so Council can see what progress is being made towards the goal of an eco city. Council will monitor a set of measures to gauge the strategy outcomes:

CO₂e emissions

CO₂e emissions for PNCC

Water quality in Manawatū and urban streams, including cultural monitoring

Volume of potable water consumed per person

Gross volume of waste produce by Council and city

Total energy use (including electricity and natural gas) across Council facilities

Household energy use

Number of sustainable buildings

Air quality

Number of trees planted

Area of wetlands protected

Level of community involvement in environmental activities such as tree planting events

Proportion of city waste diverted from landfill





Palmerston North City Council

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