



**WHANGANUI  
DISTRICT COUNCIL**  
Te Kaunihera a Rohe o Whanganui

**REFERENCES**

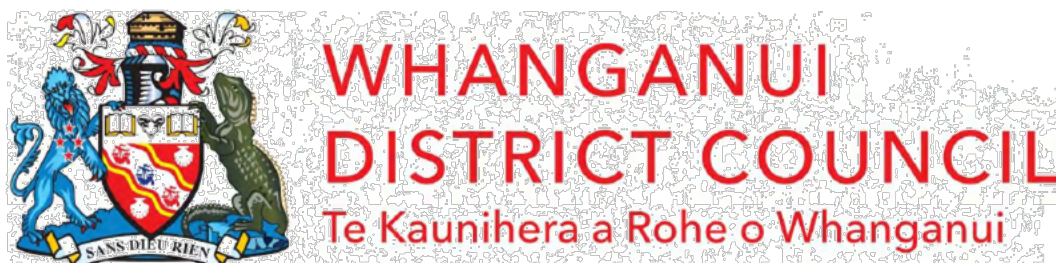
**Council Meeting  
Under Separate Cover  
8 December 2020**



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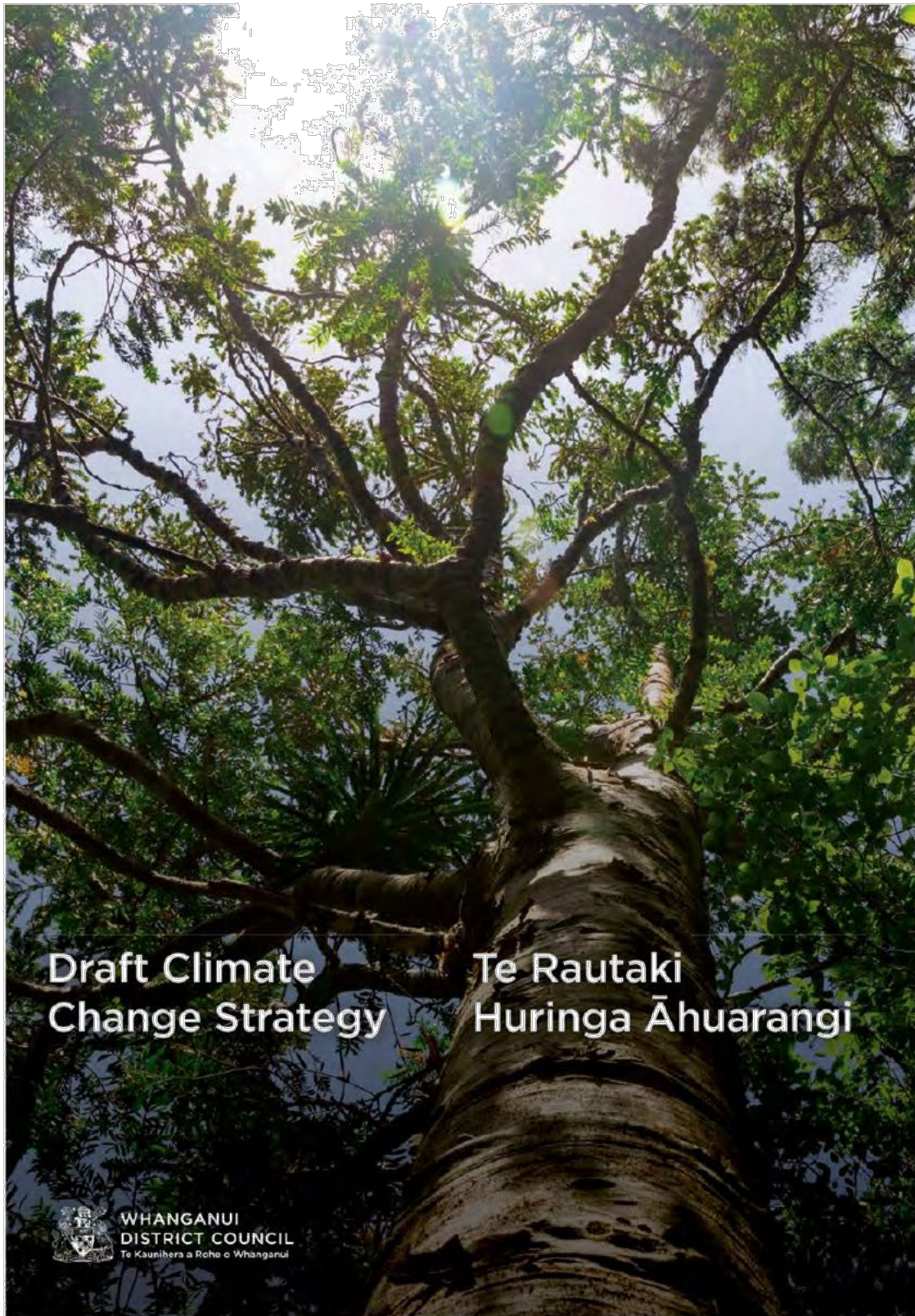
**Strategy and Finance Committee Meeting**

**17 November 2020**

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## Introduction

## He tūwheratana kōrero

This strategy tells a story of the New Zealand European and Māori world views coming together to tackle climate change in a uniquely Whanganui way. It is about human activity and changing the way we live to reduce our impact on the planet – traversing social, cultural, environmental and economic realms.

From a Whanganui Iwi perspective, interconnectivity with our environs is evident within our traditional narratives and innate values, recognised at law through Te Awa Tupua Settlement Act 2017. Those innate values – Tupua Te Kawa – guide the way in which decisions are made to protect and enhance the health and wellbeing of our people, Te Awa Tupua and the environment. Tupua Te Kawa advances four kawa or values that underpin an indigenous natural law and value system, binding people to place. In the context of climate change, these kawa might be expressed or understood as follows:

### ***Ko te Awa te mātapuna o te ora***

Our Awa and environs sustains us with life and natural resources, and these must be protected from the impacts of climate change so that current and future generations may be nourished.

### ***E rere kau mai te Awa nui, mai i te Kāhui Maunga ki Tangaroa***

Our Awa and environs, including physical and spiritual elements, are indivisible, and climate change responses must be cognisant of the holistic impact on all realms of wellbeing.

### ***Ko au te Awa, ko te Awa ko au***

There is an inalienable connection between people, the Awa and the environment, and we have a responsibility to change the way we live to reinforce and strengthen this connection.

### ***Ngā manga iti, ngā manga nui, e honohono kau ana, ka tupu hei Awa Tupua***

Co-ordinated effort on climate change is required across all communities and authorities, given that our Awa and environs are integral to our worldview and lives.

### Strategy purpose

### Te kaupapa

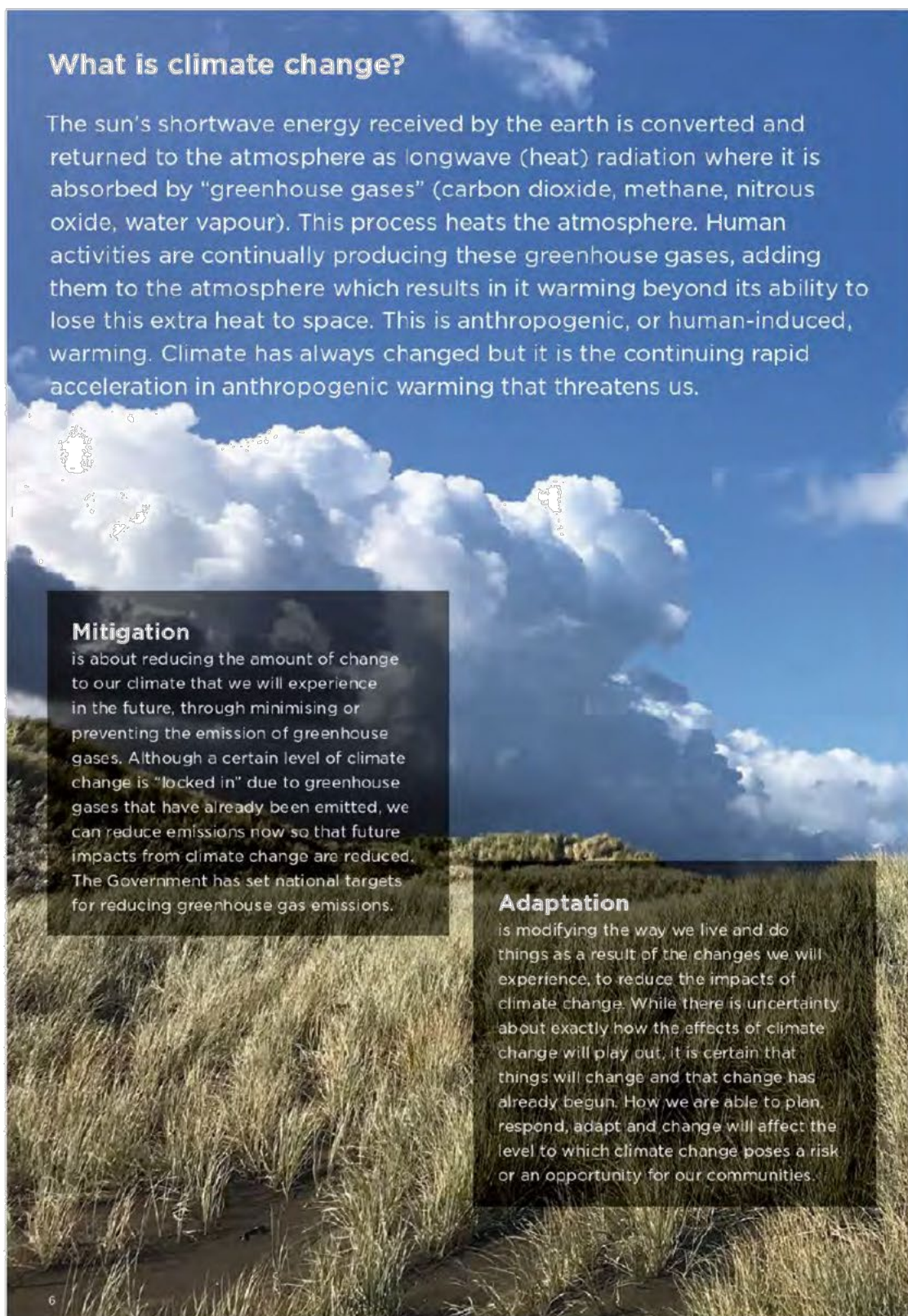
The purpose of this strategy is to plot a course for action to both mitigate, and adapt to, climate change and to provide a framework for collaboration across the Whanganui District and beyond among neighbouring councils,

tangata whenua, iwi partners, central government, non-government organisations, private industry, education, our communities and people.



Strategy purpose Te kaupapa

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### What is climate change?

The sun's shortwave energy received by the earth is converted and returned to the atmosphere as longwave (heat) radiation where it is absorbed by "greenhouse gases" (carbon dioxide, methane, nitrous oxide, water vapour). This process heats the atmosphere. Human activities are continually producing these greenhouse gases, adding them to the atmosphere which results in it warming beyond its ability to lose this extra heat to space. This is anthropogenic, or human-induced, warming. Climate has always changed but it is the continuing rapid acceleration in anthropogenic warming that threatens us.

**Mitigation**  
is about reducing the amount of change to our climate that we will experience in the future, through minimising or preventing the emission of greenhouse gases. Although a certain level of climate change is "locked in" due to greenhouse gases that have already been emitted, we can reduce emissions now so that future impacts from climate change are reduced. The Government has set national targets for reducing greenhouse gas emissions.

**Adaptation**  
is modifying the way we live and do things as a result of the changes we will experience, to reduce the impacts of climate change. While there is uncertainty about exactly how the effects of climate change will play out, it is certain that things will change and that change has already begun. How we are able to plan, respond, adapt and change will affect the level to which climate change poses a risk or an opportunity for our communities.

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The infographic is set against a background of tall grasses under a blue sky. It is divided into two main sections. The top section features a white icon of an eye with radiating lines, symbolizing vision. Below this icon, the text is split into two columns: 'Vision' on the left and 'Te wawata' on the right. The bottom section features a white icon of a winding path leading to a location pin, symbolizing a mission or journey. Below this icon, the text is split into two columns: 'Mission' on the left and 'Te aronga' on the right. All text is in white, and the background of the infographic is a dark blue gradient.

**Vision**  
We live in harmony with the environment to ensure quality of life for all living things

**Te wawata**  
Ko au te taiao, ko te taiao ko au

**Mission**  
We will take appropriate action to adapt activity to withstand the impacts of our changing climate and play our part in reaching greenhouse gas emission reduction targets

**Te aronga**  
Ka wānanga, ka whakarite, ā, ka huri ngā mahi, i runga i te manawanui ki te taiao

**Values**

**Ngā kaupapa**

All whakataukī / whakatauākī are underpinned by features of Whanganui nature and our environment.

**Working together**  
*Kia mahi tahi*

We will work collectively on climate change solutions

*Pūpungia te kākaho kia mangungu, e kore e whati*

One kākaho reed is easily snapped, but bound tightly many kākaho reeds will possess unyielding strength



**Leadership**  
*Kia tof te mana*

We will enable leadership at all levels on climate change and will lead by example

*Kia whakapurua ki te remu o te huia (nā Te Māreikura Hori Enoka)*

Hold fast to the tail feather of the huia, the symbol of a leader

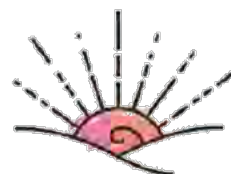


**Responsibility**  
*Kia tikiro whānui*

We will have the environment and future generations at heart in our decision-making

*He ao āpōpō, he ao tea (nā Dr Whakaari Rangitākūkū Metekīngi)*

Tomorrow holds a bright future

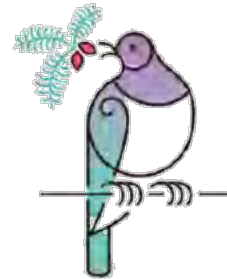


**Education**  
**Kia mātau**

We are committed to learning and sharing our knowledge with others

*Ko te manu e kai ana i te miro, nōna te ngahere; ko te manu e kai ana i te mātauranga, nōna te ao*  
**(nā Te Kere Ngātaierua)**

The bird who eats from the miro tree owns the forest; the bird who eats of the tree of knowledge owns the world

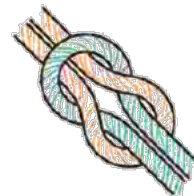


**Positive connection**  
**Kia torokaha**

We will build positive connections throughout our community and look for opportunities

*Whiria te taunoka*  
**(nā Hōri Kīngi Te Anaua)**

Tie peace to this shrub



**Resilience**  
**Kia manawa nui**

We will be agile and build capacity to recover from difficulties

*Kei te hunga ririki kei te huti te toko o ōnei rangi* **(nā Te Ope Whanarere)**

The young are to pull and push the bargepole of today's vessel



**Effectiveness & affordability**  
**Kia whai hua**

We will live within our means and make the most of every opportunity

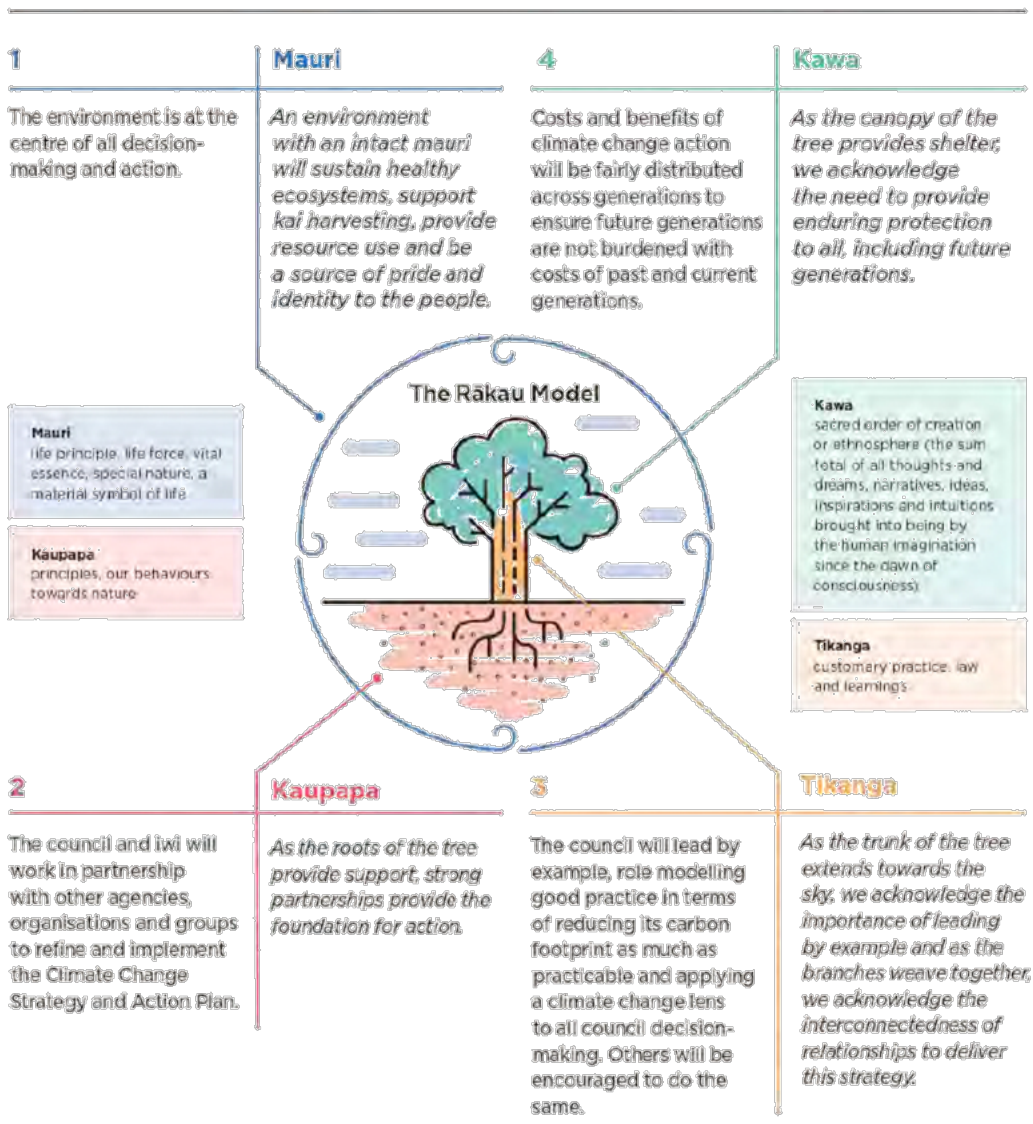
*Tēnei au te morikau nei*

I am still fashioning this log



Principles

Ngā mātāpono



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Draft Climate Change Strategy Te Raukōwhiri Huringa Ahuarangi



## Strategic context

## Te horopaki

There are three main international policies that guide the council's climate change adaptation and mitigation work.

### The international context

#### 1

**The United Nations Framework Convention and Climate Change (UNFCCC):** an international environmental treaty with the objective to:

*“Stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic<sup>1</sup> interference with the climate system.”*

The UNFCCC was adopted by more than 185 countries, including New Zealand, at the Rio Earth Summit in 1992.

#### 2

**The Kyoto Protocol:** the international treaty signed in 1997 that extends the 1992 UNFCCC and commits state parties to reduce greenhouse gas emissions based on the scientific consensus that:

- Global warming is occurring
- It's extremely likely that human-emitted CO<sub>2</sub> emissions have predominantly caused it.

#### 3

**The Paris Agreement:** an agreement within the UNFCCC signed in Paris in 2016. The aim of the Paris agreement is:

- To hold the increase in the global average temperature at well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels
- To increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production
- To make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

<sup>1</sup> Anthropogenic = resulting from or produced by human activities, as defined by the Intergovernmental Panel on Climate Change (IPCC).

**The national context**

The Climate Change Response (Zero Carbon) Amendment Act 2019 has set a domestic greenhouse gas emission reduction target for New Zealand to:

- Reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
- Reduce emissions of biogenic methane to 24-47% below 2017 levels by 2050, including to 10% below 2017 levels by 2030.

It has also:

- Established a system of emission budgets to act as stepping stones towards the long-term target
- Required the government to develop and implement policies for climate change adaptation and mitigation
- Establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals.

The Climate Change Response (Zero Carbon) Amendment Act 2019 required preparation of a National Climate Change Response Assessment (NCCRA) no later than one year after the start of the act (November 2019). This was produced in August 2020. The NCCRA has a critical role to play in providing the best available evidence and assessment to decision-makers, to support a planned approach to climate change risks and opportunities. The act requires the Minister for Climate Change to prepare a National Adaptation Plan (NAP) in response to the NCCRA. This will be published before mid-2022. The NAP will define both the Government's objectives for adapting to climate change and how the Government will meet those objectives.

The Resource Management Act 1991 (RMA) is another piece of key legislation. Under the RMA, local government is required to consider the effects of a changing climate on communities, and to incorporate climate change into existing frameworks, plans, projects and standard decision-making procedures.

Local government's roles and responsibilities are affected by climate change. A climate change perspective is now integrated into activities such as flood management, water resources, planning, building regulations and transport.

**Local context**



**Greenhouse gas emissions**

During 2019, Whanganui emitted gross 906,613 tCO<sub>2</sub>e and net 779,736 tCO<sub>2</sub>e emissions. The population in 2019 was about 47,000 people, resulting in per capita gross emissions of 19.3 tCO<sub>2</sub>e/person.

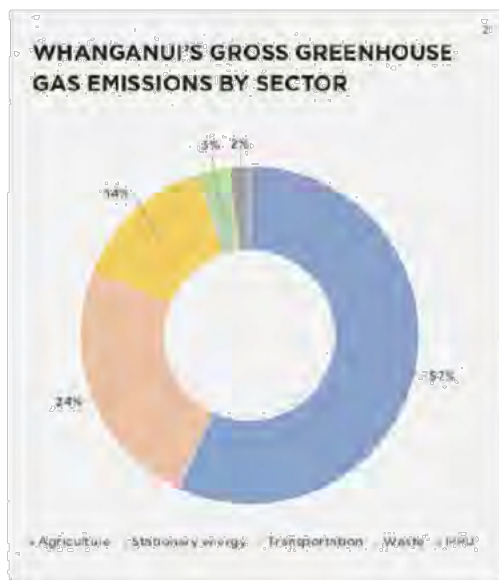
tCO<sub>2</sub>e stands for tonnes (t) of carbon dioxide (CO<sub>2</sub>) equivalent (e).

Agricultural emissions are the largest contributor to Whanganui's greenhouse gas emissions (57%), with 99% of agricultural emissions coming from livestock. Sheep are farmed in the largest numbers across the area, accounting for 86% of farmed livestock and 54% of agricultural emissions.

Cattle make up 13% of farmed livestock and 44% of agricultural emissions. Enteric fermentation (animal's digestive processes) from cattle and sheep produced 82% of Whanganui's agricultural emissions and 47% of the district's gross emissions.

This is followed by transport, with 99% attributed to petrol and diesel used for road transport.

Stationery Energy was the third largest emitting sector (electricity consumption was the cause of 26% of stationary energy emissions, natural gas (61%), petrol and diesel consumption (3%). Residential accounts for 15% stationary energy emissions, Commercial 17%, Industrial 60% and the remaining 8% for other e.g. generators and motors.



**WHANGANUI DISTRICT'S CARBON FOOTPRINT**

Gross (excluding forestry)

**779,736 tCO<sub>2</sub>e**

NET (including forestry)

**779,736 tCO<sub>2</sub>e**

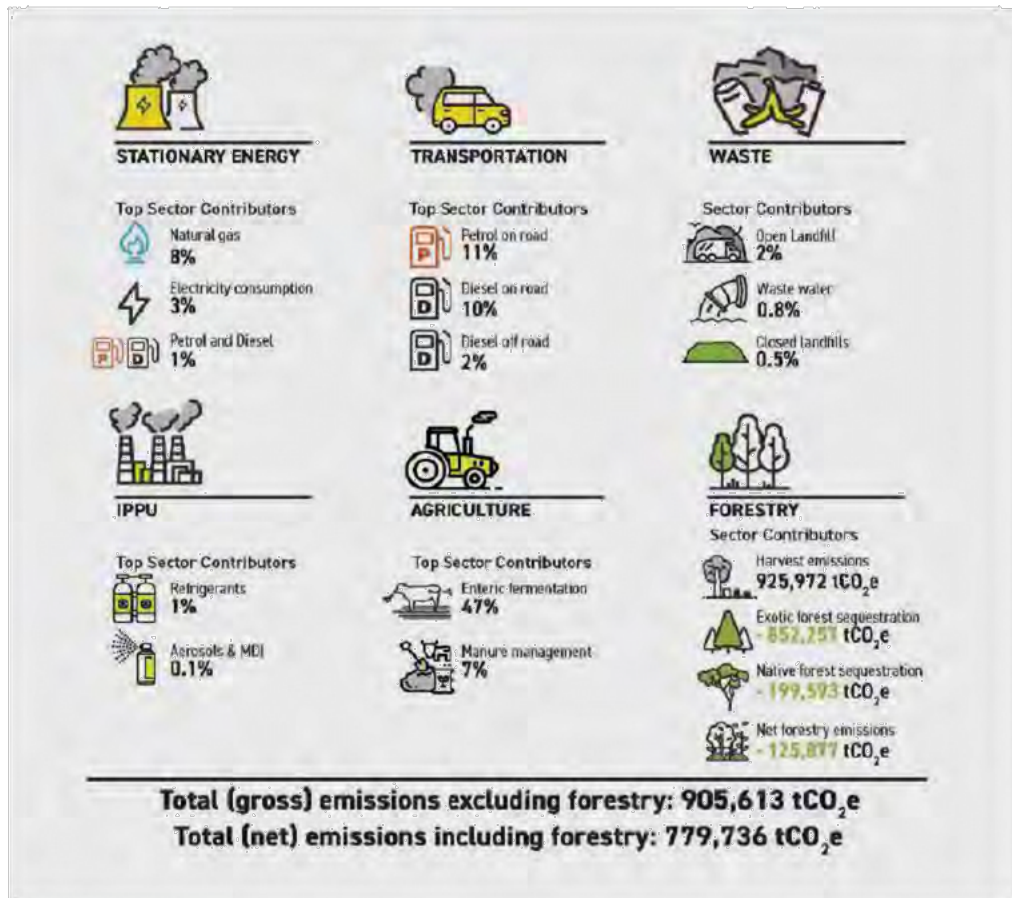
Gross emissions per capita

**19.3 tCO<sub>2</sub>e**

Gross emissions per hectare

**3.8 tCO<sub>2</sub>e**

2 The Industrial Processes and Product Use (IPPU) sector includes emissions associated with the consumption of GHGs for refrigerants, foam blowing, fire extinguishers, aerosols, metered-dose inhalers and sulphur hexafluoride for electrical insulation and equipment production.



The above infographic is based on a model that has been developed using credible, independent information, but may contain distortions. Any model is based on assumptions, so the information is valid but may differ from other models. The information becomes more accurate when you look at a much bigger area than just the Whanganui District. However, it provides a useful benchmark for measuring change and progress over time.

Sequestration in agriculture is still largely unknown at this stage, and further work is required to measure this accurately.

### Likely Impacts of climate change for Whanganui

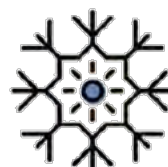
#### Temperature



- To rise by 0.8°C by 2031-2050
- To rise by 1.8°C by 2081-2100



- More hot days >25°C
- Greatest warming in summer/autumn

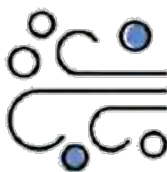


- Earlier spring melt
- Fewer frost days

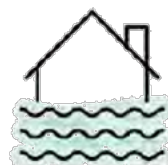
#### Rainfall



- Wetter conditions with annual precipitation up 1% and winter rainfall up 6% by 2031-2050
- Winter rainfall up 11% by 2081-2100

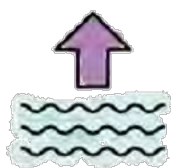


- The frequency and magnitude of storm-related events will increase

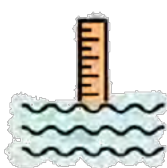


- Increased high country erosion
- Increased flooding risks and river sedimentation

#### Planning for sea level rise



- Increased coastal erosion and flooding



- A rise of by 0.3-1.0m by 2100
- 0.2-0.5m by 2060

**Climate change targets**

**Eke panuku, eke tangaroa**

These interim district mitigation targets have been set to be consistent with national and regional targets. These will be modified as information and our knowledge improves. It is intended that a district carbon model is developed so we may better understand the impact of potential mitigation actions and to inform the setting of targets.

Both the adaptation targets and the council mitigation targets will be determined upon the completion of base research.

Minimum interim district mitigation target	Reduce net carbon emissions for the district to zero (excluding biogenic CO <sub>2</sub> ) by 2050
	Reduce net carbon (excluding biogenic CO <sub>2</sub> ) by 30% by 2030
	Reduce emissions of biogenic methane to 24-27% below 2017 levels by 2050
	Reduce emissions of biogenic methane to 10% below 2017 levels by 2030
District adaptation target	Target for development of district adaptation plans is to be determined upon completion of the Regional Climate Change Risk Assessment
Council mitigation target	Targets to be set once the organisational carbon footprint has been calculated and a low carbon roadmap developed

## Strategic priorities

## Ngā pou

The key priorities for the council are both in adaptation and in leading by example – role-modelling good practice in terms of reducing its own carbon footprint.

In terms of adaptation and becoming more resilient to the impacts of climate change, the priority is to complete the Regional Climate Change Risk Assessment, which will inform where our vulnerabilities lie and the development of district adaptation plans.

The council also has a role to play in encouraging everyone in the community to play their part in addressing climate change.

Four focus areas for our community have been identified to guide the first stage of the journey to support central government's efforts toward a low carbon and resilient New Zealand:

1. Transportation – Eke waka
2. Building energy and urban form –  
Te hiko / hanaga whare
3. Agriculture – Ahu whenua
4. Leadership and collaboration – Mahi tāhi

While agriculture is the biggest emitting sector, the sector has significantly improved productivity over the past 30 years with reductions in numbers of sheep and beef cattle but increases in dairy cattle since 1990. There is also significant work happening nationally, and within the agricultural sectors, to reduce on-farm agricultural greenhouse gas emissions and adapt to climate change. Under the He Waka Eke Noa Primary Sector Climate Action Partnership<sup>3</sup>, by 2025 all farmers and growers will include climate change mitigation and adaptation in their farm business and environment plans, and calculate their net greenhouse gas emissions. It is also important to consider the importance of farming to economic activity and social cohesion outcomes, and to be cognisant of the Paris Agreement which highlights the need to work towards low greenhouse gas emissions development in a manner that does not threaten food production.

<sup>3</sup> Apiculture NZ, Beef + Lamb NZ, Dairy NZ, DCANZ, Deer Industry NZ, MFE, FCMA, FAR, Federated Farmers, Horticulture NZ, Irrigation NZ, MIA, MPI

## Goals

## Ngā whāinga

These goals are numbered for referencing purposes only and do not indicate any particular priority – all goals are considered important. Inherent in each of these goals is the concept of mauri, or the life force of all living things that we seek to maintain or enhance using kaitiaki<sup>4</sup> practices and mātuaranga<sup>5</sup> Māori.

### Goals

### Whāinga

- |   |  |
|---|--|
| 1. The Whanganui District becomes more resilient to the impacts of climate change.  | <i>Ka manawanui te rohe o Whanganui ki ngā pēhitanga o te hurihuringa āhuarangi</i>            |
| 2. The council leads by example, role modelling good practice and reducing its own carbon footprint.                      | <i>Ka whakatauiratia e te Kaunihera ngā mahi tika ki te whakaiti i tōna ake tapuwae waro</i>   |
| 3. Everyone plays their part in addressing climate change.  | <i>Mā tātau katoa e whai tikanga i ngā hurihuringa āhuarangi</i>                               |
| 4. The council demonstrates leadership and works collaboratively with partners to reduce our district's carbon footprint. | <i>Ka mahi tahi te Kaunihera me ētehi atu ki te whakaiti i te tapuwae waro o tō tātau rohe</i> |

<sup>4</sup> Guardianship, practice of looking after the environment.  
<sup>5</sup> Traditional knowledge.





## Objectives

### GOAL 1

The Whanganui District becomes more resilient to the impacts of climate change.

*Ka inanawanui te rohe o Whanganui ki ngā pāhitanga o te hurihuringa āhuarangi*

#### Objectives:

- 1.1. **Manage district adaptation requirements to address risks to vulnerable communities and at-risk infrastructure**

### GOAL 2

The council leads by example, role modelling good practice and reducing its own carbon footprint.

*Ka whakatauiratia e te Kaunihera ngā mahi tika ki te whakaiti i tōna ake tapuwae waro*

#### Objectives:

- 2.1. **Develop a low carbon roadmap for the council**
- 2.2. **Build the capacity and capability of the council to manage climate change action**
- 2.3. **Encourage sustainable practices from council suppliers through Council activity and processes**

### GOAL 3

Everyone plays their part in addressing climate change.

*Mā tātau katoa e whai tikanga i ngā hurihuringa āhuarangi*

#### Objectives:

- 3.1. **Encourage everyone to take action and do their part to reduce the impacts of climate change**

### GOAL 4

Council demonstrates leadership and works collaboratively with partners to reduce our district's carbon footprint.

*Ko mahi tahi te Kaunihera me ātahi atu ki te whakaiti i te tapuwae waro o tō tātau rohe*

#### Objectives:

- 4.1. **Transportation | Eke waka**
  - 4.1.1. Encourage the transition to lower emissions sustainable fuel alternatives
  - 4.1.2. Promote travel efficiency and behaviour change
  - 4.1.3. Enable and encourage active transport options
  - 4.1.4. Work in partnership with the regional council to improve public transport services to make it a more attractive travel option

**4.2. Building energy and urban form**

**Te hiko / hanga whare**

- 4.2.1. Encourage energy efficiency and low carbon energy options for homes and other buildings
- 4.2.2. Reduce the carbon footprint of buildings which includes greenhouse gas emissions generated from construction materials, construction processes, construction waste disposal and disposal of the building when it has reached its end of life
- 4.2.3. Plan for growth in a way that promotes lower carbon, high amenity and a more compact urban form including the encouragement of collective housing models
- 4.2.4. Identify, understand and reduce climate change risk to existing buildings and infrastructure

**4.3. Agriculture | Ahu whenua**

- 4.3.1. Sustainable food production – food growing, processing, transporting, distributing, consuming and disposal is done sustainably
- 4.3.2. Look for opportunities to expand food-growing markets by taking advantage of climatic changes

- 4.3.3. Work together to share knowledge, educate and support change in the agricultural sector including kaitiaki practices and mātauranga Māori
- 4.3.4. Encourage sustainable farming practices that support productive and profitable farm outcomes

**4.4. Leadership and collaboration | Mahi tahi**

- 4.4.1. Develop a district carbon model to assist with setting emissions targets
- 4.4.2. Investigate barriers, provide information and educational resources to promote behavioural change and grow community knowledge and collective action
- 4.4.3. Utilise local government channels to advocate for change
- 4.4.4. Work collaboratively with local government, tangata whenua, Iwi, government agencies, sector groups and other stakeholders

A key role for the council is to provide leadership including education, promotion and advocacy activities and working collaboratively with partners and key sectors.

**Monitoring**

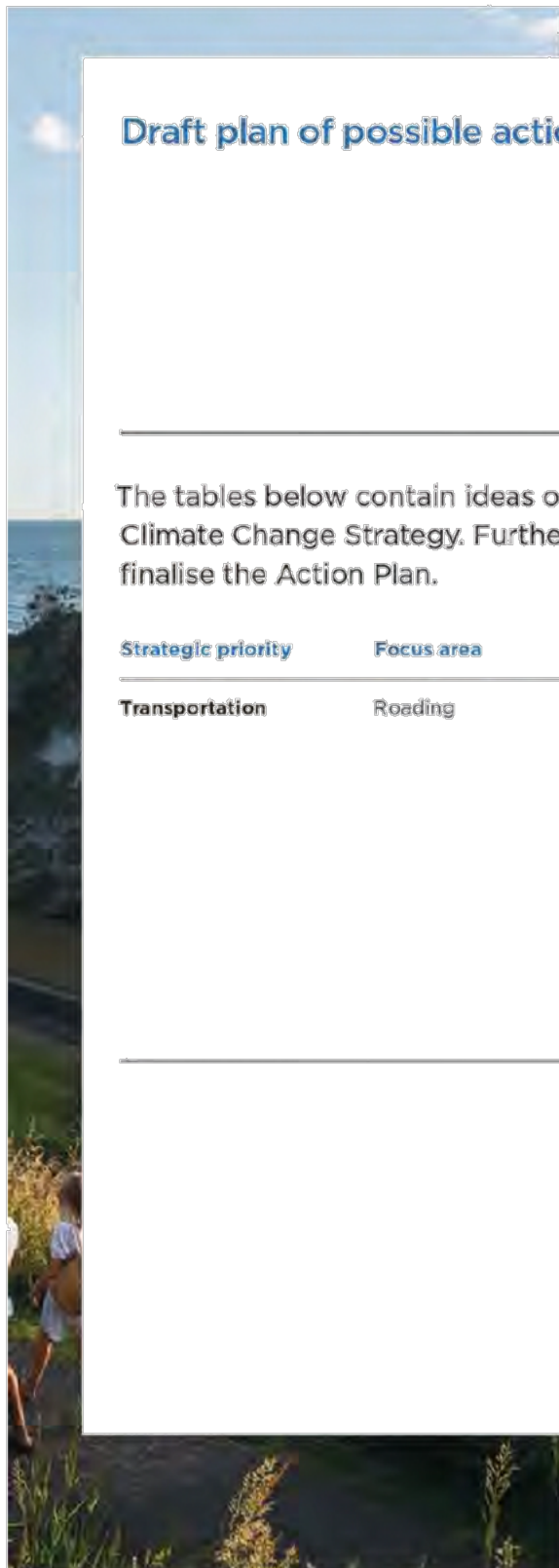
A set of indicators and measures will be developed to monitor progress towards the achievement of the goals and targets within this strategy.



### Draft plan of possible actions

The tables below contain ideas of possible actions to implement the Climate Change Strategy. Further work is required to refine, cost and finalise the Action Plan.

Strategic priority	Focus area	Initiatives
Transportation	Roading	<ul style="list-style-type: none"> <li>Investigate alternative fuel options, e.g. hydrogen</li> <li>Promote travel efficiency / behaviour change</li> <li>Enable and encourage active transport</li> <li>Work with Horizons Regional Council to improve public transport services</li> <li>Ensure sufficient EV charging infrastructure is available</li> <li>Encourage an increase in rail transport</li> <li>Manage climate change risks to existing transport infrastructure</li> </ul>



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<b>Buildings</b>	Energy efficiency	<ul style="list-style-type: none"> <li>Promote energy efficiency and low carbon energy options for homes and other buildings</li> <li>Encourage use of energy efficient lighting, appliances and heating</li> <li>Encourage uptake of solar energy</li> </ul>
	Location and density of development	<ul style="list-style-type: none"> <li>Develop a plan for growth that promotes lower carbon, high amenity and more compact urban form and reduced travel requirements</li> <li>Enable CBD living</li> <li>Support alternative, more collective housing models e.g. papakainga, the Delhi Village, etc.</li> <li>Plant more trees - develop green corridors/network - ensure the right tree is planted, in the right place, for the right purpose</li> <li>Review treatment of passive open spaces and alternatives to grass</li> <li>Identify, understand and reduce climate change risk to existing building and infrastructure, e.g. the riverfront</li> <li>Avoid building or raise floor levels in areas prone or likely to be at risk of inundation</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>Encourage circular<sup>6</sup> economies - production, use, re-use and recycling</li> <li>Promote and invest in waste reduction and reuse across the community and key sectors, e.g. the building and construction sector</li> </ul>

<sup>6</sup> Circular economies design out waste and pollution, keep products and materials in use, regenerate natural systems

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<b>Agriculture</b>	Food production	<ul style="list-style-type: none"> <li>• Develop a sustainable district food plan<sup>7</sup></li> <li>• Look for opportunities to expand food-growing markets to take advantage of climatic changes</li> </ul>
	Education, collaboration, research and planning	<ul style="list-style-type: none"> <li>• Work together to share knowledge and provide support for change</li> <li>• Acknowledge the kaitiaki practices and matauranga Māori of Māori landowners for farm management</li> <li>• Encourage farmers to understand their farm's carbon footprint and develop farm plans that consider mitigation, sequestration, adaptation and adverse events</li> <li>• Undertake research to identify sustainable water sources to support land-use change</li> <li>• Develop plans to drive sustainable, productive and profitable farm outcomes</li> <li>• Recognise the efforts of the agriculture sector and educate the wider population</li> </ul>
<b>Leadership and collaboration</b>	Information, education and promotion	<ul style="list-style-type: none"> <li>• Provide information and educational resources to grow community knowledge and collective action</li> <li>• Investigate barriers to, and support for sustainable building design and construction</li> <li>• Promote warm, dry homes – Home Energy Save programmes, Warmer Kiwi Homes Scheme</li> <li>• Sign up to Auckland Council's Future Fit programme (footprint tool, dashboard, communications, marketing and educational material)</li> <li>• Become a member of the Sustainable Living Trust which provides practical opportunities for people to learn</li> <li>• Promote behavioural and cultural change to create resilience, e.g. benefits of collective living, use of active and public transport</li> </ul>

<sup>7</sup> This covers all stages of keeping people fed including growing, processing, transporting, distributing, consuming and disposing of food.

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Strategic priority	Focus area	Initiatives
Whanganui District Council	Carbon footprint	<ul style="list-style-type: none"> <li>Undertake a baseline emissions inventory for the council</li> <li>Implement appropriate opportunities to increase carbon sinks in the Whanganui District</li> <li>Set emissions targets and develop a low carbon roadmap</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>Reduce waste</li> </ul>
	Energy efficiency	<ul style="list-style-type: none"> <li>Consider Green Star Building certification for new building projects</li> <li>Investigate conversion to solar energy for the council buildings</li> <li>Recognise energy efficiency ratings of houses and buildings on LIMs</li> <li>Consider the development of a pathway for eliminating use of fossil fuels for heating public buildings and facilities</li> </ul>
	Vehicle fleet	<ul style="list-style-type: none"> <li>Convert fleet cars to hybrid or electric vehicles</li> </ul>
	Travel	<ul style="list-style-type: none"> <li>Enable working remotely and use video conferencing instead of travelling to a meeting</li> </ul>
	Procurement	<ul style="list-style-type: none"> <li>Leverage purchasing power to promote circular economies</li> <li>Consider carbon emissions when awarding contracts</li> </ul>
	Infrastructure	<ul style="list-style-type: none"> <li>Consider using ISCA<sup>9</sup> rating scheme for evaluating Infrastructure sustainability across planning, design, construction and operational phases of infrastructure programmes, projects, networks and assets</li> </ul>
	Staff	<ul style="list-style-type: none"> <li>Appoint a Climate Change Officer to be a champion for climate change action, provide advisory, education, advocacy, research and monitoring services</li> <li>Provide appropriate training for regulatory staff to support change</li> </ul>

<sup>9</sup> ISCA - Infrastructure Sustainability Council of Australia



**Whanganui District Council**

Resilience

- Develop District Adaptation Plans

**What you can do about climate change**

**Actions**

**Reduce your electricity use**

Greenhouse gas emissions are produced when we use electricity and gas. New Zealand has a high level of renewable electricity production, but this is still supplemented by burning fossil fuels

- Switch off lights when not in use.
- Use LED lightbulbs
- Unplug electronics from the wall socket when they're not in use
- Run the dishwasher and the washing machine only when full
- Wash clothes in cold water and dry them outdoors when possible
- Try having shorter showers or shower before going to bed (there is less fossil fuelled electricity generation after 9pm)

**Shop at your local fruit and vegetable market or grow you own**

Help reduce greenhouse gas emissions from transport by using local ingredients. When you buy local food or products you are also helping your local economy.

- Plant your own vegetables and fruit trees. Containers are great if you are short of space.
- Buy local and in-season foods that haven't travelled long distances to reach you.

**Reduce, reuse and recycle**

All products and materials to be built, packaged, transported and sold. Reducing how much you buy is good for the environment and your wallet

**Reduce:**

- Buy only the food you need, and compost your kitchen scraps and garden waste.
- Buy products without any packaging whenever possible and always take your reusable bags to the supermarket
- Make the most of what you already have. Repairing products such as clothes means they don't have to be replaced so often.

**Reuse:**

- Swap your bottles and lunch containers for reusable ones
- Donate unwanted goods such as books, clothes and furniture to a charity shop

**Recycle:**

- Use recycling services and recycle bins

**Plant trees**

In New Zealand, forests offset 30% of our greenhouse gas emissions. A regenerating native forest can remove more than 8 tonnes of carbon dioxide per hectare per year from the atmosphere over its first 50 years

- Plant native trees on your property
- Get involved in a community forest restoration, dune care or coastal revegetation programme in your area

Coastal vegetation can reduce erosion. It can also reduce the impact of waves and floods

Trees provide shade which has a cooling effect in towns and cities. When placed around buildings they can cut electricity use for cooling in summer

**Conserve water**

Climate change is likely to have an impact on our water resources. Water supply may be altered due to changes in temperature and rainfall patterns, and water demand is likely to increase during summer months as temperatures increase

- Replace lawns with native plants
- Collect rainwater and use it to water the garden and for other household tasks that don't require drinking water
- When buying new household devices, consider how water-efficient they are

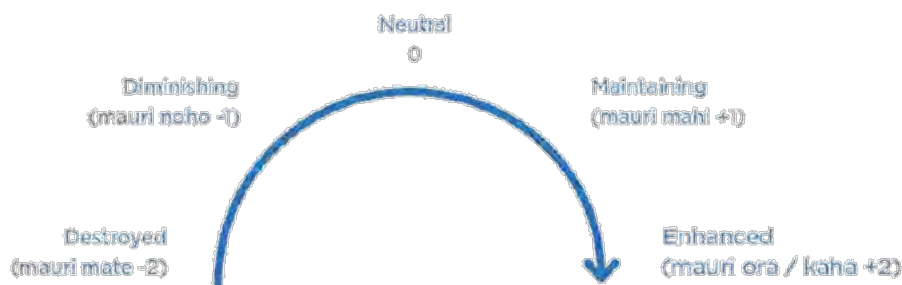
**Be aware of your emissions - drive and fly less**

- Know where your greenhouse gas emissions are coming from - measure your own emissions footprint
- Walk or cycle
- Use public transport
- Carpool with family or friends
- Work remotely and use video conferencing instead of travelling to a meeting
- Reduce the number of flights you take
- If you fly, pay to offset your emissions

**Building and cars**

- If you are building a house include balconies, shading and efficient cooling systems such as natural ventilation
- Use passive solar design and insulation.
- If you replace your car, consider an electric vehicle

### Appendix 1: The Mauri model



The Mauri model was developed as a framework, assessment method, and decision-making tool to integrate economic, social and cultural dimensions – regarded as subsets of the environment. It is based on the concept of mauri. As such, the tool demonstrates methods for understanding the interrelatedness or interconnectedness of all living things, and for measuring sustainability and human wellbeing.

The model's aim is to assist decision-making by helping understand how different activities impact on the intrinsic values of ecosystems. The resulting effect of activities and practices on the mauri will be seen as -2 destroyed; -1 diminishing; neutral; +1 maintaining; +2 enhanced.

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This document is printed on Eco100 Hi White certified carbon neutral recycled paper. We have also avoided the use of cropping in order to minimise wasted paper and ink.

Images:  
Cover photograph courtesy Jon Moore, Unsplash.  
Photograph on inside cover courtesy Lamp Studios.

For more information on Whanganui District Council  
climate change initiatives visit:  
[www.whanganui.govt.nz/climate-change](http://www.whanganui.govt.nz/climate-change)



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🐦 @WhanganuiDC

The infographic is set against a background of tall grasses under a blue sky. It is divided into two main sections. The top section features a white line-art icon of an eye with radiating lines. Below it, the word 'Vision' is written in bold, followed by the English text: 'We live in harmony with the environment to ensure quality of life for all living things'. To the right, the Māori text 'Te wawata' is written in bold, followed by 'Ko au te taiao, ko te taiao ko au'. The bottom section features a white line-art icon of a winding path leading to a location pin. Below it, the word 'Mission' is written in bold, followed by the English text: 'We will take appropriate action to adapt activity to withstand the impacts of our changing climate and play our part in reaching greenhouse gas emission reduction targets'. To the right, the Māori text 'Te aronga' is written in bold, followed by 'Ka wānanga, ka whakarite, ā, ka huri ngā mahi, i runga i te manawanui ki te taiao'.

**Values**

**Ngā kaupapa**

All whakataukī / whakatauākī are underpinned by features of Whanganui nature and our environment.

**Working together**  
*Kia mahi tahi*

We will work collectively on climate change solutions

*Pūpūngia te kākaho kia mangungu, e kore e whatī*

One kākaho reed is easily snapped, but bound tightly many kākaho reeds will possess unyielding strength



**Leadership**  
*Kia toi te mana*

We will enable leadership at all levels on climate change and will lead by example

*Kia whakapurua ki te remu o te huia (nā Te Māreikura Hori Enoka)*

Hold fast to the tail feather of the huia, the symbol of a leader

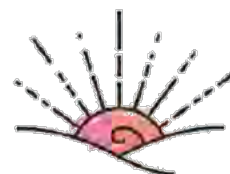


**Responsibility**  
*Kia titiro whānui*

We will have the environment and future generations at heart in our decision-making

*He ao āpōpō, he ao tea (nā Dr Whakaari Rangitāhākū Metekīngi)*

Tomorrow holds a bright future

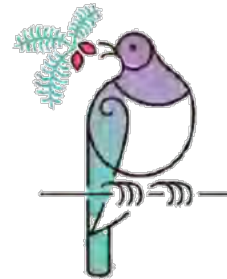


**Education**  
**Kia mātaua**

We are committed to learning and sharing our knowledge with others

*Ko te manu e kai ana i te miro, nōna te ngahere; ko te manu e kai ana i te mātauranga, nōna te ao*  
**(nā Te Kere Ngātāierua)**

The bird who eats from the miro tree owns the forest; the bird who eats of the tree of knowledge owns the world

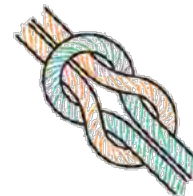


**Positive connection**  
**Kia torokaha**

We will build positive connections throughout our community and look for opportunities

*Whiria te taunoka*  
**(nā Hōri Kingi Te Anaua)**

Tie peace to this shrub



**Resilience**  
**Kia manawa nui**

We will be agile and build capacity to recover from difficulties

*Kei te hunga ririki kei te huti te toko o ēnei rangi* **(nā Te Ope Whanarere)**

The young are to pull and push the bargepole of today's vessel

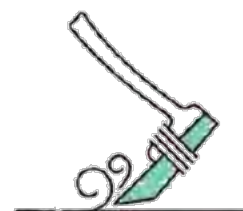


**Effectiveness & affordability**  
**Kia whai hua**

We will live within our means and make the most of every opportunity

*Tēnei au te morikau nei*

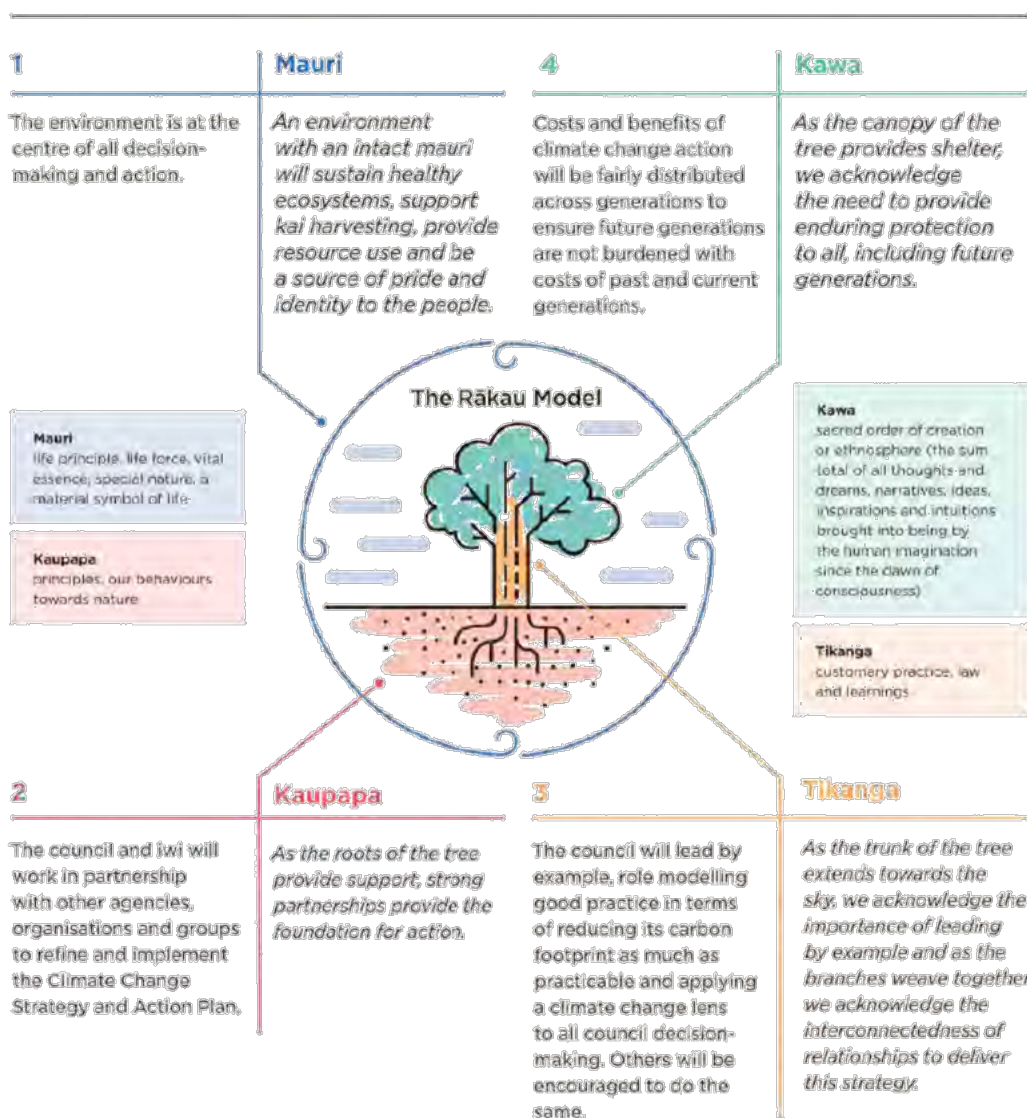
I am still fashioning this log





Principles

Ngā mātāpono



Strategic context

Te horopaki

There are three main international policies that guide the council's climate change adaptation and mitigation work.

The international context

**1 The United Nations Framework Convention and Climate Change (UNFCCC):** an international environmental treaty with the objective to:

*"Stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic<sup>1</sup> interference with the climate system."*

The UNFCCC was adopted by more than 185 countries, including New Zealand, at the Rio Earth Summit in 1992.

**2 The Kyoto Protocol:** the international treaty signed in 1997 that extends the 1992 UNFCCC and commits state parties to reduce greenhouse gas emissions based on the scientific consensus that:

- Global warming is occurring
- It's extremely likely that human-emitted CO<sub>2</sub> emissions have predominantly caused it.

**3 The Paris Agreement:** an agreement within the UNFCCC signed in Paris in 2016. The aim of the Paris agreement is:

- To hold the increase in the global average temperature at well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels
- To increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production
- To make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

<sup>1</sup> Anthropogenic = resulting from or produced by human activities, as defined by the Intergovernmental Panel on Climate Change (IPCC).

**The national context**

The Climate Change Response (Zero Carbon) Amendment Act 2019 has set a domestic greenhouse gas emission reduction target for New Zealand to:

- Reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050
- Reduce emissions of biogenic methane to 24-47% below 2017 levels by 2050, including to 10% below 2017 levels by 2030.

It has also:

- Established a system of emission budgets to act as stepping stones towards the long-term target
- Required the government to develop and implement policies for climate change adaptation and mitigation
- Establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals.

The Climate Change Response (Zero Carbon) Amendment Act 2019 required preparation of a National Climate Change Response Assessment (NCCRA) no later than one year after the start of the act (November 2019). This was produced in August 2020. The NCCRA has a critical role to play in providing the best available evidence and assessment to decision-makers, to support a planned approach to climate change risks and opportunities. The act requires the Minister for Climate Change to prepare a National Adaptation Plan (NAP) in response to the NCCRA. This will be published before mid-2022. The NAP will define both the Government's objectives for adapting to climate change and how the Government will meet those objectives.

The Resource Management Act 1991 (RMA) is another piece of key legislation. Under the RMA, local government is required to consider the effects of a changing climate on communities, and to incorporate climate change into existing frameworks, plans, projects and standard decision-making procedures.

Local government's roles and responsibilities are affected by climate change. A climate change perspective is now integrated into activities such as flood management, water resources, planning, building regulations and transport.

**Local context**



**Greenhouse gas emissions**

During 2019, Whanganui emitted gross 906,513 tCO<sub>2</sub>e and net 779,736 tCO<sub>2</sub>e emissions. The population in 2019 was about 47,000 people, resulting in per capita gross emissions of 19.3 tCO<sub>2</sub>e/person.

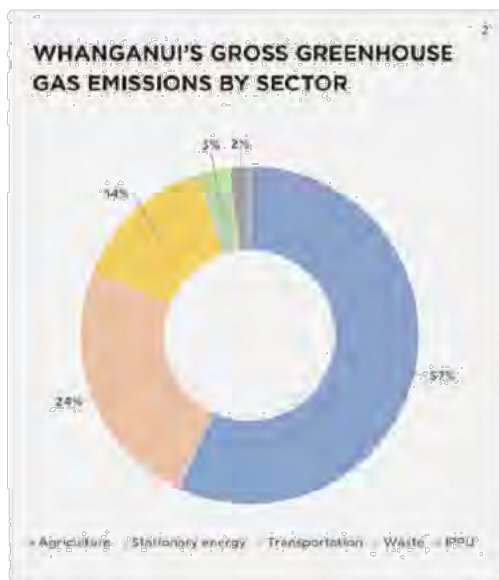
tCO<sub>2</sub>e stands for tonnes (t) of carbon dioxide (CO<sub>2</sub>) equivalent (e).

Agricultural emissions are the largest contributor to Whanganui's greenhouse gas emissions (57%), with 99% of agricultural emissions coming from livestock. Sheep are farmed in the largest numbers across the area, accounting for 86% of farmed livestock and 54% of agricultural emissions.

Cattle make up 13% of farmed livestock and 44% of agricultural emissions. Enteric fermentation (animal's digestive processes) from cattle and sheep produced 82% of Whanganui's agricultural emissions and 47% of the district's gross emissions.

This is followed by transport, with 99% attributed to petrol and diesel used for road transport.

Stationery Energy was the third largest emitting sector (electricity consumption was the cause of 26% of stationary energy emissions, natural gas 61%, petrol and diesel consumption 8%). Residential accounts for 15% stationary energy emissions, Commercial 17%, Industrial 60% and the remaining 8% for other e.g. generators and motors.



**WHANGANUI DISTRICT'S CARBON FOOTPRINT**

Gross (excluding forestry)

**779,736 tCO<sub>2</sub>e**

NET (including forestry)

**779,736 tCO<sub>2</sub>e**

Gross emissions per capita

**19.3 tCO<sub>2</sub>e**

Gross emissions per hectare

**3.8 tCO<sub>2</sub>e**

2 The Industrial Processes and Product Use (IPPU) sector includes emissions associated with the consumption of GHGs for refrigerants, foam blowing, fire extinguishers, aerosols, metered-dose inhalers and sulphur hexafluoride for electrical insulation and equipment production.



The above infographic is based on a model that has been developed using credible, independent information, but may contain distortions. Any model is based on assumptions, so the information is valid but may differ from other models. The information becomes more accurate when you look at a much bigger area than just the Whanganui District. However, it provides a useful benchmark for measuring change and progress over time.

Sequestration in agriculture is still largely unknown at this stage, and further work is required to measure this accurately.

### Likely impacts of climate change for Whanganui

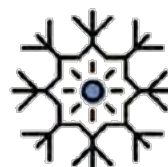
#### Temperature



- To rise by 0.8°C by 2031-2050
- To rise by 1.8°C by 2081-2100



- More hot days >25°C
- Greatest warming in summer/autumn

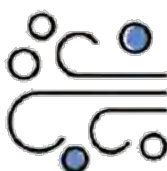


- Earlier spring melt
- Fewer frost days

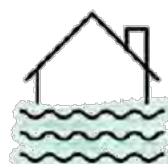
#### Rainfall



- Wetter conditions with annual precipitation up 1% and winter rainfall up 6% by 2031-2050
- Winter rainfall up 11% by 2081-2100

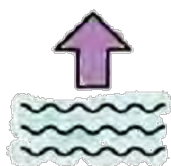


- The frequency and magnitude of storm-related events will increase

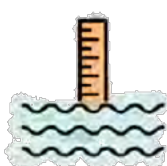


- Increased high country erosion
- Increased flooding risks and river sedimentation

#### Planning for sea level rise



- Increased coastal erosion and flooding



- A rise of by 0.3-1.0m by 2100
- 0.2-0.5m by 2060

**Climate change targets**

**Eke panuku, eke tangaroa**

These interim district mitigation targets have been set to be consistent with national and regional targets. These will be modified as information and our knowledge improves. It is intended that a district carbon model is developed so we may better understand the impact of potential mitigation actions and to inform the setting of targets.

Both the adaptation targets and the council mitigation targets will be determined upon the completion of base research.

Minimum interim district mitigation target	Reduce net carbon emissions for the district to zero (excluding biogenic CO <sub>2</sub> ) by 2050
	Reduce net carbon (excluding biogenic CO <sub>2</sub> ) by 30% by 2030
	Reduce emissions of biogenic methane to 24-27% below 2017 levels by 2050
	Reduce emissions of biogenic methane to 10% below 2017 levels by 2030
District adaptation target	Target for development of district adaptation plans is to be determined upon completion of the Regional Climate Change Risk Assessment
Council mitigation target	Targets to be set once the organisational carbon footprint has been calculated and a low carbon roadmap developed

## Strategic priorities

## Ngā pou

The key priorities for the council are both in adaptation and in leading by example – role-modelling good practice in terms of reducing its own carbon footprint.

In terms of adaptation and becoming more resilient to the impacts of climate change, the priority is to complete the Regional Climate Change Risk Assessment, which will inform where our vulnerabilities lie and the development of district adaptation plans.

The council also has a role to play in encouraging everyone in the community to play their part in addressing climate change.

Four focus areas for our community have been identified to guide the first stage of the journey to support central government's efforts toward a low carbon and resilient New Zealand:

1. Transportation – Eke waka
2. Building energy and urban form – Te hiko / hanaga whare
3. Agriculture – Ahu whenua
4. Leadership and collaboration – Mahi tāhi

While agriculture is the biggest emitting sector, the sector has significantly improved productivity over the past 30 years with reductions in numbers of sheep and beef cattle but increases in dairy cattle since 1990. There is also significant work happening nationally, and within the agricultural sectors, to reduce on-farm agricultural greenhouse gas emissions and adapt to climate change. Under the He Waka Eke Noa Primary Sector Climate Action Partnership<sup>3</sup>, by 2025 all farmers and growers will include climate change mitigation and adaptation in their farm business and environment plans, and calculate their net greenhouse gas emissions. It is also important to consider the importance of farming to economic activity and social cohesion outcomes, and to be cognisant of the Paris Agreement which highlights the need to work towards low greenhouse gas emissions development in a manner that does not threaten food production.

<sup>3</sup> Apiculture NZ, Beef + Lamb NZ, Dairy NZ, CCANZ, Deer Industry NZ, MFE, PCMA, FAR, Federated Farmers, Horticulture NZ, Irrigation NZ, MIA, MPI.



## Goals

## Ngā whāinga

These goals are numbered for referencing purposes only and do not indicate any particular priority – all goals are considered important. Inherent in each of these goals is the concept of mauri, or the life force of all living things that we seek to maintain or enhance using kaitiaki<sup>4</sup> practices and mātuaranga<sup>5</sup> Māori.

### Goals

### Whāinga

- |   |  |
|---|--|
| 1. The Whanganui District becomes more resilient to the impacts of climate change.  | <i>Ka manawanui te rohe o Whanganui ki ngā pēhitanga o te hurihuringa āhuarangi</i>            |
| 2. The council leads by example, role modelling good practice and reducing its own carbon footprint.                      | <i>Ka whakatauiratia e te Kaunihera ngā mahi tika ki te whakaiti i tōna ake tapuwae waro</i>   |
| 3. Everyone plays their part in addressing climate change.  | <i>Mā tātau katoa e whai tikanga i ngā hurihuringa āhuarangi</i>                               |
| 4. The council demonstrates leadership and works collaboratively with partners to reduce our district's carbon footprint. | <i>Ka mahi tahi te Kaunihera me ētehi atu ki te whakaiti i te tapuwae waro o tō tātau rohe</i> |

<sup>4</sup> Guardianship, practice of looking after the environment.  
<sup>5</sup> Traditional knowledge.



## Objectives

### GOAL 1

The Whanganui District becomes more resilient to the impacts of climate change.

*Ka manawanui te rohe o Whanganui ki ngā pēhitanga o te hurihuringa āhuarangi*

#### Objectives:

- 1.1. **Manage district adaptation requirements to address risks to vulnerable communities and at-risk infrastructure**

### GOAL 2

The council leads by example, role modelling good practice and reducing its own carbon footprint.

*Ka whakatauiratia e te Kaunihera ngā mahi tika ki te whakaiti i tōna ake tapuwāe wāro*

#### Objectives:

- 2.1. **Develop a low carbon roadmap for the council**
- 2.2. **Build the capacity and capability of the council to manage climate change action**
- 2.3. **Encourage sustainable practices from council suppliers through Council activity and processes**

### GOAL 3

Everyone plays their part in addressing climate change.

*Mā tātau katoa e whai tikanga i ngā hurihuringa āhuarangi*

#### Objectives:

- 3.1. **Encourage everyone to take action and do their part to reduce the impacts of climate change**

### GOAL 4

Council demonstrates leadership and works collaboratively with partners to reduce our district's carbon footprint.

*Ka mahi tahi te Kaunihera me ētahi atu ki te whakaiti i te tapuwāe wāro o tō tātau rohe*

#### Objectives:

- 4.1. **Transportation | Eke waka**
  - 4.1.1. Encourage the transition to lower emissions sustainable fuel alternatives
  - 4.1.2. Promote travel efficiency and behaviour change
  - 4.1.3. Enable and encourage active transport options
  - 4.1.4. Work in partnership with the regional council to improve public transport services to make it a more attractive travel option

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**4.2. Building energy and urban form****Te hiko / hanga whare**

- 4.2.1. Encourage energy efficiency and low carbon energy options for homes and other buildings
- 4.2.2. Reduce the carbon footprint of buildings which includes greenhouse gas emissions generated from construction materials, construction processes, construction waste disposal and disposal of the building when it has reached its end of life
- 4.2.3. Plan for growth in a way that promotes lower carbon, high amenity and a more compact urban form including the encouragement of collective housing models
- 4.2.4. Identify, understand and reduce climate change risk to existing buildings and infrastructure

**4.3. Agriculture | Ahu whenua**

- 4.3.1. Sustainable food production – food growing, processing, transporting, distributing, consuming and disposal is done sustainably
- 4.3.2. Look for opportunities to expand food-growing markets by taking advantage of climatic changes

- 4.3.3. Work together to share knowledge, educate and support change in the agricultural sector including kaitiaki practices and mātauranga Māori
- 4.3.4. Encourage sustainable farming practices that support productive and profitable farm outcomes

**4.4. Leadership and collaboration | Mahi tahi**

- 4.4.1. Develop a district carbon model to assist with setting emissions targets
- 4.4.2. Investigate barriers, provide information and educational resources to promote behavioural change and grow community knowledge and collective action
- 4.4.3. Utilise local government channels to advocate for change
- 4.4.4. Work collaboratively with local government, tangata whenua, iwi, government agencies, sector groups and other stakeholders

A key role for the council is to provide leadership including education, promotion and advocacy activities and working collaboratively with partners and key sectors.

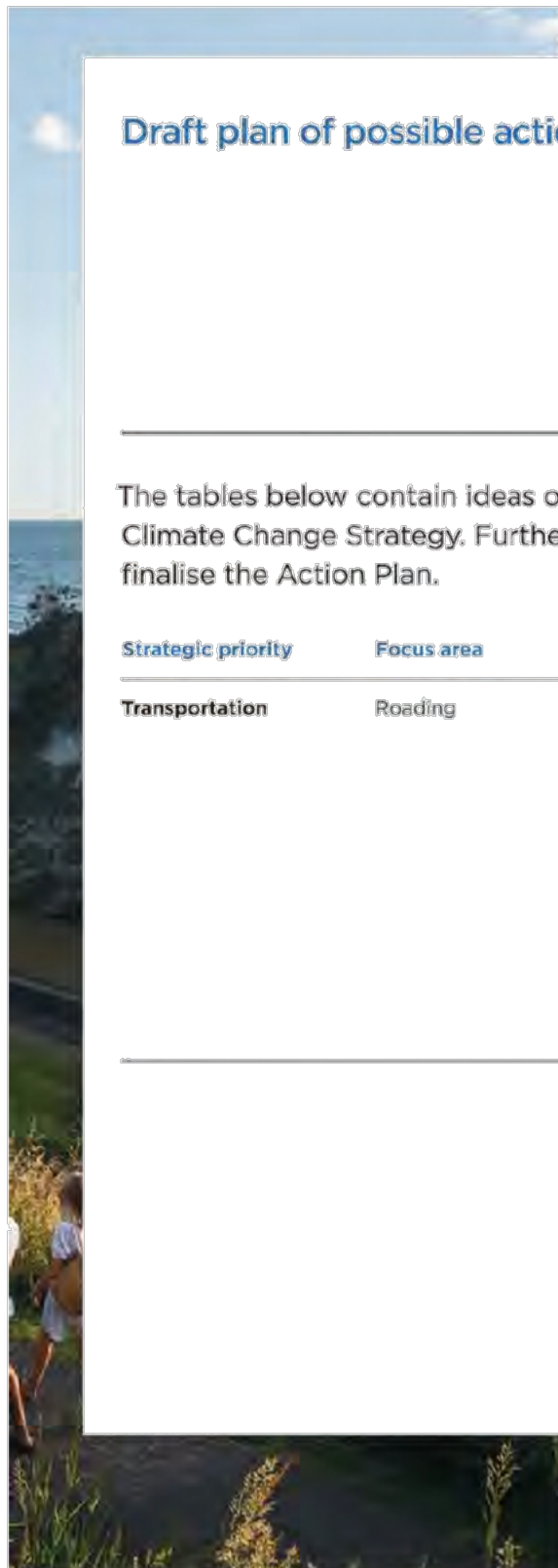
**Monitoring**

A set of indicators and measures will be developed to monitor progress towards the achievement of the goals and targets within this strategy.

Objectives

21





## Draft plan of possible actions

The tables below contain ideas of possible actions to implement the Climate Change Strategy. Further work is required to refine, cost and finalise the Action Plan.

Strategic priority	Focus area	Initiatives
<b>Transportation</b>	Roading	<ul style="list-style-type: none"> <li>Investigate alternative fuel options, e.g. hydrogen</li> <li>Promote travel efficiency / behaviour change</li> <li>Enable and encourage active transport</li> <li>Work with Horizons Regional Council to improve public transport services</li> <li>Ensure sufficient EV charging infrastructure is available</li> <li>Encourage an increase in rail transport</li> <li>Manage climate change risks to existing transport infrastructure</li> </ul>

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<b>Buildings</b>	Energy efficiency	<ul style="list-style-type: none"> <li>Promote energy efficiency and low carbon energy options for homes and other buildings</li> <li>Encourage use of energy efficient lighting, appliances and heating</li> <li>Encourage uptake of solar energy</li> </ul>
	Location and density of development	<ul style="list-style-type: none"> <li>Develop a plan for growth that promotes lower carbon, high amenity and more compact urban form and reduced travel requirements</li> <li>Enable CBD living</li> <li>Support alternative, more collective housing models e.g. papakainga, the Delhi Village, etc.</li> <li>Plant more trees – develop green corridors/network – ensure the right tree is planted, in the right place, for the right purpose</li> <li>Review treatment of passive open spaces and alternatives to grass</li> <li>Identify, understand and reduce climate change risk to existing building and infrastructure, e.g. the riverfront</li> <li>Avoid building or raise floor levels in areas prone or likely to be at risk of inundation</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>Encourage circular<sup>6</sup> economies – production, use, re-use and recycling</li> <li>Promote and invest in waste reduction and reuse across the community and key sectors, e.g. the building and construction sector</li> </ul>

<sup>6</sup> Circular economies design out waste and pollution, keep products and materials in use, regenerate natural systems

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<b>Agriculture</b>	Food production	<ul style="list-style-type: none"> <li>• Develop a sustainable district food plan<sup>7</sup></li> <li>• Look for opportunities to expand food-growing markets to take advantage of climatic changes</li> </ul>
	Education, collaboration, research and planning	<ul style="list-style-type: none"> <li>• Work together to share knowledge and provide support for change</li> <li>• Acknowledge the kaitiaki practices and matauranga Māori of Māori landowners for farm management</li> <li>• Encourage farmers to understand their farm's carbon footprint and develop farm plans that consider mitigation, sequestration, adaptation and adverse events</li> <li>• Undertake research to identify sustainable water sources to support land-use change</li> <li>• Develop plans to drive sustainable, productive and profitable farm outcomes</li> <li>• Recognise the efforts of the agriculture sector and educate the wider population</li> </ul>
<b>Leadership and collaboration</b>	Information, education and promotion	<ul style="list-style-type: none"> <li>• Provide information and educational resources to grow community knowledge and collective action</li> <li>• Investigate barriers to, and support for sustainable building design and construction</li> <li>• Promote warm, dry homes – Home Energy Save programmes, Warmer Kiwi Homes Scheme</li> <li>• Sign up to Auckland Council's Future Fit programme (footprint tool, dashboard, communications, marketing and educational material)</li> <li>• Become a member of the Sustainable Living Trust which provides practical opportunities for people to learn</li> <li>• Promote behavioural and cultural change to create resilience, e.g. benefits of collective living, use of active and public transport</li> </ul>

<sup>7</sup> This covers all stages of keeping people fed including growing, processing, transporting, distributing, consuming and disposing of food.



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Decision-making and capability

- Align organisational culture, key documents and decisions with climate change principles
- Engage and educate staff to ensure climate change considerations are included in operational and council decision-making
- Use the Mauri model<sup>8</sup> for environmental decision-making

Advocacy

- Advocate to promote change e.g:
  - Transportation
  - Building standards
  - Waste reduction e.g. food packaging to use higher-grade plastics that are recyclable in New Zealand
  - Impact of overseas investors planting trees to gain carbon credits
  - Tourism levies

Collaboration

- Establish a community climate change forum to drive and co-ordinate action
- Nominate community climate advisors to support and advise sector groups
- Work collaboratively with local government, Tangata Whenua, Iwi, government agencies and other stakeholders

Incentives

- Investigate reducing development contributions for developments that meet the Green Building Standard
- Investigate incentive programmes, e.g. targeted rates schemes to support energy efficiency upgrades

<sup>8</sup> See Appendix 1

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Strategic priority	Focus area	Initiatives
Whanganui District Council	Carbon footprint	<ul style="list-style-type: none"> <li>Undertake a baseline emissions inventory for the council</li> <li>Implement appropriate opportunities to increase carbon sinks in the Whanganui District</li> <li>Set emissions targets and develop a low carbon roadmap</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>Reduce waste</li> </ul>
	Energy efficiency	<ul style="list-style-type: none"> <li>Consider Green Star Building certification for new building projects</li> <li>Investigate conversion to solar energy for the council buildings</li> <li>Recognise energy efficiency ratings of houses and buildings on LIMs</li> <li>Consider the development of a pathway for eliminating use of fossil fuels for heating public buildings and facilities</li> </ul>
	Vehicle fleet	<ul style="list-style-type: none"> <li>Convert fleet cars to hybrid or electric vehicles</li> </ul>
	Travel	<ul style="list-style-type: none"> <li>Enable working remotely and use video conferencing instead of travelling to a meeting</li> </ul>
	Procurement	<ul style="list-style-type: none"> <li>Leverage purchasing power to promote circular economies</li> <li>Consider carbon emissions when awarding contracts</li> </ul>
	Infrastructure	<ul style="list-style-type: none"> <li>Consider using ISCA<sup>9</sup> rating scheme for evaluating Infrastructure sustainability across planning, design, construction and operational phases of infrastructure programmes, projects, networks and assets</li> </ul>
	Staff	<ul style="list-style-type: none"> <li>Appoint a Climate Change Officer to be a champion for climate change action, provide advisory, education, advocacy, research and monitoring services</li> <li>Provide appropriate training for regulatory staff to support change</li> </ul>

<sup>9</sup> ISCA – Infrastructure Sustainability Council of Australia

**Whanganui District Council**

Resilience

- Develop District Adaptation Plans

**What you can do about climate change**

**Actions**

**Reduce your electricity use**

Greenhouse gas emissions are produced when we use electricity and gas. New Zealand has a high level of renewable electricity production, but this is still supplemented by burning fossil fuels

- Switch off lights when not in use.
- Use LED lightbulbs
- Unplug electronics from the wall socket when they're not in use
- Run the dishwasher and the washing machine only when full
- Wash clothes in cold water and dry them outdoors when possible
- Try having shorter showers or shower before going to bed (there is less fossil fuelled electricity generation after 9pm)

**Shop at your local fruit and vegetable market or grow you own**

Help reduce greenhouse gas emissions from transport by using local ingredients. When you buy local food or products you are also helping your local economy.

- Plant your own vegetables and fruit trees. Containers are great if you are short of space.
- Buy local and in-season foods that haven't travelled long distances to reach you.

**Reduce, reuse and recycle**

All products and materials to be built, packaged, transported and sold. Reducing how much you buy is good for the environment and your wallet

**Reduce:**

- Buy only the food you need, and compost your kitchen scraps and garden waste.
- Buy products without any packaging whenever possible and always take your reusable bags to the supermarket
- Make the most of what you already have. Repairing products such as clothes means they don't have to be replaced so often.

**Reuse:**

- Swap your bottles and lunch containers for reusable ones
- Donate unwanted goods such as books, clothes and furniture to a charity shop

**Recycle:**

- Use recycling services and recycle bins

**Plant trees**

In New Zealand, forests offset 30% of our greenhouse gas emissions. A regenerating native forest can remove more than 8 tonnes of carbon dioxide per hectare per year from the atmosphere over its first 50 years

Coastal vegetation can reduce erosion. It can also reduce the impact of waves and floods

Trees provide shade which has a cooling effect in towns and cities. When placed around buildings they can cut electricity use for cooling in summer

- Plant native trees on your property
- Get involved in a community forest restoration, dune care or coastal revegetation programme in your area

**Conserve water**

Climate change is likely to have an impact on our water resources. Water supply may be altered due to changes in temperature and rainfall patterns, and water demand is likely to increase during summer months as temperatures increase

- Replace lawns with native plants
- Collect rainwater and use it to water the garden and for other household tasks that don't require drinking water
- When buying new household devices, consider how water-efficient they are

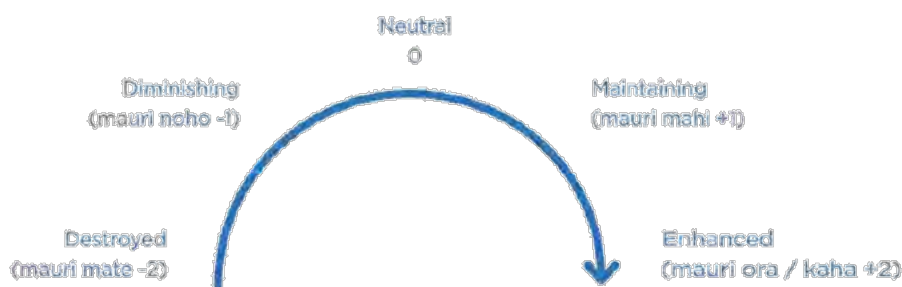
**Be aware of your emissions – drive and fly less**

- Know where your greenhouse gas emissions are coming from – measure your own emissions footprint
- Walk or cycle
- Use public transport
- Carpool with family or friends
- Work remotely and use video conferencing instead of travelling to a meeting
- Reduce the number of flights you take
- If you fly, pay to offset your emissions

**Building and cars**

- If you are building a house include balconies, shading and efficient cooling systems such as natural ventilation
- Use passive solar design and insulation.
- If you replace your car, consider an electric vehicle

### Appendix 1: The Mauri model



The Mauri model was developed as a framework, assessment method, and decision-making tool to integrate economic, social and cultural dimensions - regarded as subsets of the environment. It is based on the concept of mauri. As such, the tool demonstrates methods for understanding the interrelatedness or interconnectedness of all living things, and for measuring sustainability and human wellbeing.

The model's aim is to assist decision-making by helping understand how different activities impact on the intrinsic values of ecosystems. The resulting effect of activities and practices on the mauri will be seen as -2 destroyed; -1 diminishing; neutral; +1 maintaining; +2 enhanced.

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For more information on Whanganui District Council  
climate change initiatives visit:

[www.whanganui.govt.nz/climate-change](http://www.whanganui.govt.nz/climate-change)



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