



Climate Change Action Plan

Āhuarangi Hurihuri: Mahere Mahi

July 2021





Climate change is arguably the most urgent issue facing us. Its impacts are unpredictable but will almost certainly be significant and wide-reaching.

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Executive Summary

Whakarāpopoto

Ko au te taiao, ko te taiao ko au. **I am the environment, the environment is me.**

The Horowhenua District can expect hotter summers, shorter winters, heavier rainfall, more frequent droughts, coastline changes, increased westerly winds and a rise in sea levels. These changes could affect human health, damage property and devastate our agriculture and horticulture industries. We need to act, and fast.

This document outlines how Horowhenua District Council plans to tackle – or is already tackling – these issues in line with the government's Carbon Zero 2050 goals. Some actions are focused on preparing for the impacts of climate change. Others are about reducing greenhouse gas emissions to slow the rate of change.



How we're preparing for climate change

- Complete a detailed stocktake of the Council's greenhouse gas emission across all activities.
- Develop and establish a sustainability policy to provide a roadmap for the Council.
- Manage coastal hazards through our District Plan and resource management plans.
- Control land use activities in the coastal environments to sustain the resilience of the dune landscapes.
- Use disaster response to prepare for any major events in coastal areas.
- Plan for flooding and inundation through physical protections and controls through our District Plan.
- Address how we manage urban stormwater.
- Prepare for temperature rise and drought through water restrictions, water take consents and research into fire-fighting requirements.
- Address building resilient infrastructure for natural hazards and climate change with an allocated \$18 million in Council's Long Term Plan 2021/2041 for alternative water supply for Levin.
- Manage wastewater by shifting to land-only discharge, and address how we manage infiltration and incursion into our networks.
- Provide information and advice through online services such as MapIt and District Planning Maps that identify hazard-prone areas like the Moutoa Floodway system and any physical protections.
- Educate and engage communities and businesses, especially those likely to be most affected (iwi, hapū, whānau, coastal communities, producers and growers).
- Promote sustainable development, by consolidating development within existing populated areas and ensure new builds are more self-sufficient with storm water management, for instance rain water tanks which minimise demand on local water supplies.

How we're helping to reduce greenhouse gas emissions

- Installing EV-charging facilities in the District, supporting the uptake of low-emission vehicles and creating spaces and shared pathways that promote greener modes of transport like walking, public transport and cycling.
- Advocating to regional and public agencies for funding of more public passenger transport services and facilities.
- Investing in initiatives to create a more energy-efficient District.
- Creating initiatives to help community and businesses understand how they can decrease their emissions.
- Communicating with iwi and community groups, other councils and central government to monitor and direct our progress.
- Council's Master Plans for new residential and business areas create good local connections, making it easier for the community to get from A to B without being so dependent on private car trips.

August - November 2021

- Iwi and sector engagement
- Stocktake of Council's greenhouse emission
- Develop and establish a sustainability policy to provide a roadmap for Council

December 2021

- Climate Change Action Plan Adoption by Council
- Launch Climate Change Action Plan

June 2022

- Implement Climate Change Action Plan
- Ongoing community engagement & education

Introduction

Whakatakinga

Caring for people means caring for the environment.

Caring for the environment isn't just the right thing to do. It's also critical for our success as a nation. Healthy, productive people need a healthy environment – and achieving that is becoming ever more difficult.

Our planet is heating up. Carbon dioxide in the atmosphere is at levels not seen for at least 800,000 years, ancient ice sheets are melting and glaciers have receded all over the world. And according to NASA, there's a more than 95 per cent probability that human activities over the past 50 years have warmed our planet.¹

Climate change is already here

We're starting to see how climate change will impact us: more frequent and more intense droughts, heat waves, floods, storms and forest fires, along with more coastal erosion and sea levels that are projected to rise in our district by 0.8 metres by 2100.²

That all adds up to wide-reaching and devastating outcomes. Global warming, pollution and habitat destruction increase the risk of plants and animals becoming extinct. Shifts in ecological conditions could support the spread of pathogens, parasites and diseases, seriously impacting human health, agriculture and fisheries.

But it's not too late to do something.

This Action Plan sets out how and when we're going to proactively respond to our changing climate, reduce greenhouse gas emissions and transition to a lower-carbon economy.

Climate change in the Horowhenua

Climate change affects everything – the Horowhenua District, the nation and the world. Our District has already seen some of the effects: rising sea levels and warmer temperatures along with more frequent, more intense rain and winds. These events cause flooding, landslips, coastal erosion, and water shortages, which have and will continue to damage property and impact on our health and wellbeing. They'll also impact our iconic horticulture industry, which is a huge part of our District's economy, community identity and culture.

Doing nothing isn't an option

Council, businesses, organisations, iwi and the wider community need to work together to address these problems. This document outlines what part the Horowhenua District Council (HDC) could play. It covers what we plan to do to help slow climate change, and the steps we can take to reduce its impact on our people, community and economy.

The changing climate and its importance

Greenhouse gas emissions are causing significant changes to the earth's oceans and the climate. Around the world, the average annual temperature is now 1°C warmer than it was during pre-industrial times.³ We're already seeing the effects of climate change in our District, and we can expect the effects to get worse if we do nothing. Some effects will be long-lasting and even irreversible.



New Zealand
has warmed by
approximately
0.09°C
per decade
since 1909

Predicted regional
improvement in
river sediment of

27%

By 2043 could reduce to

5-19% ↘

due to climate change

Summer flows in the
Manawatū River

Are projected to decrease

↓ **14%** ↓

by 2090

and the number of high flow
events are likely increase

Our region's
temperatures are
likely to increase

0.7-1.1°C

by 2040 and up to

3.1°C

by 2090

↑ Annual average
precipitation is
predicted to increase
15-20% in the north
of the region

and decrease

20%

in the south east by 2090 ↓

3. <https://niwa.co.nz/our-science/climate/information-and-resources/clivar/pastclimate>

Focus areas

These are the aspirations of Horowhenua District Council for how we will respond to climate change.

These focus areas need to strike a balance between the actions needed to address climate change, and the interests of the residents, the environment and the economy.



Council's focus areas for addressing climate change are:



Complete a stocktake of Council's greenhouse gas emissions



Develop a sustainability policy and establish a pathway to meet our greenhouse gas emissions targets



Reduce greenhouse gas emissions (including net carbon emissions 2050)



Build resilience against the impacts of climate change



Focus on education and adaptation



Lead climate change actions in our district

Background Context

Horopaki Tūāpapa

The 2019 Climate Change Response Act

In 2019, the government amended the Climate Change Response Act 2002 to help New Zealand reduce emissions and adapt to a zero-carbon economy. Here's what it set up.

Climate Change Commission

The Climate Change Commission, which gives independent advice to the government on slowing climate change and helping the country adapt to its effects. It also monitors the government's progress towards these goals.⁴

Targets for reducing emissions

By 1 January 2050, New Zealand must be removing at least as much carbon from the atmosphere as we add. By 1 January 2030, methane from plants and animal sources will need to be reduced by 10% and 47% by 1 January 2050.

A national climate change risk assessment

A national climate change risk assessment is helping the government understand how climate change could impact our economy, society and environment. In this assessment, our District has been identified as being in Climate subzone 2, which stretches from Taranaki to Kāpiti. It also identifies the 10 risks that need urgent action by 2025.

Regional Climate Change Risk Assessment

Council is involved in a Regional Climate Change Collaboration with Horizons Regional Council (HRC), and a regional risk assessment report is underway to identify how the regional council and local authorities, including HDC will support the aspirations and targets of the government and the Climate Change Commission. The regional risk assessment includes information gathered from the (HRC) Regional Climate Collaboration and the findings will inform the Climate Action Joint Committee Change regional approach.

Horowhenua District Council Sustainability Policy

Develop a sustainability policy and establish a pathway to meet our greenhouse gas emissions targets. The Sustainability Policy will cover: engaging with local iwi and sector groups to understand how we can help protect the parts of their whenua most affected by climate change; making our transport and buildings more energy efficient; and working with our community on recycling and waste reduction initiatives.



Path to zero carbon

Climate Change Commission's major carbon-cutting recommendations

Period
2022-25



TRANSPORT



Vehicles



Subsidy or feebate for EVs. Improve fuel efficiency of new petrol and diesel cars. Biofuel blending.



Travelling patterns



Encourage remote working.
More people walking, cycling and using public transport.



Non-road



Electrify trains.

Heat, Industry and Power



Buildings



No new natural gas connections.
Well-insulated homes.



Electricity



More renewable generation.



Manufacturing



Replace coal with electricity and biomass (wood waste).

Heat, Industry and Power



Agriculture



Reduced herds, fertiliser and imported feed.



Native forest



New native forests.



Exotic forest

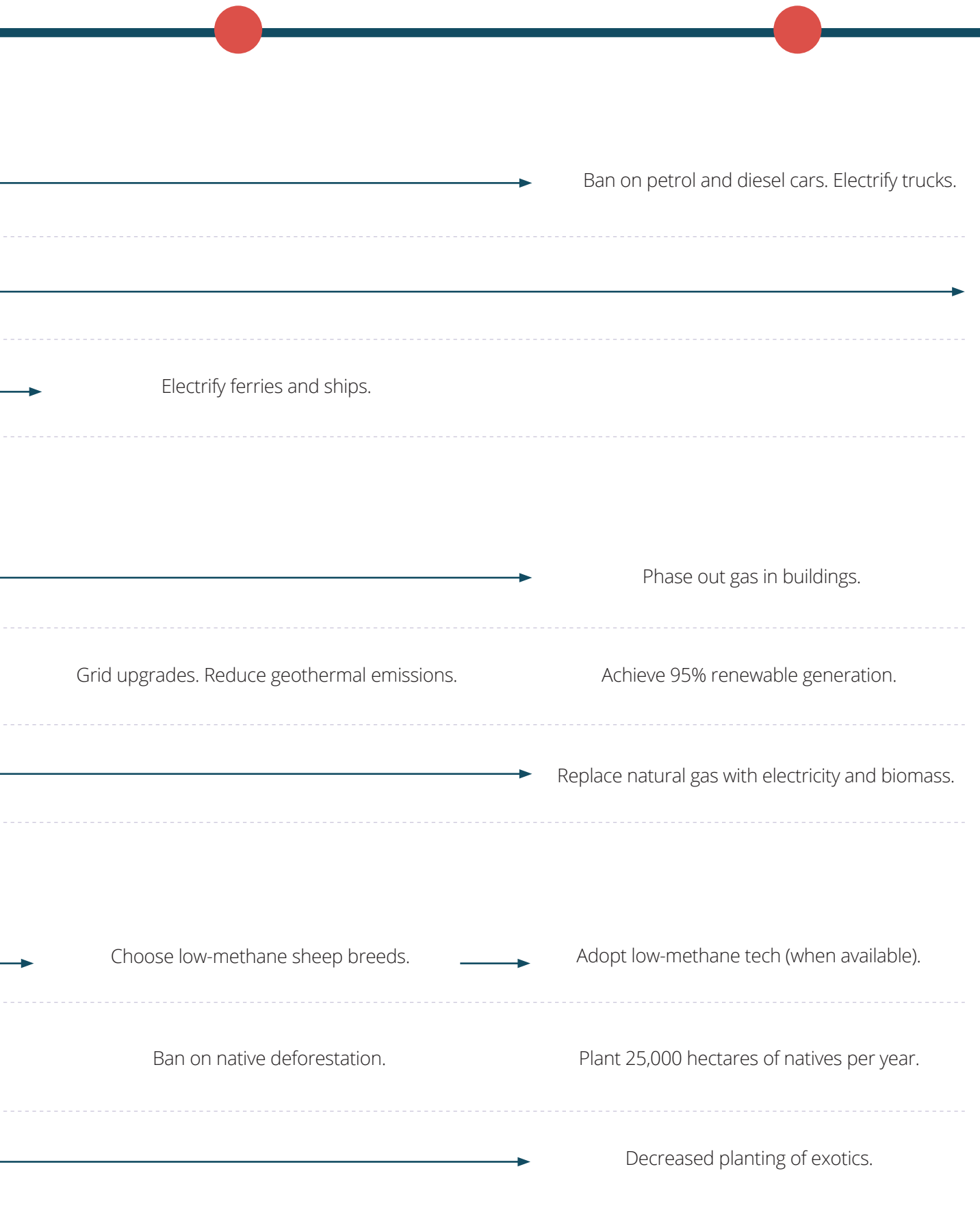


Plant 25,000 hectares of exotics per year.

EMISSIONS BUDGET

Period
2026-30




Period
2031-35



Changes we might see in our District

Ngā hurihuringa tērā ka hua ake i tō tātou rohe

If we do nothing, within the next 100 years we can expect to see

-  **20% more winter rain in the northwest, 20% less in the southeast**
-  **5% more summer rain in the north, 5% less in the south**
-  **Up to 50 more very hot days a year**



Resulting physical and seasonal changes that the Horowhenua District may experience are:



**Coastal erosion
and accretion**



Rising sea levels

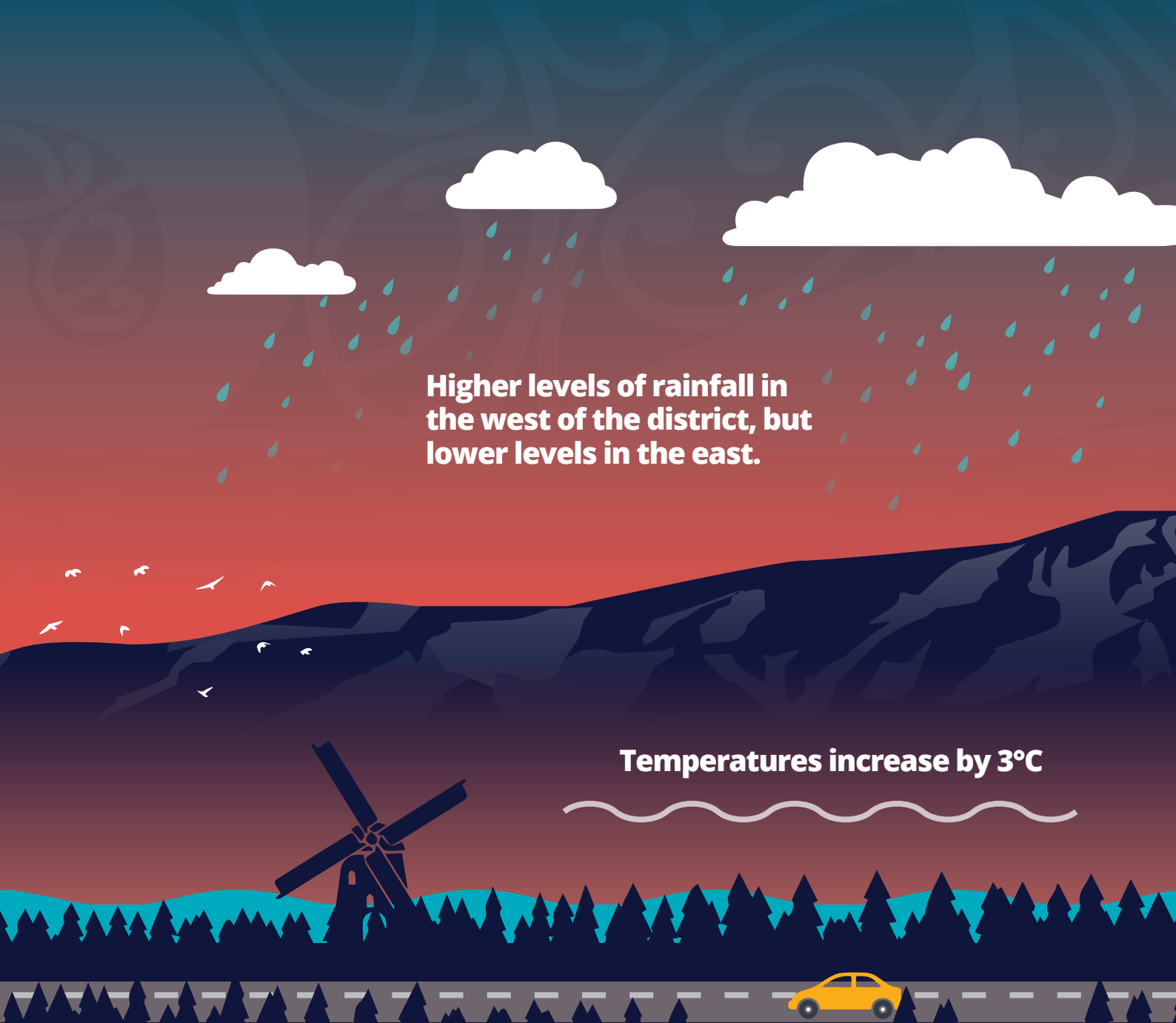


**Changing river mouths
and estuaries**



**Warmer water
temperatures**





**Higher levels of rainfall in
the west of the district, but
lower levels in the east.**

Temperatures increase by 3°C



Flooding and inundation



Storm events and surges



Changes we might see in our District

Ngā hurihuringa tērā ka hua ake i tō tātou rohe

Impacted coastlines and coastal communities

Our coastlines and coastal communities will likely be significantly affected by:

- Coastal erosion and accretion
- Changing river mouths and estuaries
- Rising sea levels
- Warmer water temperatures
- Flooding and inundation
- Storm events and surges

Coastal settlements and areas such as Waikawa Beach may experience river mouth migration if the sea level rises. This may mean that any restrictions to flow (sea walls/ structures) may cause overflow and flooding. This will affect property and infrastructure and may mean some family or communities will need to migrate to other areas.

Heavier rainfall

Our District can expect to see more intense and more frequent rainfall events, with the same amount of rain falling on fewer days and only in some areas.

For example, we could expect 20% more winter rain in the northwest but 20% less in the southeast.⁵ This will put pressure on our roads, wastewater and stormwater infrastructure as they struggle to deal with increased water volumes. More downpours will also limit our drinking water supply – most rain will run off as surface water, rather than making it to reservoirs. This will be made worse as urbanisation covers more soil with concrete and asphalt.

Higher frequency of droughts

Fewer rain days, longer summers, warmer autumns and shorter, milder winters may mean the District faces more regular droughts, leading to:



More water restrictions



Seasonal issues for farming and cropping and changes in historic food production and supplies



An increased risks of fires



Challenges for agriculture and horticulture

Climate change will make weather more severe and unpredictable, which will make it harder for the agriculture and horticulture sectors to guarantee food production and supplies.

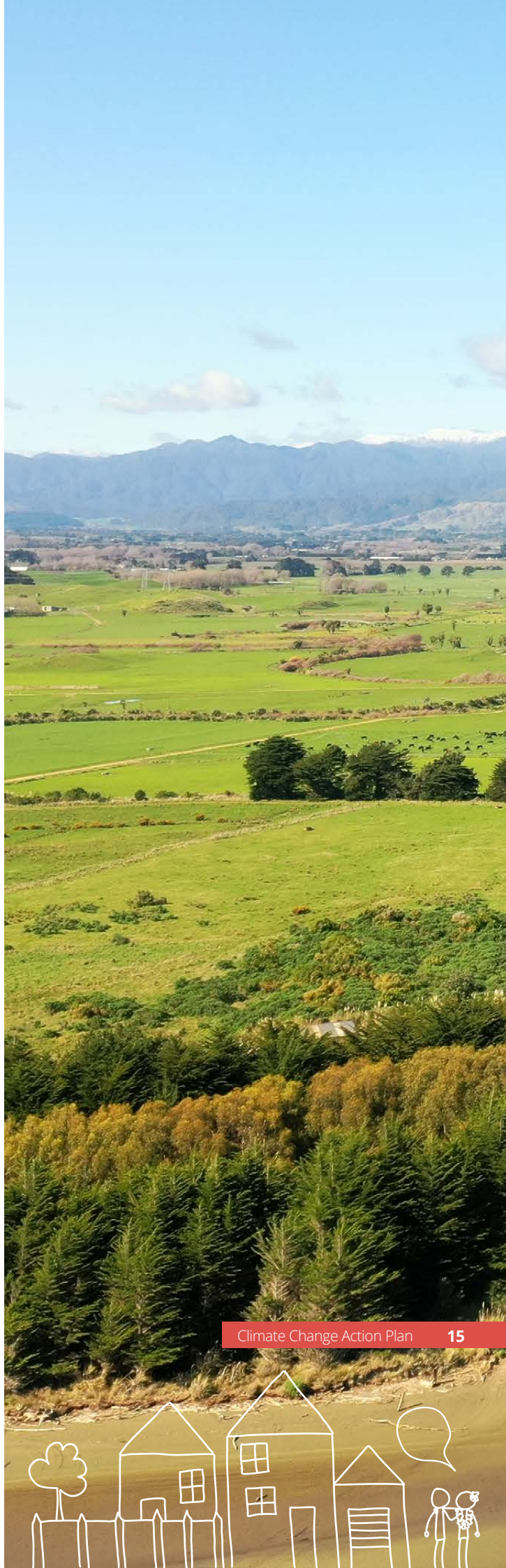
This raises concerns around our regional food security. Warmer temperatures can also encourage plant pests and require changes in land use, farm systems and land use practices. However, these negative impacts may be less severe than in other parts of the country. We have a moderate micro-climate and Class 1 and 2 soil, so warmer weather and fewer frosts could allow for more diverse crops to be grown.

Diminishing drinking water quality

Increased temperatures can create ideal environments for bacteria, viruses and pathogens that can make drinking water less safe.⁶

These environmental changes could have very tangible impacts on our daily lives, from flooded homes to ruined crops. Since we can't predict these risks with certainty, they're very difficult to plan for. Council will need to plan for more resilient infrastructure and treatment options, including alternative water storage options.

6. Tonkin Taylor Horizons Exposure Assessment Memo



What this may mean for the Council and our District

Te pānga mai ki te Kaunihera me tō tātou rohe

Actions currently in place

Council has already started preparing for climate change, particularly through controls set out by the District Plan.

We will build resilient infrastructure for natural hazards and climate change, with \$18 million

allocated in the 2021/41 Long Term Plan for an alternative water supply and storage in Levin. We will manage wastewater by shifting to land-only discharge, and address how we manage infiltration and incursion into our networks.

Managing coastal hazards

The Council's District Plan and resource management plans are designed to protect people, property and infrastructure against erosion and avoid or minimise the destruction of sensitive foredunes and other coastal landscapes. There are rules already in place to manage structures and land subdivisions within coastal and flood hazard areas. We also carry out risk assessments of natural hazards and the effect they have on other areas of the coastal environment.

Building a resilient dune environment

Coastal erosion is a major hazard, especially where there are buildings, but our District is more prone to coastal accretion (where sand and silt build up along the coastline). To make coastal ecosystems and settlements more resilient against rising sea levels and storm surges, we've joined forces with the Horizons Regional Council and community interest groups to support foredune protection reserves, dune stabilisation activities and protective planting. Local Coast Care groups actively monitor the coast, organise working bees and support planting bees.

Controlling land use

When deciding on coastal land use and developments in areas at risk of flooding, the Council considers rising sea levels and climate change. Project Information Memoranda (PIM) and Land Information Memoranda (LIM) already inform property purchasers about natural hazards, including the relevant risks of climate change. Section 106 of the Resource Management Act 1991 is a critical statutory requirement and directs Council to avoid subdivision and development where there is reliable evidence of a hazard or risk. Sections 71 and 72 of the Building Act 2004 controls buildings and the development of land subject to a natural hazard.

Disaster response and defence



Coastal sea walls and riverbank retaining walls



Identification of the flood protection scheme



Community Response Plans for Waitārere Beach (finished), Ōhau and Manakau (drafting)



Tsunami road markings, pump stations and upgrades



Protected planting/fencing/signage



Planning for flooding and inundation

Flooding is the most significant and pressing issue for the Horowhenua District – most of the District is on floodplains, and we have settlements on the coastlines or near large river systems. Many significant rivers and streams traversing the plains rise rapidly in heavy rainfall, which can cause flooding and inundation. This issue will only become more urgent as climate change increases the number of higher intensity rainfall events.

Drinking water supply restrictions

Intense periods of rainfall can occasionally create the need for water restrictions. Most of the District's water supply is surface water, so after heavy rain, muddy water can infiltrate the drinking supply and affect the operation of water treatment plants. Water restrictions and conservation allow reservoirs to replenish and water to be effectively treated.

Council allocated \$18 million towards alternative water supply for Levin township to build resilient infrastructure for natural hazards and climate change.

Physical protection against flooding

Our Regional Flood Protection Schemes are our primary forms of protection and mitigation against heavy rain and management of flood waters.

This includes our stop-bank network, flood gates, flood guides and structures, which are owned and operated by the Horizons Regional Council.

The role of the District Plan

Our District Plan implements the regional direction for flood hazard management in The Horizons One Plan. The rules and standards set out in the plan work to avoid, remedy and mitigate the impact of flooding and inundation on people, property and infrastructure. For example, any habitable buildings or work premises in areas identified as flood-prone must comply with minimum floor level standards, allowing for some contingency or a buffer. Similarly in the Moutua Floodway, structures and earthworks must generally be avoided. Overland flow paths are also always considered by Council's subdivision engineers when granting consents and setting consent conditions.

Preparing for temperature rise/drought

Increasing temperatures in the Horowhenua District could mean more water shortages in dry seasons and we're planning for this.

In Levin, for example, Council has an existing Water Take Consent from Horizons Regional Council, which means we can source water from the Ōhau River. We can also apply water restrictions

and Council's subdivision engineers have been researching fire-fighting requirements.

Council is looking into building a reservoir lake to store raw water, which will address dry weather period. It will also act as an alternate water source after heavy rainfall and eliminate muddy water entering water treatment plant.

Future proofing housing and growth

Promote sustainable development, by consolidating development within existing populated areas and ensure new builds are more self-sufficient with storm water management, for instance rain water tanks which minimise demand on local water supplies.

Section continued on next page



Managing wastewater

The Horowhenua District provides wastewater infrastructure and services to Levin, Foxton, Foxton Beach, Shannon, Tokomaru and Waitārere Beach.

Managing discharge

There are six wastewater treatment plants. In a world first, one plant irrigates a manuka/kanuka forest in Levin, while four discharge to land. One still discharges to a wetland, but Council is in the process of shifting this to land, to improve the waterway quality. All homes and businesses not in the reticulated network use a septic tank or on-site treatment.

Addressing stormwater

When stormwater gets into the sewer system, raw sewage can cause overflowing at pump stations and overwhelm wastewater treatment plants. This also impacts the ability to irrigate land. Council is already undertaking a programme of inflow and infiltration work to address this. This work includes resilient pump stations to protect our community and the environment.

Planning for Climate Change - Mitigation and Adaptation

Te Whakamahere mō te Āhuarangi Hurihuri
- Te Whakamauru me ngā Urutaunga

Mitigation involves understanding the risks and benefits of climate change and changing what we do to reduce the effects of climate change.

Adaptation is taking action to change what we do and putting plans and measures in place to adjust to a changing climate.

Examples of mitigation

- Promote sustainable urban development
- Remote working (to reduce travel) or car pooling
- Manage and invest more in reserves and open spaces
- Plan for more EV Charging Stations
- Align procurement processes to support climate change objectives

Examples of adaptation

- Plant more native forests
- Promote well insulated homes, green energy and sustainable water use
- Encourage people to walk, cycle and use public transport
- Invest in more shared pathways
- Design infrastructure to manage stormwater more efficiently and effectively
- Consider renewable energy options for key facilities

Steps for climate change adaption



Partnering with other councils

Council has partnered with Horizons Regional Council and other district councils in the Manawatū-Whanganui Region to share information and work on a Climate Change regional risk assessment. This will inform priority areas for investments, research and funding programmes within the region.

The regional planning objective for climate change is set out in a plan from the Horizons Regional Council. This is called One Plan, and it requires that we:



Promote resilient land management practices through the Sustainable Land-Use Initiative (SLUI).



Plan for changes to the scale and frequency of natural hazards, especially coastal hazards, flooding and inundation, temperature rise and drought.



Manage waste quality within One Plan's values framework, responsive to climate change.



Educate about current and potential issues that climate change is causing in the District, especially those likely to be most affected (iwi, hapū, whānau, coastal communities, producers and growers).



Manage water quantity by defining minimum river levels as baseline and considering climate change when granting consents for water take and use.

Implementation Strategies

Rautaki Whakatinana

How to reduce emissions and adapt to the effects of climate change

Emissions from Council's activities can be lowered. The first step will be a stocktake of our emissions across all activities. This information will feed into a sustainability policy to guide our future actions and monitor, review and report on progress. The policy will also guide how we can better enable our people and businesses to reduce their own emissions and adapt to the impacts of climate change.

Supporting emissions reduction across the Horowhenua District

Council can help reduce emissions through strategic actions and initiatives in a number of areas, including:

Transport

- Support the uptake of low emissions vehicles.
- Install more EV charging stations in the District and encourage the community to use them.
- Facilitate public transport alongside Horizons Regional Council when it becomes possible.
- Create more green spaces and provide green corridors for active transport.
- Investigate the possibility of providing park-and-ride facilities and shared pathways to promote greener modes of transport.
- New residential and business developments will be close to public transport and have good connections to reduce private car trips.

Energy

- Investigate creating or funding a programme to help households lower emissions by becoming more energy-efficient.
- Replace all park lights with energy-efficient LED lights. Streetlights have already been changed to LED with plans already in place for park lights for the next financial year.
- Explore options for renewable energy targeted at Council's high energy-use activities such as the Levin Wastewater Treatment Plant and the Levin Aquatic Centre.





Communication

- Regularly monitor the District's progress on emission reduction and adaptation. This will ensure that Council's efforts are effective and are making changes where they're needed most.
- Engage with the local iwi to understand how we can help protect the parts of their whenua most affected by climate change.
- Implement a sustainability policy in line with Government's goal of zero emissions by 2050. This will inform a 'road map' to drive changes within the Council and potentially within the community.
- Support and engage with climate-change community groups.

Education

- Increase readily available education on climate change, what to expect and how to decrease emissions.
- Educate the community about waste reduction and recycling to minimise methane-producing landfill.
- Integrate climate change into the Enviroschools programme.
- Investigate using a Ministry for the Environment exhibition to educate the community on climate change and how a strategic, integrated climate change response plan can be developed. This would be a free event planned with support from dedicated Ministry staff. Kāpiti (Coastlands) has already successfully held this exhibition.



Implementation Plan

Te Whakatinana i te Mahere

Council has started on a Plan to respond to our changing climate and to align with Government's Climate Change targets and aspirations. The next steps we plan to take are set out below.

August - November 2021

- **Iwi and sector engagement**
- **Stocktake of Council's greenhouse emission**
- **Develop and establish a sustainability policy to provide a roadmap for Council**

December 2021

- **Climate Change Action Plan Adoption by Council**
 - **Launch Climate Change Action Plan**

June 2022

- **Implement Climate Change Action Plan**
- **Ongoing community engagement & education**



**It's not too
late to do
something.**



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