



WAIHEKE LOCAL BOARD

Waiheke Local Climate Action Plan

Waiheke ki uta, Waiheke ki tai, Waiheke ki tua

Waiheke to the land, to the seas and beyond

2021 – 2022

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Contents

Contents	3
Chair’s foreword: A climate action response	5
1. Introduction	7
2. Our current carbon footprint	9
3. Waiheke Local Board area’s zero carbon vision, goals and objectives	10
4. A Te Ao Māori approach	11
5. Developing the plan	12
6. Adapting to climate change	12
6.1 A nature-based approach	13
6.2 Waiheke climate change impacts and risks	15
6.3 Transitional risks and opportunities	16
7. Implementing the plan	17
8. Finance	17
9. The action plan	18
10. Flagship projects	19
10.1 Natural environment – Taiao māori	20
10.2 Built environment – Taiao hanga	27
10.3 Transport – Ikiiki	33
10.4 Economy – Ōhanga	40
10.5 Community and Coast – Ngā hapori me te tahatai	46
10.6 Food – Ngā kai	52
10.7 Te Puāwaitanga o Te Tātai	57
10.8 Energy and industry – Te ngao me te ahumahi	62
11. Monitoring framework	66
12. Definitions	68
Appendices	71
Appendix 1: Climate action stocktake Waiheke Local Board area	71
Appendix 2: Contributors to this action plan	75



Chair's foreword:

A climate action response

Taking climate action has never been more important or more urgent. In 2019 Auckland Council declared a Climate Emergency. In 2020 Auckland Council approved Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan.

Te Tāruke-ā-Tāwhiri calls on local boards to:

- work with our communities to understand their priorities and to deliver climate action
- lead initiatives that build community resilience and reduce emissions in their communities
- advocate for local facilities to have low carbon footprints
- advocate for climate resilience and emissions reduction
- foster strong local partnerships with mana whenua and Māori communities.

The Waiheke Local Climate Action Plan is our response to this call.

The Waiheke Local Board area already has strong foundations with a legacy of climate positive projects. There are over 40 climate action related projects already underway in the Waiheke Local Board area and that is without considering the number of restoration and conservation projects.

The Waiheke community is made up of approximately 9500 residents, 1500 businesses, with mana whenua and mata waaka involvement, and a network of incredibly strong community and environmental groups. It is already focused on the protection and restoration of our land and our waterways, improving the health and efficiency of our homes and buildings, extending and connecting our pedestrian and cycle networks, and building local food resilience. It is also focused on supporting the local business community as we respond to COVID-19 and moving purposely towards regenerative tourism and a circular carbon positive economy.

The Waiheke Local Board is committed to taking a path of environmental and social integrity. As we rebuild through COVID-19, we will focus on:

- ensuring we build a more resilient and regenerative economy
- encouraging ways of working locally
- building community resilience – ensuring we are ready for climate shocks – with support structures in place for the vulnerable.

As a community, we aspire to be recognised as climate leaders in Aotearoa.

By working together, we can accelerate the positive changes required; changes that will also improve our community health and wellbeing, to meet our goal of halving carbon emissions by 2030 and being carbon positive by 2040. Through the Waiheke Local Climate Action Plan, we will also contribute towards meeting our regional, national, and international climate goals.

I invite all Waiheke Local Board Area residents and visitors to join us in our journey to becoming Tāmaki Makaurau’s first carbon positive inhabited island¹.

Cath Handley

Chairperson, Waiheke Local Board



¹ Residential island means one where inhabitants participate in a mainland economy and vice versa via commuter services

1. Introduction

The Auckland District Plan – Gulf Islands Plan and Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan, lay the foundation for Auckland’s transformation into a resilient, zero carbon community that is actively adapting to the impacts of climate change. [Te Tāruke-ā-Tāwhiri](#) sets our core goals:

- To reduce our greenhouse gas emissions by 50 per cent by 2030 and achieve net zero emissions by 2050 (against a 2016 baseline)².
- To adapt to the impacts of climate change by ensuring we plan for the changes we face under our current emissions pathway.

A new Waiheke Area Plan is currently under development which will take into account these goals and those set out within this Local Climate Action Plan.

The Waiheke Local Board area includes Waiheke Island along with Rangitoto, Motutapu, Motokorea, Motuihe, Ponui, Rākino and smaller islands, some of which are uninhabited reserves. The Waiheke Local Board area (including Rākino and Ponui islands) is home to an estimated 9500 people. It is a popular tourist destination for international and local travellers prior to COVID-19 when more than 1 million people were visiting Waiheke each year. Waiheke Island, the largest of the Islands, has around 40km of coastline. The majority of Waiheke’s population live in the western end of the island, and the eastern two-thirds of the island is mostly farmland, vineyards and native forest.

This action plan sets out how the community of the Waiheke Local Board area can make this transition a positive pathway, socially, economically and environmentally, by focusing on the actions we can take in the next three to five years. The action plan also sets out targets for the next 19 years to 2040 that continue a pathway to becoming carbon positive.

We prioritise carbon reduction measures, following the decarbonisation pathway for Tāmaki Makaurau set out in Te Tāruke-ā-Tāwhiri, which identifies eight priority areas under the goal of halving emissions by 2030 and preparing for the impacts of climate change.

Table 1 overleaf shows the relationship between plans, our carbon goals, the priority areas, and the implementation of this Waiheke Local Climate Action Plan.

Working together we can enhance the essential character of Waiheke and surrounding islands in the gulf, protecting and restoring areas from the land to the seas as we take action to address climate change.

Respecting the islands’ ecology and our rich cultural heritage are paramount. We can become a more resilient and innovative community that is celebrated for its pest free, circular, carbon positive and regenerative economy. Many initiatives are already underway to make these goals a reality.

² <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/reducing/Pages/auckland-decarbonisation-pathway.aspx>

Plans	Regional goals	Local Climate Action Plan goals	Priority areas	Implementation
Global goal	Ensuring temperature rise is below 1.5°C			
Auckland District Plan – Gulf Islands section	→ Halving emissions by 2030	→ Net Positive Carbon Islands by 2040 with carbon drawdown greater than emissions	→ Natural Environment → Built Environment → Transport → Economy → Community and Coast → Food → Te Puāwaitanga → Energy and industry	→ Climate Activator → Working Together, Partnerships → Governance, Funding & Engagement → Measuring Progress
Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan	→ Adapting to the impacts of climate change	→ See milestone goals section 3		
Long Term Plan				
Waiheke Local Board Plan				
Local Climate Action Plan				

This local climate action plan includes actions to build our resilience and includes adaptations that we must take to protect against the harmful impacts of climate change that are unavoidable. We are already beginning to experience localised impacts such as heavy rain events, storm surges and coastal inundation, extreme heat events and drought, which are expected to increase in frequency and severity. The action plan also addresses how we can offset and capture carbon through the restoration of our taiao (environment).

Waiheke Local Board will continue to:

- robustly and visibly incorporate climate change considerations into work programmes and decision making
- pursue a resilient development trajectory focused on strengthening the community’s disaster resilience and adaptive capacity
- advocate strongly for greater governing body and central government leadership and action on climate change
- increase the visibility of our climate change work
- lead by example in reducing the council’s greenhouse gas emissions
- including climate impact statements on all local board reports
- ensuring that carbon emission reductions are identified and achieved, and greater resilience built.

This action plan can only be successfully implemented with the leadership, support and participation of the Waiheke Local Board community. We invite you to join us in continuing to develop and implement this plan, and we encourage iwi, businesses, community groups and residents to continue leading our transition towards a carbon positive future in the Waiheke Local Board area.

With your feedback, as international and local knowledge and learning increase, and as new opportunities are identified, this plan will be updated every three years, and will remain a living document.

2. Our current carbon footprint

The Waiheke Local Board area is home to approximately 9500 residents. With an average carbon footprint of 6.3 tonnes per person for Aucklanders³, the Waiheke Local Board area generates an approximate 59,850 tonnes of carbon dioxide emissions (CO₂e) per annum⁴.

For the Waiheke Local Board area to become net carbon zero at the current carbon price of \$39⁵ per tonne CO₂e, would require an annual investment over \$2.334 million. This figure is indicative of the unmet environmental and social costs of how we currently live and work as a community.

Ferries and ships contribute 3.6% of Auckland's greenhouse gas emissions³. As most Waiheke Local Board area residents and visitors are fully reliant on diesel fuelled ferry travel to and from the islands, per capita carbon footprints may be even higher than average Aucklanders.

Developing a greenhouse gas inventory model for the Waiheke Local Board area has been identified as a key way of more accurately measuring the local board area's carbon footprint, targeting our climate actions and assessing their effectiveness. It is acknowledged that we cannot afford to delay emission reduction actions.

Carbon Neutral Waiheke has started pulling together the data required to create this inventory and model for Waiheke. Once completed this can be used to assess and inform future updates to this plan.

³ Production based emissions <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/response/Pages/default.aspx>

⁴ Based on an average carbon footprint of 6.3 tonnes CO₂e per annum for each of the 9500 residents

⁵ <http://www.carbonnews.co.nz/tag.asp?tag=Carbon+prices>

3. Waiheke Local Board area's zero carbon vision, goals and objectives

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan sets out detailed targets and actions to show how Waiheke Local Board Area can support achieving Auckland's goal of halving greenhouse gas emissions by 2030 and achieving carbon zero by 2050.

Waiheke Local Board has chosen to adopt even bolder climate goals, with the aim of becoming a world leader in climate change response to achieve a net positive carbon footprint by 2040.

Waiheke's vision is to become a shining example of how to respond to climate change, socially, economically, and ecologically. Our vision is to create a resilient, self-sustaining, independent, and net carbon positive community where the mauri of people (tangata), the atmosphere (kōhauhau) and the natural environment (taiao) on land (whenua) and sea (moana) thrives.

Waiheke climate goals	Milestones
Net Positive Carbon Islands by 2040 with carbon drawdown greater than emissions	2040
<ul style="list-style-type: none">Islands free of the pollution, noise, emissions and costs of petrol, hybrid (non plug-in), and diesel engines by 2030⁶	2030
<ul style="list-style-type: none">Carbon emissions halved by 2030 (from 2016 baseline)⁷	2030
<ul style="list-style-type: none">A circular food economy with 100% of all food and green waste composted in the Waiheke Local Board area by 2025	2025
<ul style="list-style-type: none">Waiheke Local Board Area Carbon Inventory Model completed by 2023	2023

⁶ <https://www.electricisland.co.nz/copy-of-intro>

⁷ <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-by-laws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/Pages/default.aspx>

Table 1: Waiheke Climate Goals

Through ongoing measurement, Waiheke aims to verify these goals as science-based targets and milestones, and will review and update this Waiheke Local Climate Action Plan every three years.

Overarching objectives:

- To reduce and eventually eliminate our use of fossil fuels (petrol, oil, diesel, gas, coal).
- To educate, encourage and incentivise changes to our lifestyles, businesses, infrastructure, buildings, consumption patterns, behaviour and environment that reduce or eliminate greenhouse gas emissions (mitigation).
- To restore the natural environment (taiao) on land (whenua) and sea (moana).
- To increase our ability to respond to the climate changes already locked in by helping tangata (people) prepare, adapt and become more resilient.

4. A Te Ao Māori approach

A Te Ao Māori lens has been used to help frame our thinking about and approaches to climate change. Key values and principles of the Te Ora o Tāmaki Makaurau Wellbeing Framework developed by the Mana Whenua Kaitiaki Forum in response to Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan include⁸:

- Manaakitanga
- Kaitiakitanga/Tiakitanga
- Whānaungatanga
- Rangatiratanga
- Mātauranga
- Ōritanga
- Tōnuitanga

These principles will be applied as we work to develop and implement this action plan.

Remembering the world is a dynamic and complex ecosystem of whakapapa interconnections and interdependencies where all things – people, birds, fish, trees, weather patterns – are members of a cosmic family.

From a Te Ao Māori perspective, we need to consider equity and fairness from the perspective of nature, place and people. Recognising the rights and interests of nature, place and people from a whole living systems perspective is critical.

⁸ <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/response/Pages/te-ora-o-tamaki-makaurau-framework.aspx>

5. Developing the plan

The development of this climate action plan included a stocktake of the local and Auckland-wide low carbon initiatives, which are making a positive contribution towards reducing the Waiheke Local Board area's carbon footprint. Waiheke has strong business, iwi and community organisations that support these climate goals with over 60 existing initiatives identified that are already underway. A summary of these initiatives is provided in Appendix 1. This action plan aims to accelerate or expand these.

Representatives of the organisations involved in existing Waiheke-based initiatives were invited to participate in a working group to develop this plan.

Due to the COVID-19 pandemic the Climate Action Hui that was planned was unable to be held in person. As an alternative, online meetings and a series of one-on-one interviews were held with key community stakeholders, Auckland Council staff, and council-controlled organisations. A full list acknowledging these contributions is contained in Appendix 2.

This action plan also draws strongly on the consultation undertaken for other plans and on insights drawn from community initiatives including:

- Waiheke Local Board Plan 2020
- Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan 2020
- Waiheke Food Resilience Hui 2020
- Essentially Waiheke 2018
- Waiheke Destination Management Plan (currently under development)
- Project Forever Waiheke's Sustainable Community and Tourism Strategy
- Other existing plans and initiatives highlighted within each section of the action plan.

6. Adapting to climate change

Auckland Council has produced a Climate Change Risk Assessment technical report series to assess the impacts of climate change on people, environment and infrastructure, including an assessment of climate change risks to the Auckland economy⁹. Actions included in the Waiheke Local Climate Action Plan have been informed by the risks identified (see section 6.2 for a summary of climate change impacts, risks and proposed mitigation).

⁹ <https://www.knowledgeauckland.org.nz/media/2045/auckland-economy-climate-change-risk-assessment-aecom-ateed-august-2020.pdf>

The council is currently developing location specific plans which will help us better understand how the coastline will be impacted by climate and coastal hazards in the Waiheke Local Board area. Details on Auckland’s natural hazard risks and actions can be viewed at the Auckland Emergency Management website, as well as resources to help us prepare for these hazards both at home and at work.¹⁰

6.1 A nature-based approach

Nature-based solutions are increasingly being used, taking an ecosystem-based (whakapapa based) approach to dealing with the social, economic and environmental challenges of climate risks.

These include ‘Ecosystem-based Disaster Risk Reduction’ (Eco-DRR) which is the sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim of achieving sustainable and resilient communities.

“Well-managed ecosystems, such as wetlands, forests and coastal systems, act as natural infrastructure, reducing physical exposure to many hazards and increasing socio-economic resilience of people and communities by sustaining local livelihoods and providing essential natural resources such as food, water and building materials.”¹¹

The table overleaf in section 6.2 summarises the main climate change impacts, community risks and some of the nature-based opportunities to mitigate impacts in the Waiheke Local Board area and the location of related actions within this action plan.

¹⁰ <https://www.aucklandemergencymanagement.org.nz/>

¹¹ <https://pedrr.org/>



Source: UNEP/PEDRR 2020

- | | | |
|---|---|---|
|  Meeting the needs of people |  Taking care of our planet for the long-term |  Dealing with climate change |
|  Green infrastructure |  Wetland restoration |  Integrated water resource management |
|  Blue infrastructure |  Climate smart agriculture/agroforestry |  Integrated coastal zone management |
|  Landscape restoration |  Urban greening |  Protected areas |
| |  Sustainable land & integrated fire management | |

Figure 1: Nature-based solutions to climate change, source: UNEP/PEDRR 2020

6.2 Waiheke climate change impacts and risks

Climate change impacts	Community risks	Mitigation	Section/s
Drought	<ul style="list-style-type: none"> Water shortages Decline in water quality Water poverty Unable to grow kai Impacts on biodiversity Impacts on viticulture, horticulture and pastoral farming Fire risk Impacts of holiday rentals on water availability for locals 	Integrated Water Resource Management Plan for: <ul style="list-style-type: none"> Increased water storage Adopt 'spongy island' approach with hybrid green/blue/grey infrastructure to maximise water storage Emergency planning Aquifer monitoring Fire risk management Water awareness for tourists, holiday rentals 	9.1 9.2 9.5
Increased storm events, intense rainfall, cyclones	<ul style="list-style-type: none"> Urban drainage Heavy rainfall Increased stormwater flooding Slips and landslides Increased maintenance, repair costs and insurance premiums Coastal surge damage Temporary loss of essential transport, freight food supplies and power services Damage to, or destruction of, ports, ferry terminals, marinas and moorings¹² Reduced access to islands – impact upon pleasure craft related tourism⁸ 	<ul style="list-style-type: none"> Nature-based solutions (tend to have lower maintenance costs than hard infrastructure) Adaptation or retreat of infrastructure, buildings and housing with the potential to be impacted Resilient ferry terminal, marina designs Emergency planning and supplies Increasing disaster resilience by building stronger social networks and supporting whānau and community readiness 	9.2 9.3 9.4 9.5
Sea level rise and more coastal flooding events	<ul style="list-style-type: none"> Inundation Storm surges Stormwater flooding Inability to insure Loss of property Loss of wāhi tapu/significant historical sites Demand for seawalls to protect coastal properties 	Identification and planning for impacted properties: <ul style="list-style-type: none"> Integrated coastal management plan Wetland restoration Installation, adaptation or retreat of infrastructure, buildings and housing with the potential to be impacted 	9.5 9.7
Temperature Increase	<ul style="list-style-type: none"> Spike in very hot days Increased seasonal visitor water use More days when energy is required to cool buildings ('cooling degree days') Changes to energy supply and demand Stress on terrestrial and marine biodiversity Higher levels of pests and diseases Fire risk 	<ul style="list-style-type: none"> Integrated Water Management Plan Tree planting to increase shade – Onetangi and Oneroa Visitor education Climate lense on restoration plans allowing for species able to cope with hotter conditions Ongoing investment in pest control 	9.1 9.2 9.4 9.5
Stream, wetland and ocean temperature increase and acidification	<ul style="list-style-type: none"> Increasing pressure on local species Higher evaporation and transpiration rates from land and plants to the air Higher levels of pests and diseases The distribution of human, plant, and animal diseases changing 	<ul style="list-style-type: none"> Leadership on climate action Integrated coastal management Rāhui and other methods to increase marine protection Increased wetland restoration to build a bigger buffer zone 	9.1 9.4 9.5

¹² <https://www.knowledgeauckland.org.nz/media/2045/auckland-economy-climate-change-risk-assessment-aecom-ateed-august-2020.pdf>

-
- Loss of taonga species
 - Environment not meeting tourist expectations¹³
 - Increased mitigation and monitoring to ensure protection reflects rapidly changing ecosystem needs
-

6.3 Transitional risks and opportunities

In addition to the physical risks identified above, there are transitional risks and opportunities that arise from the process of becoming a carbon positive economy. The following transitional risks have been identified within the Auckland Economy Climate Change Risk Assessment prepared for ATEED in 2020¹³.

Transitional risks ¹⁴	Mitigation	Sections
<ul style="list-style-type: none"> • Increased costs of transporting input materials across the sectors due to increasing fuel costs • Higher electricity costs causing reduction in demand, or reductions in profit margins • Increased costs of inputs to production due to price on carbon • Additional capital outlays required for fuel switching and energy efficiency retrofits in response to policy, regulation, consumer demand or market signals, stressing balance sheets and cash flows • Stranded assets: investments see their economic life curtailed due to technological, regulatory and/or market changes, stressing balance sheets • New costs of compliance associated with carbon-related regulation such as the Task Force of Climate-related Financial Disclosures (TCFD) causing reductions in profit margins via increased operating costs • Reputational risk if skills required to transition, or prosper from the transition, are not present in the labour market • Increased risks from wildfires due to afforestation efforts • Reduction in the competitiveness of exports if other markets do not take action to reduce emissions • Increased Directors and Officers (D&O) liability insurance costs 	<ul style="list-style-type: none"> • Waiheke Climate Fund • Waiheke Carbon Positive Business Programme • Waiheke Destination Management Plan 	<ul style="list-style-type: none"> • 9.5 • All

¹³ <https://www.knowledgeauckland.org.nz/media/2045/auckland-economy-climate-change-risk-assessment-aecom-ateed-august-2020.pdf>

¹⁴ <https://www.knowledgeauckland.org.nz/publications/auckland-economy-climate-change-risk-assessment/>

7. Implementing the plan

The intention of this action plan is for implementation and ownership by the whole community. A Climate Activator position will be created to coordinate and monitor progress on the action plan and facilitate an advisory group to support its implementation. The Waiheke Local Board will support the implementation of this action plan where possible through a variety of mechanisms including advocacy (also to other governing bodies); funding to enable local project delivery; further investigation of potential climate initiatives; leadership (role-modelling, delivering projects directly as well as enabling and encouraging others); partnerships; promotion; monitoring and recognition.

8. Finance

Auckland Council adopted a new climate action investment package as part of the Recovery Budget 2021-2031 with a total value of \$152 million over 10 years to implement Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan including supporting some of the council-led actions in this local climate action plan.

This regional funding provides for various projects focused on enabling Aucklanders to reduce household emissions and become resilient to climate impacts including the establishment of a new Community Climate Fund. This will expand the pool of contestable funding that Waiheke community groups can apply for to implement community-led actions in this plan.

A core action proposed within this plan is the establishment of the Waiheke Climate Fund. This would set up a mechanism for voluntary offset contributions for all people travelling to or residing in Waiheke. Visitors and residents will be able to invest directly in accelerating the local climate actions that reduce carbon emissions, build community and ecosystem resilience, or sequester carbon on land or in the ocean. The fund would support:

- Accelerating the transition to Carbon Positive
- Investing in the actions identified within this plan
- Enabling local community and business climate action projects
- Ensuring a just transition, equitable access to renewable energy and building greater social and economic resilience and
- Providing scholarship opportunities to Waiheke rangatahi wanting to enter careers which focus on climate solutions.

The Waiheke Local Board currently provides funding for some of the climate actions identified in this plan through its locally driven initiatives budget and Environment Grants programme. There are multiple funding sources already available for a variety of the climate actions identified, some of which are included within this plan.

9. The action plan



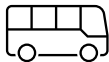

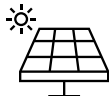

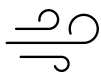

This plan builds on the Waiheke Local Board area's existing environmental and sustainability initiatives, and the commitment to adopt and implement a local climate action plan under the Waiheke Local Board Plan 2020. It focuses on the priority areas from Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan which include: Natural Environment, Built Environment, Transport, Economy, Community and Coast, Food, Te Pūawaitanga o Te Tātai and Energy and Industry.

For each of these areas the action plan:

- Sets local targets based on achieving regional, national and global greenhouse gas emission reduction targets
- Includes opportunities to expand and accelerate existing regional and local initiatives
- Includes actions suggested through our consultation with community stakeholders including:
 - flagship climate action projects (highlighted in blue) which we will endeavour to support and where required/possible, prioritise seed funding for
 - a monitoring framework for measuring progress against these targets.



10. Flagship projects

Action area	Flagship projects	
1. Natural environment		<ul style="list-style-type: none"> → Urban Ngāhere Grow Plan → Integrated Water Management Plan → Waiheke Marine Project
2. Zero carbon built environment		<ul style="list-style-type: none"> → Healthy Homes on Waiheke Programme
3. Zero carbon transport		<ul style="list-style-type: none"> → Public transport 100% electric by 2030 → Complete pedestrian and cycle links and infrastructure in the Waiheke 10-year Transport Plan
4. Zero Carbon economy		<ul style="list-style-type: none"> → Establish Waiheke Climate Fund → Waiheke Destination Management Plan → Waiheke Carbon Positive Business Programme
5. Thriving communities and coast		<ul style="list-style-type: none"> → Climate Activator role → Waiheke Green House Gas Inventory Model → Annual Community Resilience Workshop → Climate Event → Solar battery charging systems for community emergency facilities
6. Food		<ul style="list-style-type: none"> → Piritahi Marae Māra Kai model gardens → Waiheke Kai Charter → 100% food and green waste composted on island
7. Te puawaitanga o Te Tātai		<ul style="list-style-type: none"> → A national wananga for Māori youth climate leaders on Waiheke → Marine Ecosystem Restoration and Protection – Rāhui and Mātauranga Māori Climate Monitoring
8. Energy and industry		<ul style="list-style-type: none"> → Waiheke electric ferry charging by 2029 → Just Transition programme for local businesses

Further details of flagship actions are contained within each section of the action plan and are shown with light blue shading.

10.1 Natural environment – Taiao māori

Toitū te marae a Tane-Mahuta, toitū te marae a Tangaroa, Toitū to tangata

If the land is well and the sea is well, the people will thrive

Waiheke and the surrounding islands are a place of great beauty and sanctuary within the Hauraki Gulf, Tīkapa Moana. At the same time, the land and marine ecosystems are under immense pressure as we begin to experience the impacts of climate change more strongly. Climate change, in combination with pollution, development and overfishing is impacting our taonga species.

Ngāti Pāoa have recently placed a rāhui on four marine species around Waiheke in response to these concerns. Additional initiatives will be needed to fully restore and protect ecosystems and keystone species such as kelp and snapper.

Strategically using Sustainable Land Management (SLM), restoring, maintaining and creating more biodiverse green spaces within the Waiheke Local Board area and achieving pest free status will help reduce the impact of climate change on our communities, as well as maximise carbon sequestration by capturing carbon from the atmosphere.

Sustainable land management approaches will aim to increase planting and through parks, reserves, along waterways, wetlands, around the coast, in village centres, and on rural and urban private property, particularly on marginal land that is vulnerable to erosion and slips.

These practices and planting will help:

- keep us cooler in summer
- reduce the impact of drought, erosion and slips
- support aquifer levels
- support our native ecosystems and their biodiversity
- buffer the impacts of storms and sea level rise on the coast
- enhance the mauri (life essence) of the Hauraki Gulf, Tīkapa Moana, the islands making up Waiheke Local Board area.

Forest covers approximately 40% of the Waiheke Local Board land area, with:

- 33.5% of Waiheke Local Board's road parcels
- 55.8% of public parks
- 35.0% of other public land, and
- 41.3% of private land¹⁵

The regional Urban Ngahere Strategy's¹⁶ target average canopy cover is 30% (Auckland Council, 2019). While the tree coverage on Waiheke is already higher than the regional target, some of our villages such as Onetangi and Oneroa have large areas of hard surfaces. Over the next decade, by increasing the capacity of local nurseries and access to supporting funding and resources, we can work rapidly to increase the amount of tree canopy, and to reduce rapid stormwater flows.

¹⁵ Draft Waiheke Local Board Urban Ngahere Report

¹⁶ Auckland Council (2019). Auckland's Urban Ngahere (Forest) Strategy. Auckland Plan, Strategy, and Research Department, Auckland

The Waiheke coast includes rocky shores, sandy shores, muddy estuarine shores, mangroves, seagrass and salt marshes. It is home to nine regionally and nationally significant wetlands scheduled as Significant Ecological Sites (SES)¹⁷ within the Auckland City Council District Plan – Hauraki Gulf Islands Section. Wetlands cover 1.3% of the island's land area and play a key role in sequestering carbon, buffering the effects of climate change, and supporting climate adaptation and resiliency for Waiheke.

Wetland networks, estuaries, rocky and sandy shores are key corridors that act as stepping stones, allowing species to move to cooler areas and adapt to rising temperatures as our climate changes. The function of these areas supply roosting, nesting, breeding areas, feeding sites and migration corridors for native fauna, habitat and dispersal corridors for native flora – as well as the provision of flood control, water filtration, and carbon sinks.¹⁸

Wetlands and marine protected areas also help dissipate wave energy, mitigating the impacts of fishing, allowing the regeneration of species and providing alternative ecotourism opportunities. Stakeholders have asked for an extensive increase in marine protection and a stop to bottom trawling to create a healthier marine environment and increased marine carbon sequestration.

The pressures caused by sea level rise, drought, pests and diseases will increase as our climate changes. The preference under Auckland's Urban Ngahere Strategy is for the use of native species, which improve the linkages between green spaces, including wetlands, through ecological corridors. We can also choose species that will better cope with our changing climate.

Accelerating restoration, protection, conservation, kaitiakitanga and the use of mātauranga Māori in Waiheke Local Board area from the land to the sea will be critical to ensuring Waiheke's resilience and adaptation to climate change.

Current activities, actions, programmes and plans

- [Waiheke Open Space Network Plan 2012](#)
- [Waiheke Ecological Works Restoration Programme 2017](#)
- [Waiheke Marine Protection Research Report 2015](#)
- [Waiheke Island Marine Reserve Network – Gaps Analysis and Feasibility Study 2016](#)
- [Priorities for the Restoration of Significant Wetlands within the Waiheke Local Board 2012](#)
- [Ecological Survey of Waiheke Island North-west Coastline – December 2016](#)
- [Te Korowai o Waiheke: Pest Free Waiheke](#)
- [Auckland's Urban Ngahere \(Forest\) Strategy](#)
- Waiheke Urban Ngahere Report
- See Appendix 1 for a detailed list of projects

¹⁷ Three of the wetland sites are entirely on private land while the remaining sites are a mix of council reserve (local and regional parks), Department of Conservation reserve, Forest and Bird reserve land and private property.

¹⁸ [Priorities for the Restoration of Significant Wetlands within the Waiheke Local Board 2016](#)

Goals:

- Offset 100% Waiheke Local Board areas residual annual carbon emissions by 2040
- Create an **Urban Ngāhere Grow Plan** for Waiheke Local Board area by December 2022
 - Plant more than 100,000 trees in Waiheke Local Board area per annum from 2023¹⁹
 - Waiheke Island is the world's first predator-free urban island by 2025
 - Collaborate with partners to increase the Waiheke Local Board areas tree canopy coverage to ≥ 45 per cent by 2030
- At least 30% marine protection by 2030²⁰
- A ban on bottom trawling fishing practices in the Hauraki Gulf by 2025
- Accelerate the restoration and protection of wetlands and coastal marine areas to increase community and ecosystem resilience, encourage defensive riparian planting, maximise carbon sequestration and allow climate adaptation
- Taonga species are thriving
- Strengthen resilience to climate-related hazards and natural disasters through the use of green infrastructure and the development and implementation of an **Integrated Water Management Plan**²¹
- Monitor implementation of this action plan annually

Opportunities and benefits:

These actions will have much broader positive impacts:

- | | |
|---|---|
| → Carbon sequestration | → Improved health and wellbeing |
| → More shelter and sunshade provided | → Increased property values |
| → Less overheating | → Reduced flood risk |
| → Biodiversity and ecosystem health increased | → Sustains and enhances mauri |
| → Air quality improved | → Increased resilience |
| → Prevents erosion and improves water quality | → Local sources of food |
| | → Stronger focus on terrestrial marine connection |

¹⁹ This number may be adjusted as the Waiheke Urban Ngāhere Grow Plan for Waiheke Local Board is developed

²⁰ Hauraki Gulf Forum, supporting all available tools, including customary protection measures and resourcing of their enforcement

²¹ Subject to Healthy Waters resourcing

Natural environment actions

Goal	Action	Time scale	Recommended lead
Offset residual emissions	<ul style="list-style-type: none"> Maximise the use of the Waiheke Climate Fund and ETS²² carbon credits, and other available funding sources to accelerate planting in parks, reserves and open places to offset carbon emissions for individuals and local businesses 	Years 1-3	All
	<ul style="list-style-type: none"> Continue to use planting days as an educational opportunity for local residents and schools about the issues we face and the available solutions 	Ongoing	All
≥45% tree canopy cover – 100,000 trees pa – support implementation of Auckland’s Urban Ngahere (Forest) Strategy	<ul style="list-style-type: none"> Develop, adopt, and implement a Waiheke Urban Ngahere Grow Plan which will: <ul style="list-style-type: none"> accelerate restoration identify and prioritise specific areas for further planting on all Waiheke islands – in accordance with existing restoration, management plans and research, including wetland and coastal areas to meet our climate goals create bush corridors for plant, bird and insect dispersal identify areas for potential planting of permanent forest of ≥1ha or more that are eligible for carbon credits ensure sufficient broadleaf seedlings are established under kanuka/manuka to ensure the next succession of forest growth provide increased shade and stormwater detention in villages, residential areas, parks, and playgrounds reduce erosion, slips and sediment loss prioritise funding build nursery capacity and offset residual emissions from hard-to-reduce sources Identify and prioritise locations for future planting on public land in partnership with mana whenua 	Year 1	Local Board / All
	<ul style="list-style-type: none"> Continue to implement key projects from the Waiheke Open Space Network Plan (2015-2025) 	Ongoing	Auckland Council – Parks Services
	<ul style="list-style-type: none"> Build on and expand Māori-led environmental initiatives based on a tikanga Māori approach, for example 	Ongoing	Iwi

²² Emission Trading Scheme

Goal	Action	Time scale	Recommended lead
	māra kai, pā harakeke and rongoā plantings, including access to additional land as required		
	<ul style="list-style-type: none"> Ensure climate change and mitigation and adaptation measures are included in all Waiheke Local Board and Department of Conservation park and reserve management plans and restoration plans 	Ongoing	Auckland Council / DOC
Wetlands and coastal marine areas	<ul style="list-style-type: none"> Advocate for a ban on bottom trawling fishing practices in the Hauraki Gulf 	Years 1-5	Auckland Council / Hauraki Gulf Forum / Local Board
	<ul style="list-style-type: none"> Increase the protection, restoration, rejuvenation, and replenishment of puna wai (freshwater springs), repō (wetlands) and moana (coastal seas and harbours) 	Ongoing	Auckland Council / DOC / Hauraki Gulf Forum / Local Board
	<ul style="list-style-type: none"> Support the Waiheke Marine Project, and environmental and community groups and continue to work with mana whenua and other key stakeholders to uphold and extend rāhui and marine reserves 	Years 1-3	Local Board / All
Integrated Water Management	<ul style="list-style-type: none"> Strengthen resilience to climate-related hazards and natural disasters by creating an Integrated Water Management Plan to create 'spongy' islands: <ul style="list-style-type: none"> maximising biodiversity maximising water detention and retention – for potable and/or ecosystem use ensure sufficient potable water storage to meet household, business and emergency service requirements use council facilities to provide 'welfare water' sites during drought periods slowing the path of stormwater from land to sea mitigating the impacts of stormwater flooding and drought reducing sedimentation minimising the adverse impacts of septic tanks and sewage treatment using nature-based solutions and ecosystems based disaster risk reduction techniques 	Years 1-2	Auckland Council – Healthy Waters ²³
Tree protection	<ul style="list-style-type: none"> Advocate for the adoption of regional or national mechanisms which 	Years 1-3	All

²³ Subject to Healthy Waters funding

Goal	Action	Time scale	Recommended lead
	introduce greater protection for trees on private land and/or make the protection of trees easier		
Street trees and road corridors	<ul style="list-style-type: none"> Develop a programme of street tree planting across Waiheke village centres that will increase village tree cover to ≥30% 	Years 1-3	
Parks and open spaces	<ul style="list-style-type: none"> Continue to support implementation of ecological restoration plans Support expansion of the Piritahi Marae māra kai, sustainability and food initiatives²⁴ 	Years 1-5 Years 1-3	Local Board
Private gardens, property	<ul style="list-style-type: none"> Offer support to encourage tree planting and tree protection covenants on private properties 	Years 1-5	
Horticultural, viticultural and pastoral farmland	<ul style="list-style-type: none"> Offer support to encourage planting and covenants on marginal land and the uptake of regenerative horticultural and agricultural practices 	Years 1-5	
Green infrastructure	<ul style="list-style-type: none"> Continue to encourage and enable the installation of water sensitive design, natural stormwater assets and other green infrastructure 	Ongoing	
Monitoring	<ul style="list-style-type: none"> Monitoring implementation in accordance with the monitoring framework contained in section 12 in partnership with mana whenua and key community groups 	Annual	

What you can do:

- Support the Waiheke rāhui and initiatives to establish greater marine protection
- Plant native trees and plants to support birds, bees, and native wildlife in your garden
- Join a local restoration group or look out for an event in your community:
 - Waiheke Resources Trust
 - Waiheke Collective
 - Forest and Bird
 - Hauraki Gulf Conservation Trust
- Seek funding for your restoration project:
 - Local Board Community Grants,
 - Regional Environment and Natural Heritage Fund
 - Foundation North

²⁴ Waiheke Local Board Plan 2020

Case Study: Ngāti Paoa Rāhui

Ngāti Pāoa have placed a rāhui on the island to stop four species of kaimoana from collapsing. The rāhui applies from the foreshore to 1 nautical mile out to sea. Ngāti Pāoa are deeply concerned about declining inshore biodiversity and have taken urgent action as kaitiaki.

The rāhui follows a series of hui with the community and mana whenua about the mauri of Tikapa Moana.

The Waiheke community has shown strong support for the rāhui. Rāhui are used to improve kaimoana stocks and build back ecosystems. The introduction of full marine protection in other areas has resulted in the re-establishment of mangroves, sea grass and kelp – all of which sequester large amounts of carbon. It is estimated that marine areas can capture many times more per unit area than land-based forests.²⁵

Ngāti Pāoa have applied for recognition of the rāhui by a temporary closure application under the Fisheries Act. If granted by the Minister of Oceans and Fisheries, signs, boundary markings and marine monitoring will be put in place and people who break the fishery closure can be prosecuted.



Figure 2. Ngāti Pāoa and tohunga leading the dawn ceremony to place a rāhui on the waters surrounding Waiheke Island.

²⁵ <https://oceansnz.com/2019/10/15/new-zealands-oceans-contributing-to-our-zero-carbon-future/#:~:text=Coastal%20ecosystems%20such%20as%20mangroves,area%20than%20land%2D%20based%20forests>

10.2 Built environment – Taiao hanga

Ehara tāku toa I te toa takitahi, engari he toa takitini

My strength is not as an individual, but as a collective

Over the next decade we need to improve the energy efficiency of all our buildings.

This can be supported by switching to 100% renewable energy and ensuring that all new residential and commercial buildings are energy efficient and designed to eliminate carbon emissions.

Buildings account for over 10 per cent of Auckland’s total emissions. The Waiheke Local Board Area has a total of 3780 occupied homes and an additional 2019 homes unoccupied at the time of census. While many older smaller homes are being replaced, only 24 additional homes have been built since 2013²⁶.

We can accelerate the retrofit of our existing buildings to improve their energy efficiency, which will save money on our power bills and prevent unnecessary energy usage. By upgrading our homes with insulation and efficient heating, we can have big wins for health too through creating warmer, drier homes.

We can also build our resilience by creating a growing distributed grid of solar PV and wind energy sources with battery storage. Enabling smaller homes and other more affordable lower-impact living options may provide more equitable access to housing. We can also avoid construction within the flood and coastal inundation prone areas.

We can also create a circular economy by minimising waste and maximising recovery of construction materials to reduce carbon emissions. Construction and demolition waste currently makes up 50 per cent of Auckland’s total waste stream – a figure which is growing. Clean Island Waiheke has established a construction waste sorting facility that enables the local recovery and reuse of construction materials.

With Waiheke residents reliant on tank water, islanders are very aware of the need for water conservation and efficiency. Auckland’s recent drought has reinforced the need for greater on-site water storage capacity as our climate changes. As part of the development and implementation of an Integrated Water Management Plan, increased storage of potable water is recommended. This could include exploration of adding additional community and Fire and Emergency New Zealand accessible supplies from buildings with large roof areas in partnership with property owners.

It is important to better understand the capacity of Waiheke’s underground aquifer and protect this taonga for times of urgency. The effect of top-ups from the aquifer over summer, and the use of bores for private and commercial use need to be better understood to ensure that its use is sustainable into the future.

²⁶ <https://censusauckland.co.nz/files/Waiheke%20LB%202018%20Census%20info%20sheet.pdf>

Current activities, actions, programmes and plans

- [Building for Climate Change Programme](#)
- [Waiheke Local Board Housing Strategy](#)
- [Homestar, Greenstar and NabersNZ](#)
- [Warmer Kiwi Homes Grants](#)
- [Healthy Homes Initiative](#)
- [Healthy Homes Standards](#)
- [Kāinga Ora Retrofit Programme](#)
- Tikapa Moana Hauraki Gulf Islands Waste Plan

Goals

- Reduce carbon emissions from community facilities by 50 per cent by 2030²⁷
- Maximise the energy efficiency of all buildings²⁸:
 - Retrofit 50% of existing residential and commercial buildings to a high standard of energy efficiency by 2030 and 100% by 2035
 - Replace 75% of gas heaters in existing residential and commercial buildings with electric heat pumps by 2030 and 100% by 2035
 - Replace 50% of gas water heaters in existing residential and commercial buildings with electric heat pump or solar water heaters by 2035
- All new buildings operate at net zero carbon by 2030
- 100 per cent of Waiheke's buildings able to operate at net zero carbon by 2040
- An Integrated Water Management Plan ensures sufficient potable water supply, and sustainable use of the Waiheke's freshwater aquifer
- Reduce construction and demolition waste 50 per cent by 2030 and to zero by 2040
- Avoid and manage risks to buildings due to extreme weather events, drought, increased fire, weather and ongoing sea level rise
- Avoiding building in flood and inundation prone areas such as coasts and flood plains

Opportunities and benefits

These actions will have much broader positive impacts:

- Lower power, water, and waste bills
- Warmer, drier, healthier homes
- Healthier, more productive work environments
- Cleaner air
- Buildings durable and adaptable enough to meet the needs of future generations of occupiers
- Reuse of construction materials and a circular economy for construction materials
- Employment opportunities for a skilled, sustainable construction sector

²⁷ From a baseline year of 2016

²⁸ Adapted from Te Tāruke-ā-Tāwhiri

The built environment: Actions

Goal	Action	Time scale	Recommended lead
Building for climate change	<ul style="list-style-type: none"> Support the introduction of national zero carbon construction targets and building code requirements 	Years 1-3	Auckland Council – Chief Sustainability Office Auckland Council Community Facilities
	<ul style="list-style-type: none"> Advocate for the introduction of mandatory building energy efficiency labels 	Years 1-3	
Resilient community facilities	<ul style="list-style-type: none"> Ensure all new council community facilities are fossil fuel-free and meet Greenstar 5-star requirements 	Ongoing	Auckland Council Community Facilities
	<ul style="list-style-type: none"> Maximise water capture from community facilities for community backup water supply 	Years 1-3	Auckland Council – Community Facilities
	<ul style="list-style-type: none"> Accelerate community facility energy efficiency renewals and eliminate fossil fuel use where possible 	Years 1-3	Auckland Council – Community Facilities
	<ul style="list-style-type: none"> Explore the feasibility of adding solar PV at the Oneroa wastewater treatment facility 	Year 1-3	Watercare
	<ul style="list-style-type: none"> Install a solar PV battery system and electric vehicle charging at the Council Service Centre 	Years 1-3	Auckland Council – Community Facilities
	<ul style="list-style-type: none"> Support the completion of the Waiheke Sustainability Centre Solar PV system including additional panels, batteries and vehicle charging 	Years 1-3	Auckland Council – Community Facilities
Retrofit Existing Residential Buildings	<ul style="list-style-type: none"> Support expansion of the Healthy Homes on Waiheke Programme to improve household energy efficiency, including²⁹: <ul style="list-style-type: none"> curtains insulation upgrades the uptake of electric heat pump (fossil fuel free) space and water heating Apply for MBIE Support for Energy Education in Communities (SEEC) Programme 	Years 1-3	Local Board / Waiheke Health Trust / Habitat for Humanity Auckland / EECA
	<ul style="list-style-type: none"> Support Māori-led initiatives for home health, energy-efficiency and zero carbon construction 	Ongoing	WDHB / EECA
Vulnerable communities	<ul style="list-style-type: none"> Partner with Kāinga Ora to ensure the acceleration of the Kāinga Ora Retrofit Programme within Waiheke Local Board area 	Ongoing	Local Board / Kāinga Ora
	<ul style="list-style-type: none"> Identify opportunities to partner to enable and accelerate the uptake of distributed solar, wind and other renewable energy generation within vulnerable communities to alleviate energy poverty and enable greater levels of self-sufficiency 	Years 1-3	
Circular economy	<ul style="list-style-type: none"> Encourage and support the recovery and reuse of construction and demolition materials and 	Ongoing	

²⁹ Including those energy efficiency initiatives offered by Auckland Council, Ministry of Business, Innovation and Employment, Energy Efficiency Conservation Authority, New Zealand Green Building Council and others (see “what you can do” overleaf).

Goal	Action	Time scale	Recommended lead
	the inclusion of waste and resource recovery management plans and diversion targets within procurement specifications		Auckland Council – Community Facilities
	<ul style="list-style-type: none"> Ensure waste minimisation targets are included within contracts for community facility renewals 	Ongoing	
Retrofit existing commercial, industrial buildings and schools	<ul style="list-style-type: none"> Partner with Waiheke Connect, Tourism Waiheke, Auckland Unlimited and EECA to accelerate the creation of: <ul style="list-style-type: none"> zero emission village centres a local commercial retrofit programme energy efficient buildings and the uptake of onsite renewable energy generation 	Years 3-10 (by 2030)	Commercial property owners / Ministry of Education
Integrated Water Management Plan (see also 11.1) – water efficiency	<ul style="list-style-type: none"> Continue to support water efficiency and increased water storage through the provision of subsidies, grants, programmes and information which support the installation of water efficient: fixtures, fittings, flow restrictors, appliances, and larger water tanks Continue to support water efficiency and increased water storage through the provision of information 	Ongoing	Local Board Watercare
	<ul style="list-style-type: none"> Monitor residential and commercial water usage to ensure sufficient on island storage to meet changing weather patterns – providing any data required to inform the development of the Integrated Water Management Plan 	Year 1	Property owners
New development buildings – transit orientated and zero carbon	<ul style="list-style-type: none"> Partner with building owners and developers to ensure: <ul style="list-style-type: none"> transit centred, are fossil fuel free, zero emission developments climate resilient commercial buildings and a high uptake of onsite renewable energy generation 	Ongoing	Auckland Council / property owners and developers
	<ul style="list-style-type: none"> Encourage a range of buildings, offering a variety of housing choices, to accommodate the needs of a diverse community and small businesses 	Ongoing	
	<ul style="list-style-type: none"> Green infrastructure – encourage the installation of white roofs, living walls, roofs and water systems that mitigate the impact of our changing climate 	Ongoing	
	<ul style="list-style-type: none"> Encourage universal design – with buildings durable and adaptable enough to meet the needs of future generations of occupiers 	Ongoing	
Climate Adaptation and Risk Management	<ul style="list-style-type: none"> Provide tools, resources and templates for households and businesses to identify and manage climate change risks 	Ongoing	Auckland Council – Auckland Emergency Management

Goal	Action	Time scale	Recommended lead
Sustainable Construction Capability	<ul style="list-style-type: none"> Partner with Placemakers, tertiary education providers, Clean Island Waiheke, local developers and builders to educate the local construction sector on zero carbon construction practices 	Years 1-5	Local Board / local businesses
	<ul style="list-style-type: none"> Encourage the uptake of social and sustainable procurement requirements by local building and construction businesses, e.g. Amotai 	Years 1-5	

What you can do:

At home:

- Warmer Kiwi Homes Grants – home owners can access funding for up to 80% of the cost of insulation and energy efficient home heating – eeca.govt.nz/our-work/programmes-and-funding/efficient-homes/
- Borrow a HEAT Kit (Home Energy Audit Toolkit) from an Auckland Library to find out which areas in your home are leaking heat and wasting energy
- Do an online HomeFit assessment to check how easily a home can be kept warm, dry and safe – homefit.org
- Get free expert advice on the right materials and strategies to create a warmer, drier and more sustainable home – visit aucklandcouncil.govt.nz and search “eco design advice”
- Building or buying new? Look for Homestar certification – nzgbc.org.nz
- Guidance on water tank installation: <https://www.aucklandcouncil.govt.nz/environment/looking-after-aucklands-water/rainwater-tanks/Pages/rainwater-tank-installation-maintenance.aspx>

At work:

- Office space? Assess the energy efficiency of your business with NabersNZ – nzgbc.org.nz
- Need energy efficiency expertise? Programmes and funding – www.eeca.govt.nz/our-work/programmes-and-funding/productive-and-low-emissions-business/
- New space? Look for NabersNZ or Greenstar certifications – nzgbc.org.nz

Case study: Solar at Waiheke Pātaka Kōrero



An 80-panel solar energy system was installed on Waiheke Pātaka Kōrero, the Waiheke community library, in 2015³⁰. The system will reduce the island’s carbon emissions by about 100 tonnes over 25 years.

³⁰ <https://www.solarcity.co.nz/blog/solarzero/waiheke-gets-greener-with-solar>

10.3 Transport – Ikiiki

Haere pai atu, hoki pai mai

Travel safe

Transport accounts for 44 per cent of Auckland’s greenhouse gas emissions. Prior to COVID-19, 17.8% of people living in Waiheke Local Board area were already working from home. Most residents usually get to work by private vehicle (39.6%), taking the ferry (19.3%) or driving a company vehicle (8.4%). A much smaller portion take the bus (2.6 %), walk or jog (5.1%). Most people travelling to their place of study do so as a passenger or driver of a vehicle (58.3%)³¹.

By encouraging walking, cycling, scooting, bus, ride sharing, as well as transitioning to electric vehicles and electric or hybrid ferries in the Waiheke Local Board area, we can make a substantial reduction in emissions.

Major investment is required to:

- replace the current ferry fleet with hybrid/electric ferries alongside the provision of ferry charging infrastructure on Waiheke
- replace the current private and business vehicle fleet with electric vehicles
- upgrade infrastructure to create better access to public transport, pedestrian, and cycle connections.

The Local Board and Auckland Transport have recently completed a community consulted 10-year Transport Plan for Waiheke that identifies and prioritises key transport related projects. A majority of the highest ranked projects include installation of footpaths, pedestrian and cycle pathways to provide an active travel network across Waiheke Local Board area. These will also enable a greater uptake of e-bikes and scooters by residents and visitors. This work, which is subject to funding, will provide for safe active travel to many key destinations.

Actions also include ensuring that the Auckland Transport Mātiatia Strategic Plan and business case development for NZTA funding aligns with Waiheke’s climate positive goals. Unlocking the keyhole where large vehicles turn at Mātiatia is particularly important, as is increasing bike storage on ferries and ensuring sufficient covered lockable bike facilities at the terminal to encourage multi-mode travel.

Most Waiheke Local Board area residents have off-street parking, meaning that overnight home charging of electric vehicles (EV) is relatively easy and convenient with installation of an accessible plug. An estimated 80% of New Zealand’s electricity is currently generated from renewable sources. National plans for expansion of renewable energy generation will help ensure that there continues to be sufficient supply for widespread adoption of electric vehicles provided

³¹ <https://www.stats.govt.nz/tools/2018-census-place-summaries/Waiheke-Islands-local-board-area>

we charge at off-peak times³². Vector is currently working with Electric Island Waiheke and EECA to install and manage at least 80 electric vehicle 7.2kW smart chargers in homes across Waiheke Island, along with 10 7.2kW public EV chargers and one mobile EV charger. Vector will monitor charging behaviours to assess the impact on supply as the rapid uptake of EV's continues.

Current activities, actions, programmes and plans:

- [Waiheke Islands Pathways Plan 2019](#)
- [Waiheke 10-year Transport Plan](#)
- [Electric Island](#)
- [Auckland's Low Emission Bus Pathway](#)
- [Electrifying Auckland Council and Council Controlled Organisation's fleet](#)
- [Travelwise Programme for Schools](#)
- [Travelwise Choices Programme for Organisations](#)

Goals:

- Islands free of the pollution, noise, emissions and costs of petrol, hybrid (non plug-in), and diesel engines by 2030³³
- 100% of Waiheke's ferry and bus fleet net zero emission by 2030
- Reduce the need to travel, and for private vehicle travel, by supporting and enabling flexible and remote working
- Improve the infrastructure for low carbon transport including:
 - Build better cycle and pedestrian infrastructure and connections
 - Make our roads more pedestrian, scooter and cycle friendly
 - Improve access to affordable low-carbon public transport
 - Building accessible charging infrastructure for electric and share vehicles
- Encourage and enable shift to fossil-fuel free transport modes, more walking, scooting and cycling
- Ensure equitable and universal access to sustainable transport for all ethnicities, cultures and levels of ability
- Make the switch to electric vehicles more affordable
- Ensure transport assets and infrastructure are resilient to the impacts of climate change including sea level rise

³² <https://www.transport.govt.nz/multi-modal/climatechange/electric-vehicles/electric-vehicles-and-reducing-transport-emissions/>

³³ <https://www.electricisland.co.nz/copy-of-intro>

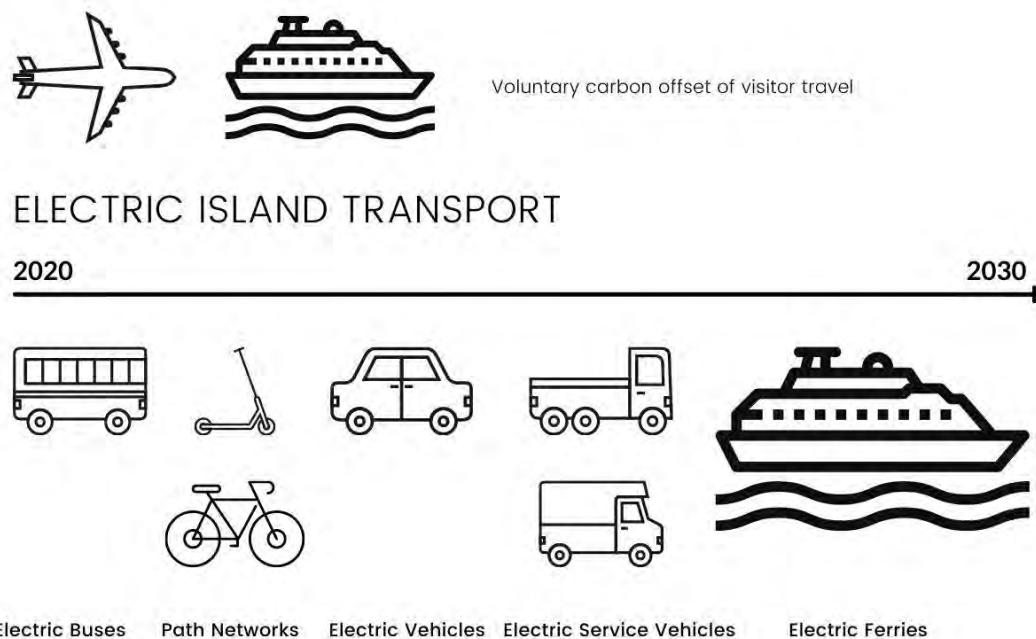


Figure 3. Transition to Electric Island transport

Opportunities and benefits

These actions will have much broader positive impacts:

- Fossil fuel-free travel for visitors
- Improved air quality
- Reduced marine noise pollution
- Improved public health
- Creating more car-free public spaces to enjoy
- Making cycling and active tourism and commuting safer and people healthier
- Encouraging ecotourism
- Making it safer, cheaper and quicker to get around

Transport actions

Goal	Action	Time scale	Recommended lead
Zero emission public transport by 2030	<ul style="list-style-type: none"> Ensure all public transport in and to the Waiheke Local Board area is 100% electric by 2030 	Years 1-10	Auckland Transport / commercial transport operators
Fleet electrification	<ul style="list-style-type: none"> Advocate for central government policies which encourage a rapid transition to electric vehicles 	Years 1-3	All
	<ul style="list-style-type: none"> Work with key partners to enable rapid installation of on island ferry charging 	Years 1-9	Auckland Transport / Vector
	<ul style="list-style-type: none"> Encourage and enable the provision of community and commercial electric vehicles and share vehicles, public e-bike and vehicle charging stations and carpooling parks 	Ongoing	Auckland Council / Auckland Transport / EECA
	<ul style="list-style-type: none"> Continue to support Electric Island initiatives to enable the transition to electric vehicles 	Ongoing	Local Board
Reducing the need to travel	<ul style="list-style-type: none"> Promote Auckland Transport’s Travelwise travel demand management programme support through business groups and schools Work with local businesses to support and cement workplace implementation of flexible work arrangements, allowing work from home, video conferencing, establishment of local shared working spaces and workplace travel planning 	Years 1-3	Auckland Transport / Waiheke Connect
Improve infrastructure	<ul style="list-style-type: none"> Work with Auckland Transport to accelerate and enable the implementation of the Waiheke Transport 10-year Plan, prioritising: <ul style="list-style-type: none"> completion of safe pedestrian and cycle routes to schools and a continuous, safe cycleway between Mātiatia and Onetangi in both directions 	Years 1-10	Auckland Transport / Local Board
	<ul style="list-style-type: none"> Ensure that the Waiheke Transport Design Manual incorporates nature-based solutions for climate change, resilience building and adaptation 	Years 1-3	Auckland Transport
	<ul style="list-style-type: none"> Continue to advocate for: <ul style="list-style-type: none"> the acceleration of investment in dedicated cycleways that can also be used by other micro-mobility devices (scooters, e-boards, e-bikes) and improve access to public transport, ferries, schools and other key tourism destinations including beaches, reserves and wineries improved public transport connectivity, frequency and affordability – including a reduction in the entry costs for AT Hop Cards. 	Years 1-10	Local Board / All

	<ul style="list-style-type: none"> In partnership with Auckland Transport and local bike groups assess³⁴ the adequacy of cycle and scooter parking at ferry terminals, town centres, schools, parks and other destinations and create a plan for upgrades, such as rain protection and e-bike charging points, as required 	Year 1	Auckland Transport / Local Board / Cycle Action Waiheke
	<ul style="list-style-type: none"> Rationalise Waiheke signage to reduce visual pollution and work with Cycle Action Waiheke and Mana Whenua to: <ul style="list-style-type: none"> provide clear wayfinding pedestrian/cycle network signage make it easier for people to find their way using these alternative routes and include signage which uses te reo and weaves in strong social and cultural narratives. 	Year 1	Auckland Transport / Local Board / Cycle Action Waiheke / iwi
Equitable access	<ul style="list-style-type: none"> Work with Auckland Transport and Electric Island to improve access to communal, personal and electric transport options for low-income Waiheke Islanders e.g. electric share-car parking, free public charging stations, loan electric bikes, bikes in schools, loan bikes in workplaces 	Years 1-5	Auckland Transport / Electric Island / Local Board / Vector / businesses
	<ul style="list-style-type: none"> Advocate for increasing the affordability and accessibility of public transport and ferry travel 	Years 1-3	Local Board
	<ul style="list-style-type: none"> Ensure all new buildings embrace universal design principles to allow equitable access to all ages, stages and abilities – with parking and electric charger parking for young families, elderly and disabled 	Ongoing	Developers / property owners
Promote low carbon travel	<ul style="list-style-type: none"> Support activations and activities which reclaim the streets, e.g. play streets, shared streets and the creation of low-traffic neighbourhoods, including support for tactical urbanism projects that encourage sustainable transport choices 	Years 1-5	Local Board / Auckland Transport
	<ul style="list-style-type: none"> Encourage residents to use the FutureFit or the Carbon Neutral Trust carbon calculator to better understand their transport footprint 	Ongoing	Local Board / EECA / NGO's and community groups
	<ul style="list-style-type: none"> Prioritise advice on sustainable travel options in promotion of all local board events 	Ongoing	Local Board
	<ul style="list-style-type: none"> Partner with Auckland District Health Board, Piritahi Hau Ora, Auckland Transport, local sports clubs and other community groups to promote the health benefits of active travel modes 	Ongoing	Local Board / Auckland Transport / WDHB / Sports clubs and community groups
	<ul style="list-style-type: none"> Provide funding for the Waiheke bike hub to enable more members of the community to participate in cycling 	Ongoing	Local Board / Auckland Transport
	<ul style="list-style-type: none"> Continue to support local bike group activation events which promote use and familiarity with 	Ongoing	Local Board / Auckland Transport / Cycle Action Waiheke

³⁴ Drawing on past public consultation, local knowledge and prior assessments

safe local cycle routes – including events that focus on different groups

- Advocate for greater cycle capacity access to and on ferries, and increase free travel capacity for bicycles

Ongoing

Local Board / Auckland Transport / Cycle Action Waiheke

What you can do:

At work

- Sign up your workplace to the Auckland Transport Travel Wise Choices programme
- Join the Aotearoa Bike Challenge – Love to Ride
- Join the Walk to Work Challenge
- Join a car share scheme or choose an electric vehicle
- Check your car's tyre pressure regularly, and keep that driving smooth to save on fuel
- Access personalised journey planning, cycle and public transport promotions, events and resources at at.govt.nz

At home

- Walk or cycle more – try out local cycle and walkways
- Visit the Waiheke Sustainability Centre
- Join a local group like Cycle Action Waiheke
- Plan your ferry or bus trip at at.govt.nz
- Find someone to share a ride with at smarttravel.org.nz
- Make your next car an electric vehicle
- Set up a flexi workspace so you can work from home
- Minimise air travel – have a staycation or offset carbon emissions if you fly

Seek funding from the AT Community Bike Fund:

<https://at.govt.nz/cycling-walking/at-community-bike-fund/>

Case study: Electric buses

Auckland Transport and Fullers360 officially welcomed the first of Auckland’s new, fully electric bus fleet in 2020, with nearly a third of the buses taking to the Waiheke Island’s streets.

Six of the eight electric buses purchased by Fullers360 went into service by Waiheke Bus Company in late October 2020, making Waiheke Island the first area in Auckland to operate an electric bus fleet. Another two electric buses joined the fleet in December and the remaining nine buses in the 17-strong fleet will be replaced for electric as they reach their end of life by 2030.³⁵

Fullers360 Chief Executive Officer Mike Horne says that “Despite the impacts of COVID-19, Fullers360 remains steadfast in our ambition to grow a larger, more effective and sustainable transport network. Our investment in electric buses is part of our vision to operate an environmentally friendly transport service on and off the water.

“With the first six electric buses coming to Waiheke, we will see a reduction of approximately 538 tCO₂e of greenhouse gas emissions per year on Waiheke, which is equivalent to 718 typical New Zealand homes’ electricity use for one year.”

The electric buses each carry 37 passengers and service the existing Auckland Transport Waiheke Island route. The buses produce zero emissions and can travel up to 400km on a single charge. The buses are charged and stored at the Waiheke bus depot.



Figure 4. The first of Waiheke’s electric buses.

³⁵ <https://our.auckland.aucklandcouncil.govt.nz/articles/news/2020/11/auckland-s-first-electric-bus-fleet-officially-launched-on-waiheke-island/>

10.4 Economy – Ōhanga

He aha te kai a te Rangatira? He kōrero, he kōrero, he kōrero

What is the food of the leader? It is knowledge, it is communication

By leveraging knowledge and resources we can create Aotearoa's first thriving, carbon-positive inhabited islands.

There are approximately 1500 businesses based in the Waiheke Local Board area³⁶. The largest number of local businesses are in rental, hiring and real estate services, construction, professional, science and technical services, accommodation and food services, with many serving the tourism sector. These businesses provide over 3424 jobs, with the highest areas of employment within accommodation and food services, agriculture, forestry and fishing, construction and retail trade³⁷.

With over a million visitors to Waiheke per year prior to COVID-19, there has been concern about the impacts of tourism on both the community and the environment. Looking forward, a transition to more sustainable tourism that supports the social, economic and environmental goals of the community is planned, with a Waiheke Destination Management Plan under development.

There are currently no businesses within the Waiheke Local Board area that are known to have measured and certified their carbon footprints. Meaning there is a significant opportunity to work together to measure, manage and reduce the carbon emissions created by our local businesses as a community. We can also create a dedicated Waiheke Climate Action Fund (section 10), which will allow our businesses, customers and visitors to invest directly into our transition to becoming a carbon positive economy with regenerative tourism practices.

COVID-19 has increased the need to build the resilience of our local businesses. We can access investment, reduce operational costs and improve the profitability of business through:

- embracing regenerative tourism
- strategic local and social procurement practices
- energy efficiency improvements
- more rapid uptake of electric and hydrogen vehicles – on land and sea
- renewable energy generation
- gaining ground as a climate leader by becoming the first carbon-positive inhabited islands in Aotearoa.

Becoming a circular economy is another essential part of this transition: green waste collected at the transfer station is composted on the island and turned into garden mulch. Currently, nearly 50% of Waiheke's compostable waste is being sent to landfill, with commercial organic waste contributing the majority of this. Once compostable materials reach landfill, they rot down anaerobically producing methane, a potent greenhouse gas. Instead, we can compost food and green waste on Waiheke, building our soil health and reducing the social and environmental costs

³⁶ <https://ecoprofile.infometrics.co.nz/Waiheke/Businesses>

³⁷ <https://ecoprofile.infometrics.co.nz/Waiheke/Islands/Employment>

of landfill. Working together as a business community with our community partners, we can also tackle and eliminate our other waste streams.

Planning to respond to the risks created by climate change is another essential part of continuity planning and risk management. Auckland Council, Auckland Unlimited and EECA have many existing resources and programmes that can be used to support our businesses. This work has included a detailed assessment of the economic impacts of climate change on the economy and particularly that on the tourism sector³⁸.

Through increasing support for buying local, encouraging flexible work environments, travel planning and promoting longer duration visits for tourists, we can support increased sales, reduced operational costs, as well as reducing the need for travel and freight while supporting sustainable travel choices for customers and employees.

Current activities, actions, programmes and plans:

- [Carbon Neutral NZ Trust](#)
- [Climate Action Toolbox](#)
- [Waiheke Destination Management Plan \(currently under development\)](#)
- [Waiheke Island Sustainable Community and Tourism Strategy 2019-2024](#)
- [Project Forever – Monitoring and Research – Impacts of Tourism](#)
- [EECA Energy Efficiency Technical and Funding Support](#)
- [Climate Leaders Coalition](#)
- [Work Ready – Business Continuity Planning](#)
- [Hazard Viewer](#)

Goals

- Establish a **Waiheke Climate Fund** to actively fund local climate mitigation, resilience and adaptation actions by 2022
- Aotearoa’s first thriving carbon-positive and resilient island destination and community – Waiheke Local Board area businesses become climate leaders with visitors contributing directly to restoration of land and sea by 2040
- A **Waiheke Carbon Positive Business Programme** has been developed and implemented to support local businesses’ transition to carbon positive:

³⁸ <https://www.knowledgeauckland.org.nz/publications/auckland-economy-climate-change-risk-assessment/>

- By 2025 local businesses are prepared for climate change with a just transition planned to create a carbon positive economy
- By 2025 local businesses have:
 - reduced their carbon emissions by 25%
 - measured their carbon footprints, set targets to halve their footprints by 2030 and are implementing actions to minimise emissions and reach carbon positive by 2040
 - identified and planned for climate risks
 - are contributing to the Waiheke Climate Fund.

Opportunities and benefits

These actions will have much broader positive impacts:

- Stronger social licence to operate
- Increased profitability
- Improved efficiency
- Greater levels of innovation
- Greater access to capital
- Lower operating costs
- Better air quality
- Access to emerging regenerative tourism markets
- Higher sales
- More productive workforce
- Better work-life balance
- Less risk for businesses
- Businesses better prepared for emergencies

Economy actions

Goal	Action	Time scale	Recommended lead
Waiheke Climate Fund	<ul style="list-style-type: none"> • Establish a Waiheke Climate Fund to offset unavoidable carbon emissions from the Waiheke Local Board Area and reinvest money raised directly into local carbon mitigation and resilience actions, including creation of simple mechanisms to enable voluntary participation by local businesses and visitors³⁹ (see section 8). 	Year 1	Local Board / Auckland Council – Chief Sustainability Officer
Carbon positive economy	<ul style="list-style-type: none"> • Ensure that the Waiheke Destination Management Plan⁴⁰ aligns with the carbon positive goals and actions contained within this action plan, including support for the Waiheke Climate Fund 	Year 1	Auckland Unlimited
	<ul style="list-style-type: none"> • Support development and implementation of a Carbon Positive Business Programme which will drive investment into carbon positive development and employment within Waiheke Local Board area, in partnership with Auckland Council, Waiheke Connect, Waiheke Sustainability Centre, Tourism Waiheke, Auckland Unlimited, Auckland Transport, Carbon 	Years 1-3	Auckland Council – Climate Activator

³⁹ For example through partnerships with providers like Carbon Click

⁴⁰ Currently being developed by Auckland Unlimited

	<p>Neutral Waiheke, EECA, Amotai and carbon certification bodies.</p> <ul style="list-style-type: none"> • This programme will support local business in: <ul style="list-style-type: none"> ○ understanding climate change ○ achieving the goals of this action plan and Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan ○ measuring, minimising, managing, certifying and offsetting their carbon emissions ○ planning for climate risks and a just transition ○ accessing advice and support from: <ul style="list-style-type: none"> ▪ EECA to maximise energy efficiency and electric vehicle uptake ▪ Auckland Transport for travel demand planning and staff engagement and training ▪ Carbon certification and offset providers (Toitu, Ekos, CarbonClick, COGO, Climate Neutral Waiheke) ○ simplifying the steps required ○ participating in the Waiheke Climate Fund 	Years 1-5	
Buy local	<ul style="list-style-type: none"> • Promote the use of local businesses for goods and services 	Ongoing	All
	<ul style="list-style-type: none"> • Recognise and promote local businesses that are taking action as climate leaders and supporting others in doing so 	Ongoing	Local Board
Just transition	<ul style="list-style-type: none"> • Identify local businesses and events that may be adversely impacted by the transition to a carbon positive economy • Conduct a study to identify economic opportunities that the change in climate will present to the local business economy, e.g. the warming of the climate might make it possible to grow certain cultivars that would otherwise not be supported by the climate 	Years 1-2	Local Board
	<ul style="list-style-type: none"> • Help businesses adversely impacted by the transition to a carbon positive economy plan and prepare for a just transition 	Years 3-5	Auckland Unlimited
Resilience	<ul style="list-style-type: none"> • Help businesses across Waiheke Local Board area develop risk management and continuity plans in response to climate change and extreme weather events 	Years 1-3	Auckland Council – Auckland Emergency Management
Circular economy	<ul style="list-style-type: none"> • Provide practical support to encourage a regenerative circular local economy that can utilise all waste as a resource 	Ongoing	Auckland Council – Waste Solutions
Procurement	<ul style="list-style-type: none"> • Ensure Council procurement, and procurement by other large local businesses, recognises businesses that have climate positive goals 	Ongoing	Auckland Council – Chief Sustainability Officer / Local Board
	<ul style="list-style-type: none"> • Māori businesses and social enterprises are actively supported through procurement practices and partnership with organisations like Amotai. 	Ongoing	Auckland Council-- Chief Sustainability Officer / Local Board

What you can do at work:

Climate change will affect every aspect of our society and economy. You can make a difference by asking about and planning for climate change in your workplace.

- Measure your business' carbon footprint
- Create and implement a plan to reduce emissions
- Certify your footprint
- Offset the hard to reduce parts of your footprint

Tools, resources and carbon certification bodies you can use:

- [Climate Action Toolbox](#)
- [Carbon Neutral Trust](#)
- Toitu
- Ekos

Be a voice for change – here are some questions to ask your employer or any businesses that you purchase products from:

- Have you measured your carbon emissions as a business?
- Do you have a science-based target to reduce your carbon emissions? (e.g. achieve net zero pollution)
- What are you doing to achieve these reductions?
- How are you celebrating and using your successes to encourage others?
- How are you supporting government policies that limit carbon pollution across the economy and cut emissions in your sector?
- Does your business or trade association have a climate programme or policy in line with your agenda and values?
- How else is your company engaged in fighting climate change? (e.g. innovation in green tech)
- How does your company empower employees to fight climate change?
- Have we identified climate change risks for the business and created a business continuity plan?

Also see: livelightly.nz/resources/at-work

Case study: The Compost Co.

The Compost Co. is a local initiative managed by the Waiheke Resource Trust. The project offers a food waste collection service to local restaurants and community groups. Also collecting and processing single-use compostable packaging from coffee shops and zero waste events.

The project began in February 2018 and has grown to process over 20 tonnes of food waste per year. Committed to reducing waste from landfill, The Compost Co. offers the only commercial compostable packaging service recovery on the Island, with plans to expand to offer all businesses in the community access to a local composting service. The Compost Co. also aims to create market gardens using the compost produced to create produce for local markets, restaurants and cafes – supplying local food with a lower carbon footprint – with the goal of ensuring a circular economy approach to food production and food waste on the Island.



Figure 5. Waiheke Resources Trust – The Compost Co project.

10.5 Community and Coast – Ngā hapori me te tahatai

Ka mua, ka muri

Looking back in order to move forward

Waiheke Local Board area is already experiencing the impacts of climate change through erosion, drought, flood events and sea level rise. Climate change will affect many of us differently and our ability to adapt depends on specific local impacts, individual circumstances, and our ability to plan and prepare as a community. Coastal communities are vulnerable to coastal hazards and coastal hazard impacts will increase as a result of projected changes in climate – affecting community values for generations to come⁴¹.

Residents of the Waiheke Local Board area see effects on the natural environment (44 per cent), risks from flooding (29 per cent), coastal changes including seas level rise and erosion (28 per cent) and economic development and resilience (28 per cent) as the key climate change challenges facing the community⁴².

Auckland Council has identified communities and sites within the Waiheke Local Board area that are vulnerable to sea level rise (SLR), coastal inundation and stormwater flooding. These can be viewed on the [Auckland Hazard Viewer](#)⁴³. Based on the projections of the fifth Intergovernmental Panel on Climate Change assessment report, inundation of up to 1 to 2 metres is predicted over the next 100 years⁴⁴.

An assessment of vulnerability to climate change in Auckland conducted in 2019, examined the degree to which our communities are susceptible to, and unable to cope with, the negative impacts of climate change⁴⁵. This assessment identified the Waiheke Local Board Census Area Units (CAU) sensitivity and exposure as being in the 'very high impact' category but found that this was balanced by a high adaptive capacity (Fig 4). Waiheke was consequently not identified as a hotspot due to our collective ability to adapt. These findings emphasise the importance of taking action to plan for these changes now.

Ensuring action on adaptation is critical to minimising impacts and managing the risks associated with climate change. Low lying coastal taonga, homes, businesses and communities are particularly vulnerable to sea level rise. Increased rainfall and intensity of storms will result in more frequent generation of overland flows through catchments, contributing to more flooding in lower parts of each stormwater catchment.

Waiheke is unique in its reliance on rainwater tanks for water supply, with supplementation from the groundwater aquifer in increasing times of drought. The community has expressed concern that potable water sources, and sewage treatment at Owhanake Treatment plant, may be severely

⁴¹ <https://niwa.co.nz/climate/research-projects/coastal-adaptation-to-climate-change>

⁴² Colmar Brunton (2019) Climate Change Action and Public Perceptions

⁴³ <https://www.arcgis.com/apps/MapSeries/index.html?appid=81aa3de13b114be9b529018ee3c649c8>

⁴⁴ One-meter sea-level rise is representative of the upper bound scenario to 2115. Two-meter sea-level rise is representative of potential, longer term sea-level rise (2120 to approximately 2200).

⁴⁵ Conducted by Auckland Council's Research and Evaluation Unit, (RIMU) in 2019

impacted by the predicted combination of increasing floods, drought and sea level rise. The community has called for an integrated assessment of these risks and the identification of solutions to address these. Current water emergency plans include two water treatment facilities at the Mātiatia car park and Onetangi sports field. Increased drought also increases the risk of fire and the need to plan for this.

The community has also expressed a desire to focus on nature-based solutions to these issues. Including natural solutions that aid mitigation while building resilience, biodiversity and allowing adaptation. For example, through the use of swales, ponds, basins, wetlands, an increase in both land and marine protected areas, as well as increased planting and composting to build natural rainwater retention and detention, replenish groundwater resources and buffer communities from storm events.

A Coastal Management Plan will be developed to address the impacts of climate changes on Auckland Council-owned land and assets on the coast. A community resilience plan is also currently being developed.

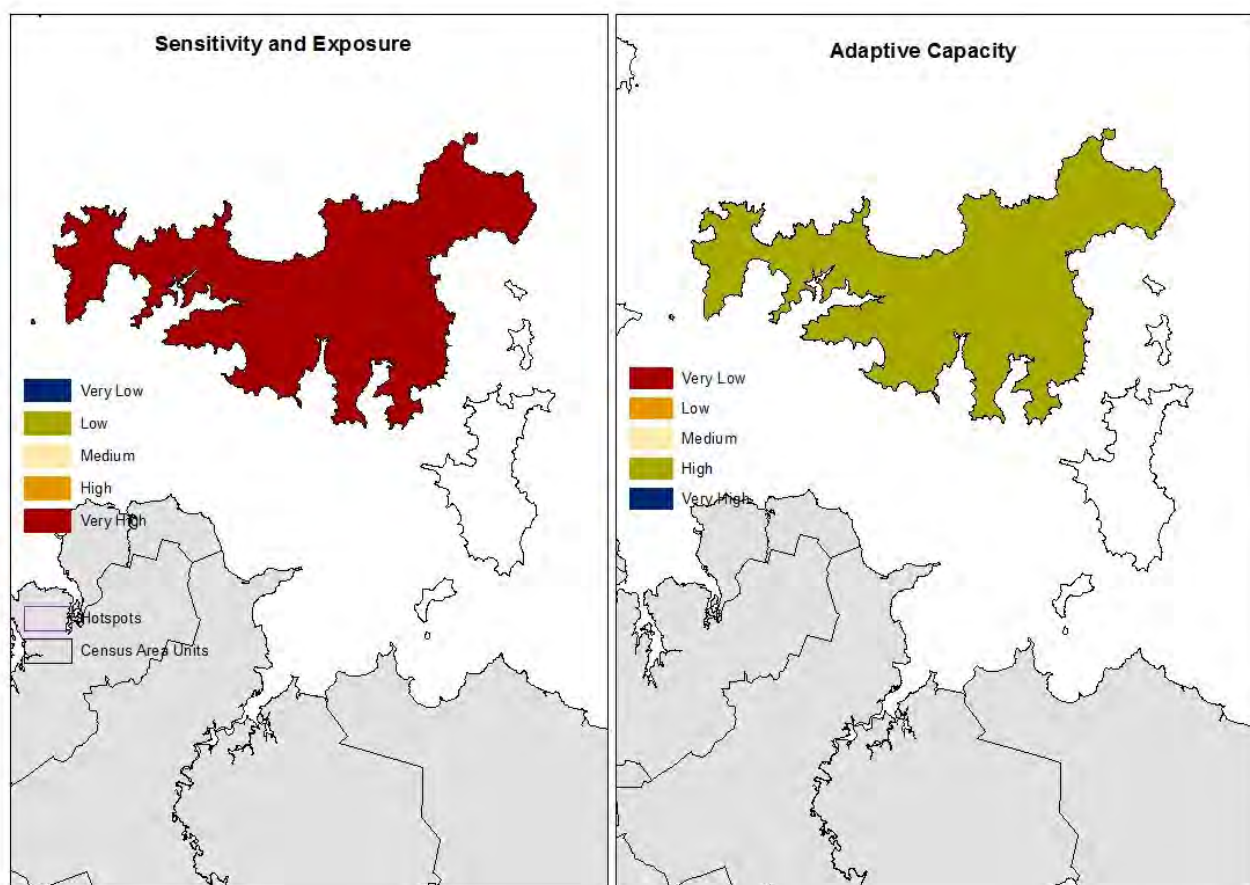


Figure 6. Vulnerability Assessment Hotspots in Waiheke.

Our local community groups, marae and schools play an important role in engaging with and connecting both our rangatahi/youth and the wider community with the environment. These connections enable climate awareness and action, and provide hubs during times of emergency. Sustainable, low-carbon lifestyles are promoted through regular and annual events like planting days, cycle tours, Neighbours Day, Electric Island’s Electric Vehicle Expo and Solar Tours, Meat

Free Mondays, as well as the ongoing role of Waiheke Resource Trust, Sustainability Centre, Electric Island, Carbon Neutral Trust, Cycle Action Waiheke, and Piritahi Marae.

We can prepare and adapt for change together. By taking the time to plan and implement solutions now with communities across Waiheke Local Board area, we will be able to adjust to the actual and expected impacts of climate change. We can reduce harm and maximise opportunities.

It is important that we continue to learn together and integrate climate change into all our decision making. We need to ensure that rangatahi, who will bear the greatest burden of the impacts of climate change, are given a strong voice in our governance and decision-making processes.

Current activities, actions, programmes and plans

- [Carbon Neutral Waiheke](#)
- [Electric Island](#)
- Community Resilience Planning Process – Auckland Emergency Management
- [Auckland Hazard Viewer](#)
- [Live Lightly](#)
- [FutureFit](#)
- [Sustainable Schools](#)
- [Enviroschools](#) and [Te Aho Tū Roa](#)

Goals

- Establish a **Waiheke Greenhouse Gas Inventory Model** by 2023
- Increase our communities' understanding of climate change, its impacts and risks and help them take practical action
- Build youth capacity for sustainable environmental care
- Strengthen the resilience of our communities, people and places by installing solar battery systems in all community identified and led emergency facilities by 2025⁴⁶
- Hosting **Annual Resilience Workshops** to better understand and plan for:
 - the impacts of drought and sea level rise on groundwater, aquifers and water supply
 - understanding the current and future impacts of extreme weather events and climate change
 - reducing the risk of erosion, slips, sediment loss, coastal inundation, stormwater flooding and hazards to properties and infrastructure
 - reducing the number of homes and businesses across Waiheke and Rakino that are exposed to flood risk and
 - working with impacted communities to plan for and agree on resilience mechanisms

⁴⁶ Community-led community emergency facilities include local buildings such as churches, bowling clubs and marae.

- Ongoing evaluation and monitoring of the uptake and performance of our adaptation strategies.

Opportunities and benefits

These actions will have much broader positive impacts:

- Understanding the current and future impacts of extreme weather events and climate change
- Creating resilience in communities and business
- Reduced social and financial impacts of climate change
- Protection of taonga and sacred sites that may be impacted

Community and coast actions

Goal	Action	Time scale	Recommended lead
Rangatahi voice	<ul style="list-style-type: none"> • Ensure that local rangatahi have a strong voice in governance and decision making at a local board level 	Year 1	Local Board
Climate knowledge	<ul style="list-style-type: none"> • Resource and support a Climate Activator to: <ul style="list-style-type: none"> ○ facilitate implementation and monitoring of this action plan ○ establish and coordinate a stakeholders advisory group⁴⁷ ○ create opportunities for the community to learn about climate change and reduce their carbon footprints 	Years 1-3	Local Board
	<ul style="list-style-type: none"> • Support completion of a Waiheke Local Board Area Green House Gas Inventory and Model to accurately assess mitigation actions to reduce and offset local carbon emissions⁴⁸ 	Every 3 years	Local Board
	<ul style="list-style-type: none"> • Host an annual Climate Event with sustainability learning experiences as prizes for local schools, businesses, and the community to support learning and empower action about sustainability and climate change 	Annual	Local Board
	<ul style="list-style-type: none"> • Encourage uptake of Waiheke, regional and national climate action funds by local community groups and rangatahi activators 	Ongoing	Local Board
	<ul style="list-style-type: none"> • Support annual Electric Vehicle Expo and Solar Tours to build stronger community connections and accelerate uptake 	Annual	Electric Island Waiheke / Local Board
	<ul style="list-style-type: none"> • Grow collaboration and the capacity of school staff, students and teachers to reduce emissions, increase resilience and enable future leaders 	Years 1-5	Auckland Council – Sustainable Schools team
Community resilience	<ul style="list-style-type: none"> • Develop a Waiheke Community Resilience Plan – to include an early warning system and community-based GIS portal 	Year 1	Local Board / Auckland Council – Chief Sustainability Officer / Auckland Emergency Management

⁴⁷ Terms of Reference for the group will be developed and agreed with the Waiheke Local Board

⁴⁸ Including identification of current offset levels through current and proposed planting

Goal	Action	Time scale	Recommended lead
	<ul style="list-style-type: none"> Support for annual Neighbours Day events 	Ongoing	Local Board
	<ul style="list-style-type: none"> Hold Annual Community Resilience Workshop and community response scenario exercises 	Annual	Auckland Council Emergency Management / Local Board
	<ul style="list-style-type: none"> Identify strategic community emergency facilities⁴⁹ for installation of solar battery systems and charging facilities (phone and vehicle) 	Year 1	Local Board / Auckland Council – Climate Activator
	<ul style="list-style-type: none"> Install solar battery systems and charging facilities in strategic community emergency facilities [see comments above] 	Years 2- 5	Facility owner
	<ul style="list-style-type: none"> Create a Coastal Management Plan for Waiheke that assesses coastal hazards and the impacts of climate change on the coast, discussing options with communities and preparing for the future 	Years 1- 5	Auckland Council – Coastal Hazard Planning
Risks and hazards	<ul style="list-style-type: none"> Work with Fire and Emergency New Zealand to ensure that the increased risk of fire resulting from drought is actively planned for 	Ongoing	Auckland Council – Technical Services / Fire and Emergency NZ
	<ul style="list-style-type: none"> Deliver an educational engagement programme with target communities (e.g. marginalised and vulnerable groups) to become more resilient to hazard events and climate change 	Years 1- 5	Auckland Emergency Management
Protect taonga	<ul style="list-style-type: none"> Complete a review of known coastal locations of Koiwi and prioritise protective action Support mana whenua, iwi and hapū in preparation for sea level rise including identification of marae, urupā (burial grounds) and wāhi tapu (sacred sites) that may be exposed to inundation and stormwater flooding and work to ensure the protection or relocation of these sites 	Year 1 Years 1- 3	Auckland Council – Coastal Management Plan Staff / mana whenua

⁴⁹ During the CovidCOVID-19 pandemic food sharing and other support has been activated in many of our community facilities, this initiative is to identify those churches, marae, halls and council-owned facilities which provide hubs of resilience to the Waiheke Island community in times of emergency in addition to those council-owned Civil Defence premises.

What you can do:

At work

- Hold a [FutureFit.nz](#) corporate challenge
- Check the local [hazards viewer](#)
- Create a climate risk management plan and a [business continuity plan](#)

At home

- Visit [livelightly.nz](#)
- Measure your carbon footprint at [futurefit.nz](#) or [Carbon Neutral Waiheke](#)
- Check the local [hazards viewer](#)
- Create a [household emergency plan](#)

Planning and attending events

- Plan your event to minimise the emissions it generates
- Encourage fossil free travel options

10.6 Food – Ngā kai

Nau te rourou, naku te rourou, ka ora ai te manuhiri:

With your food basket and my food basket, together we will feed the people

Food emissions from the production, transport, processing and disposal of food make up 18 per cent of Aucklanders' consumption emissions⁵⁰. Most of the food consumed on Waiheke is brought in from outside the island, meaning higher costs and carbon emissions.

COVID-19 has shown the importance of a strong food system in times of emergency. Loss of freight services to the island during significant storm events or cyclones in the future would create full dependence on food supplies already on the islands until safe passage resumes.

We know that the impacts of climate change are cumulative and cascading. Meaning we are likely to be dealing with more than one climate impact at a time. Climate change will affect food production with:

- longer periods of drought
- more intense storms and stormwater flooding
- increasing numbers of pests and diseases
- sea level rise
- warmer and more acidic oceans

With over 30 vineyards and an estimated 1 million visitors a year pre-COVID-19, many Waiheke businesses and their employees have been hit hard by the pandemic.

We know there will be more difficulties to come but we have the chance to build a more secure, sustainable, and resilient food system now – one that is healthier and supports people more fairly through the development and implementation of a Kai Charter for Waiheke.

Creating a circular local food economy

While soil conditions, summer water shortages, and overfishing mean producing food on Waiheke is challenging, there is a desire to create opportunities for a stronger local food system. Waiheke islanders throw away over 648 tonnes of food waste a year⁵¹. This waste contributes to climate change by releasing methane as it rots. We can take advantage of the food and green waste produced on Waiheke to:

- produce compost and build healthy soil
- establish viable commercial gardens to grow organic food
- optimise production, harvest and distribution
- supply local homes and businesses with local produce with a lower carbon footprint
- create training and employment opportunities
- reduce food waste.

⁵⁰ Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan

⁵¹ <https://www.makethemostofwaste.co.nz/media/1690/your-guide-to-waiheke-islands-waste-services.pdf>

Building resilience

A Waiheke Food Resilience Hui held at Piritahi Marae in 2020 drew together ideas from stakeholders across the food system⁵². Actions identified at the hui are included in this plan and put in place solutions to build greater resilience for times of disaster. Actions include holding regular events to ensure there are better connections across the full food system, from growers to distributors, food businesses and retailers through to food rescue.

These actions will support the growth and consumption of local, seasonal food and plant-based meals, help reconnect people of all ages with lower carbon food choices, and provide a better understanding of where our food comes from, how it grows and how to eliminate waste. The aim is to further encourage the commercial production and consumption of food and beverages on the island. Cooking skills, meal planning and composting all helps. Plant based diets result in significantly lower carbon emissions.

There are many tools that can be employed to build our resilience. Ngāti Pāoa have recently placed a rāhui on scallops, mussels, crayfish and pāua recognising the depletion of stocks of kaimoana around Waiheke⁵³.

We can create a local low-carbon food system – that reflects who we want to be as a community – reviving skills, cultural food practices, supporting food security and making us more resilient.

Current activities, programmes and plans

- Ngāti Pāoa Rahui
- Piritahi Marae Māra Kai
- Ara Taiao
- Community Gardens
- The Compost Co.
- Garden to Table
- Hina
- Kai Conscious
- Kai Waiheke
- Meat Free Mondays
- [Tikapa Moana Hauraki Gulf Islands Waste Plan](#)
- [Aotearoa Food Rescue Alliance \(AFRA\)](#)
- [Sharewaste](#)
- [Love Food Hate Waste](#)
- [Compost Collective](#)

Our goals

⁵² <https://waihekeradio.org.nz/podcast/food-resilience-emily-king/>

⁵³ <https://www.nzgeo.com/stories/guardians-of-the-gulf/>

- Increase local low-carbon food production and consumption for residents – measured as km² of urban agriculture
- Develop a **Kai Charter** by 2023 to:
 - create a low-carbon, resilient and secure local food system
 - grow local skills and create employment
 - provide Waiheke Island residents with affordable access to fresh, organic, healthy food and
 - achieve food security by 2025
- 50% of the Waiheke Local Board area residents eating plant-based for at least one day a week by 2025 and 100% by 2030
- The revival of sustainable and carbon-positive Māori food practices
- A circular food system with 100% of all food and beverage waste being eaten, reused or composted on the island by 2025.

Benefits

These actions will have much broader positive impacts:

- Developing a vibrant and diverse sustainable food economy
- Nurturing skills and awareness that build greater resilience and self-sufficiency
- Build community knowledge, sharing, skills and resources
- Reviving Māori food practices
- Self-determining and mana enhancing community participation in local food systems
- Greater food sovereignty
- Reducing hunger and food poverty
- Reducing the costs of living
- Improving access to healthy affordable food
- Improving health
- Carbon sequestered and improved soil health
- Reduced food waste

Food Actions

Goal	Action	Time scale	Recommended lead
Increase and connect food growing areas	<ul style="list-style-type: none"> • Support the development of Piritahi Marae Māra Kai as a model of a sustainable urban garden farm 	Years 1-5	Piritahi Marae / Local Board / Kai Co-ordinator
	<ul style="list-style-type: none"> • Create a database and map of local growers, producers, food rescuers, foraging locations, gardens, areas available/potentially available for urban agriculture and the food sources needed to strengthen resilience and food security 	Years 1-2	Local Board / Kai Co-ordinator / community groups
	<ul style="list-style-type: none"> • Support growers to establish thriving food farms – with employed gardeners selling produce to the community 	Ongoing	
Waiheke Kai Charter & Implementation	<ul style="list-style-type: none"> • Support the creation of Waiheke Kai Charter that people can sign up for and contribute to, and that also sets out 	Year 1	

Goal	Action	Time scale	Recommended lead
	clear standards for leisure, hospitality, tourism and accommodation venues		Local Board/ Kai Co-ordinator/Community Groups
	<ul style="list-style-type: none"> Provide a paid coordinator to activate Kai Waiheke projects, coordinate between them, and communicate them out to the public 	Ongoing	
	<ul style="list-style-type: none"> Facilitate a regular growers market to sell locally grown food produce at affordable prices 	Ongoing	
	<ul style="list-style-type: none"> Create a grass-roots food festival to tell the story of the food future we want to bring about 	Annual	
	<ul style="list-style-type: none"> Support rangatahi/youth in learning food growing skills and income generating market gardening, e.g. apprenticeships, mentoring 	Ongoing	
	<ul style="list-style-type: none"> Offer workshops/training spaces to support our community to develop skills in food growing, preserving etc 	Ongoing	
	<ul style="list-style-type: none"> Continue to support community-led low-carbon food initiatives like: māra kai, Garden to Table, crop swap, on-line food sharing co-ops, community gardens, meal planning, cooking lessons, plant-based meal choices, composting and community fridges⁵⁴ 	Ongoing	
	<ul style="list-style-type: none"> Support the revitalisation of existing community gardens as urban garden hubs 	Years 1-3	
Food Resilience,	<ul style="list-style-type: none"> Create a food brigade that connects all parts of Waiheke to ensure we are food ready in times of emergency or disaster 	Year 1	
	<ul style="list-style-type: none"> Identify and support those experiencing food poverty 	Years 1-3	
	<ul style="list-style-type: none"> Support food rescuers and food banks with adequate infrastructure and skills to rescue and distribute food 	Years 1-5	
	<ul style="list-style-type: none"> Enable educational programmes focused on reviving ancient Māori food practices to help rangatahi and their whānau gain food sovereignty 	Years 1-5	
	<ul style="list-style-type: none"> Ensure food businesses are supported in times of need on the island 	Ongoing	
	<ul style="list-style-type: none"> Provide support to encourage seed saving, sharing and propagation 	Ongoing	
A circular food system	<ul style="list-style-type: none"> Commit to keeping food and green waste on island by 2025. Working to reduce food waste on the island, diverting waste from landfill to compost or, if edible, to be eaten 	Year 1 Ongoing	Community groups / Auckland Council ⁵⁵
	<ul style="list-style-type: none"> Continue to enable and support the sharing of surplus or waste food through the network of charities, community groups and Pātaka Kai 	Ongoing	All
	<ul style="list-style-type: none"> Continue targeted delivery of Compost Collective workshops to support composting 	Ongoing	Auckland Council – Waste Solutions

⁵⁴ Waiheke Local Board Plan 2020

⁵⁵ E.g. [Waste Minimisation and Innovation Fund](#)

What you can do:

At work

- Choose local, organic, seasonal, plant-based drinks and food for kitchen and catering
- Share food and host a low-carbon cooking demonstration
- Set up a compost collection for coffee grounds and food waste

At home

- Plan meals and choose local, seasonal, plant-based foods
- Join a community garden or learn how to grow your own veges
- Try a plant-based diet or introduce more meat-free meals
- Use up leftovers and reduce food waste, visit lovefoodhatewaste.co.nz
- Learn to compost at a free workshop with compostcollective.org.nz



Waiheke Resources Trust Kai Gardens at the Sustainability Centre

10.7 Te Puāwaitanga o Te Tātai

Te pukawaitanga o te tangata

If Māori are flourishing, we are all flourishing

Te Tāruke-ā-Tāwhiri is a narrative of climate change that speaks to the struggles of the ātua (primordial ancestors) as a result of human behaviour that is out of balance with the world around us. Climate change is a threat to the whakapapa connections of nature, people and place.

The Mana Whenua Kaitiaki Forum has taken a lead role in anchoring and guiding a Māori response to climate change within Tāmaki Makaurau. Mana whenua are dedicated to protecting and advancing their social, cultural, environmental and spiritual well-being, development and health of its people, resources, land and assets on Waiheke. The Waiheke Local Board area is home to 891 Māori, making up 11.4 per cent of the population (compared to 11.5 per cent in Auckland).

Piritahi Marae was established on Waiheke in 1971. It is home to thriving māra kai and the base for wānanga and youth programmes which include manaakitanga, kaitiakitanga, food production and using mātauranga māori and tohu to monitor the state of the local environment. The programmees have a focus on teaching about the whakapapa connections of taiao, what we can do to protect taonga species, and addressing the social, environmental and cultural impacts of climate change.

Māori identity and wellbeing is threatened by climate change. Te whenua, te wai and taonga species are being affected, threatening traditional practices connected to Māori identity and wellbeing⁵⁶:

- the timing of tohu are changing
- culturally significant places are at risk of being damaged
- we are losing taonga species
- ability to manaaki is threatened
- mātauranga may not be passed on

Through the development of this action plan, practical ways of supporting kaitiakitanga outcomes have been identified and included. These include the leadership role of Māori as kaitiaki, the protection and restoration of our natural environment, strengthening awareness of tikanga, taonga species, and continuing to identify and protect sites of cultural heritage which may be impacted by climate change.

⁵⁶ Ministry for the Environment, 2020

There is an opportunity to increase rangatahi Māori leadership on climate change through wananga, scholarships, reciprocal partnerships, collaboration and decision-making opportunities with mana whenua, alongside public, private and community partners as we implement this plan.

Based on the feedback received the focus of this section of the plan is on:

- elevating the importance of a Te Ao Māori approach to climate change and enabling Māori leadership and participation in key decisions to restore and protect the rohe
- investing in and empowering tamariki and rangatahi as leaders on climate to create benefits for Māori whānau
- empowering whānau to make zero carbon choices using a mātauranga Māori approach
- advocating for regulations to lift the burden of responsibility from individuals
- enabling circular economy outcomes by better understanding the whakapapa of our kai
- the creation of carbon positive, self-powered, food-secure homes and marae
- the creation of Māori employment, education and training for a zero carbon economy

Through these actions we can enhance the ability and capacity of tangata (people) to sustain and maintain their mauri, while contributing to the mauri of the land and nature.

Current activities, actions, programmes and plans

- Rāhui
- Piritahi Marae kaitiaki initiatives
- Māra kai (food gardens)
- Youth Taiao Monitoring Programme
- [Mana Whenua Kaitiaki Forum](#)
- Te Ora o Tāmaki Makarau

Our goals

- Māori, the natural environment (taiao), whenua (land) and sea (tangaroa) are flourishing and able to support people for generations to come (intergenerational equity)
- Hold a national Māori Rangatahi Climate Leadership Wananga on Waiheke
- Māori culture is accessible and visible on Waiheke in climate leadership, actions and monitoring
- Māori communities are healthy, safe and connected with good access to zero carbon transport, public facilities and housing
- All Māori can access and/or generate affordable renewable energy

Opportunities and benefits

These actions will have much broader positive impacts:

- Hauroa – wellbeing enhanced
- Richer connections to taiao, whenua and tangata
- Kaitiakitanga obligations are met
- Mauri of taiao, whenua and tangata is enhanced
- Better health, housing, employment, career and business opportunities
- Lower food costs as mahinga kai and kaimoana is restored and replenished
- Lower power and water bills
- Lower operating costs for marae

Our Te Puāwaitanga ō Te Tātai actions

Goal	Action	Time scale	Recommended lead
Rangatiratanga	<ul style="list-style-type: none"> Seek government funding to restore ngahere (forest) and tangaroa (coastal marine areas) to protect the rohe from the effects of climate change and establish a carbon sink in partnership with DOC. 	Years 1-3	Iwi / DOC
	<ul style="list-style-type: none"> Increase ngahere and marine protection – rāhui and Mātauranga Māori Climate Monitoring 	Ongoing	Iwi / Local Board
	<ul style="list-style-type: none"> Māori representation on the Waiheke Climate Action Advisory Group 	Ongoing	Local Board / Iwi
	<ul style="list-style-type: none"> Support the development of the regional co-design kaitiakitanga and stewardship framework and mana whenua climate office, think tank and related monitoring 	Ongoing	Auckland Council – Chief Sustainability Officer
	<ul style="list-style-type: none"> Host a national Māori Rangatahi Climate Leadership Wananga on Waiheke 	Years 1-3	Local Board / Auckland Council / Iwi
	<ul style="list-style-type: none"> Identify and invest in rangatahi climate related representation and development opportunities 	Years 1-3	Local Board / Auckland Council / Auckland Unlimited
	<ul style="list-style-type: none"> Empower whanau to make zero carbon choices using a mātauranga Māori approach in ways that work for all generations of the whanau 	Ongoing	All
	<ul style="list-style-type: none"> Advocate for the creation of spaces and public space artwork and signage which reflects tikanga, Mātauranga Māori and Māori (Atua Māori) and linkages to Te Tāruke-ā-Tāwhiri 	Years 1-5	Local Board

Goal	Action	Time scale	Recommended lead
Regulating for climate change	<ul style="list-style-type: none"> Advocate for regulations to lift the burden of Climate Change responsibility from individuals 	Ongoing	All
Circularity	<ul style="list-style-type: none"> Continue to provide funding support for development of the Piritahi Marae māra kai and composting facilities, including any relocation requirements resulting from sea level rise or stormwater flooding 	Ongoing	Local Board
	<ul style="list-style-type: none"> Encourage the use of tikanga to develop circular economy outcomes through better understanding of the whakapapa of our products and the importance of reciprocity – what we take and use is returned or replenished 	Ongoing	Iwi / Māori
Zero carbon homes	<ul style="list-style-type: none"> Partner with Piritahi Marae Trust to create Zero Food Waste and Carbon Positive Whānau Streets in Waiheke with community compost collection, māra kai and on-site renewable energy generation and storage 	Years 1-5	Local Board / Auckland Council – Chief Sustainability Officer
Carbon positive marae	<ul style="list-style-type: none"> Partner with EECA to support improved energy and water efficiency and the creation of a carbon positive Piritahi Marae 	Years 1-5	Local Board / EECA / Piritahi Marae
Careers for kaitiaki	<ul style="list-style-type: none"> Support projects and initiatives that celebrate mātauranga Māori, drive investment into carbon positive solutions, grow community resilience, and create education and employment opportunities for Māori within Waiheke Local Board area 	Ongoing	Auckland Council – Chief Sustainability Officer / Local Board
	<ul style="list-style-type: none"> Māori businesses and social enterprises are actively supported through procurement practices and partnership with organisations like Amotai 	Ongoing	Auckland Council- Chief Sustainability Office

What you can do:

- Arrange a visit to Piritahi Marae
- Learn te reo, tikanga and Māori culture
- Learn about the maramataka calendar and its role in our wellbeing
- Check out Te Ao Māori events e.g. māra kai, rongoa, weaving

Case study: Piritahi Māra Kai

During the mid 1800s, the Te Huruhi flats had extensive gardens and orchards farmed by Ngāti Pāoa that provided supplies for Auckland. The Ngāti Pāoa chief Wiremu Hoete returned to the bay to establish a village and live after his release from captivity by Ngāpuhi in the 1830s. As part of the last remaining land block, Te Huruhi, owned by Māori on Waiheke was a productive land block with crops grown and sheep and cattle run.⁵⁷ Now the site of Piritahi Marae is home to rapidly growing māra kai.

The māra kai has a focus on sharing approaches to food that prioritise self-reliance and self-sustaining practices and promote indigenous food security. The team at Piritahi is working to help fix our food systems, as part of the indigenous food sovereignty movement using mātauranga Māori and principles of hua parakore and kaitiakitanga to increase availability and cultivation of kai, and heal both land and people. Increasing food security and practicing tikanga related to kumara growing .

The global study Project Drawdown ranked climate solutions globally and found reducing food waste and having plant-rich diets to be the third and fourth most impactful⁵⁸. Kai and culturally-led food practices lie at the heart of how we live our daily lives and are key to solving climate change.



Piritahi Māra

⁵⁷ <http://www.piritahimarae.net.nz/about-us>

⁵⁸ <https://drawdown.org/>

10.8 Energy and industry – Te ngao me te ahumahi

Hurihia tō aroaro ki te rā tukuna tō ātārangi kia taka ki muri i a koe

Turn your face to the sun and the shadows fall behind

We need to create a clean energy system that supports and provides for a resilient, carbon positive Waiheke Local Board area. We use energy to provide the electricity in our homes, fuel for our local transport system and to run our businesses:

- 84 per cent of New Zealand’s energy is currently produced from renewable energy sources
- Current national energy targets aim for 90 per cent renewables by 2025 and 100 per cent renewable energy by 2035
- 66 per cent of Auckland’s energy emissions are from primary fuel combustion within the region from fuels including natural gas, coal and liquid petroleum gas (LPG).

Waiheke is currently powered by two 6km long marine electricity cables. With bottled gas supplies also used for barbecues, cooking, water and space heating. There are a growing number of properties with solar photovoltaic systems (solar PV) and a rapidly increasing uptake of electric vehicles. Diesel used by ferry services, which provide the main transport link between Waiheke and other islands for visitors, commuters and freight, is a major source of carbon emissions.

The nature of our energy demand is already in transition. Increasing electricity demand will result from vehicle and ferry charging over the next decade. Alongside, there will be an increase in distributed renewable energy sources like solar battery and wind systems.

Vector has been working with Electric Island and EECA to test its intelligent utility networking system, known as DERMS (Distributed Energy Resource Management System), to help plan, manage and optimise the electricity supply in support of Waiheke’s climate goals (section 3).

This section of the plan focuses on identifying opportunities to increase the proportion of renewable energy used. The predominant focus is on switching energy sources – for example from diesel and natural gas to electricity – while we continue to improve energy efficiency and ensure a just transition for those businesses and organisations impacted, as well as increasing the installation of distributed renewable energy generation.

Electric Island is driving the rapid uptake of EVs and solar PV systems, and both ferry service providers are actively beginning to explore plans to transition to electric, hybrid or biodiesel services.

Council has already begun a programme to improve energy efficiency within all our council-owned community facilities, and the Department of Conservation has also set carbon targets which will see a transition to the use of electric barbecues and vehicles on conservation estate.

Support can be provided to install lower carbon space and water-heating energy options like heat pumps, and help overcome energy poverty within the community.

Current activities, actions, programmes and plans:

- [Electric Island](#)
- [Vector Vehicle Charging Demand Management Project](#)
- [Co-funding for Process Heat Projects](#)
- [Low Emission Vehicles Contestable Fund](#)
- [New Zealand's Energy Strategy 2011-2021](#)
- Refer to [Built Environment](#) for other building related initiatives

Our goals

- Using 100% renewable energy by 2035⁵⁹
- Greater energy self-sufficiency using solar and wind generation to reduce and then replace our reliance on the cable from the mainland by 2030⁶
- Develop decentralised renewable energy
- Reduction in gas, coal and liquid petroleum gas (LPG) usage and emissions
- Eliminate non-renewable process heat and industrial process heat emissions
- Reduce refrigerant-related emissions
- Accelerating the transition to electric vehicles by 2030
- Ensuring a just transition for local businesses

Opportunities and benefits

These actions will have much broader positive impacts:

- Fossil fuel-free travel for visitors and commuters
- Growing a reputation as the first inhabited islands to achieve Carbon Positive status
- Attracting investment into sustainable infrastructure
- Improved indoor air quality as unflued gas heating and cooking is removed
- Reducing energy costs for local businesses and residents
- Increased energy security through local low-carbon energy generation

⁵⁹ The previous Labour Green Confidence and Supply Agreement targets 100% renewable energy by 2035 in a normal hydrological year

Our Energy and Industry Actions

Goal	Action	Time scale	Recommended lead
100% renewable energy	<ul style="list-style-type: none"> Advocate to central government for acceleration of renewable energy as a percentage of grid supply 	Years 1-3	All
	<ul style="list-style-type: none"> Ensure that electricity capacity and usage is planned, managed and optimised to maximise the growth in solar, battery, EVs, electric ferries and other distributed energy sources and network connected devices 	Years 1-5	Vector
Develop decentralised renewable energy	<ul style="list-style-type: none"> Identify opportunities to pioneer innovative approaches to renewables⁶⁰ 	Years 1-3	All
	<ul style="list-style-type: none"> Support the uptake of solar PV, wind generation and storage solutions 	Ongoing	All
Reduction in natural gas emissions	<ul style="list-style-type: none"> Deliver programmes supporting the conversion to electric heat pump water and space heating 	Ongoing	EECA
A just transition and process emission reductions	<ul style="list-style-type: none"> Support and work with Waiheke Connect, Tourism Waiheke, Auckland Unlimited and EECA and local businesses to: <ul style="list-style-type: none"> identify local businesses or sectors that may be adversely impacted by climate policy and the transition away from fossil fuels support the creation of procurement and employment opportunities to transition those impacted into alternative opportunities identify and accelerate the uptake of support for industrial processors or users of process heat derived from coal or natural gas to reduce emissions reduce emissions from refrigerants and support the installation of distributed renewable energy generation including solar PV 	Years 1-5	EECA / Auckland Unlimited / Local Board / Climate Activator
Decarbonisation of community facilities	<ul style="list-style-type: none"> Fund, support and enable the acceleration of council-owned community facility energy efficiency initiatives, using council properties to install and showcase innovative renewable energy solutions 	Years 1-5	Auckland Council – Community Facilities
Decarbonisation of schools	<ul style="list-style-type: none"> Support schools applying for EECA/Ministry of Education grants for boiler upgrades, solar panels and energy efficiency projects 	Years 1-3	Local Board – Climate Activator
Reduction Refrigerant Emissions	<ul style="list-style-type: none"> Partner with local refrigerant and air-conditioning suppliers, installers and maintenance providers to promote the safe use of low global warming potential (GWP) refrigerants while improving energy efficiency 	Years 1-5	Local Board/Local Businesses

⁶⁰ Such as net-zero energy precincts, solar schools, marae, car parks, working with partners to combine solar PV with domestic, community and commercial energy generation and storage facilities

Goal	Action	Time scale	Recommended lead
Fleet Electrification	<ul style="list-style-type: none"> Install ferry charging facilities at Mātiatia and Kennedy Point 	Years 1-5	Auckland Transport
	<ul style="list-style-type: none"> Advocate for and encourage the uptake of the Low Emission Transport Fund by local businesses and community organisations 	Years 1-3	EECA/Local Board/Electric Island
	<ul style="list-style-type: none"> Accelerate the electrification of Auckland Council and council-controlled organisations fleets and all public transport – ensuring all new buses used in Waiheke are electric from 2021 (with the whole fleet fully electric by 2030)⁶¹ 	Years 1-5	Auckland Council – Chief Sustainability Officer – Community Facilities / CCOs

What you can do:

At work

- Find out more about the support available from EECA for reducing emissions from process heat, industrial processes, refrigerants and vehicles
- Identify and evaluate options for minimising emissions, and put them into practice
- Purchase electricity that is certified as zero carbon
- Get quotes to check the return on investment of solar or wind generation for your business

At home

- Purchase electricity that is certified as zero carbon
- Choose heat pump solutions for water and space heating
- Get a quote to check the feasibility of solar for your home
- Ensure your next vehicle is electric

⁶¹ Low emission bus roadmap

11. Monitoring framework

An annual review of progress against these targets and actions is proposed, using the climate monitoring framework provided below to measure uptake, impact, and to assess the need to further develop resilience and adaptation measures.

Theme	Targets	Monitoring method	Baseline	Frequency
Natural environment – Taiao Māori	Canopy cover 45 per cent by 2030	LiDAR survey – Parks	40% (2016/18)	Once every three years
	Number of notable trees	Unitary Plan	Establish baseline	Annual
	Taonga species thriving	Hauraki Gulf Forum and Piritahi Marae	Establish baseline	Monthly
	Protected area (land and marine) ha ⁶²	Protected Areas Network database ⁶³	Establish baseline	As required
Built environment – Taiao hanga	Number of fossil fuel-free buildings	Retrofit Programme participants Sustainable building certifications	Establish baseline	On completion
	Potable water usage	TBC	Establish baseline	Annual
	50 per cent reduction in community facilities carbon emissions pa by 2030	Carbon monitoring – community facilities		Annual
Economy – Ōhanga	≥1,400 local businesses have measured their carbon footprints and set reduction targets by 2025	Toitu Ekos Carbon Neutral Waiheke	Establish baseline	Annual
	% contracts engaged in by local board with businesses that	Ariba	Establish baseline	Annual

⁶² Crown Conservation Estate, Regional Parks, and covenanted areas e.g. QEII National Trust and Nga Whenua Rahui

⁶³ <https://www.landcareresearch.co.nz/resources/maps-satellites/pannz>

Theme	Targets	Monitoring method	Baseline	Frequency
	have climate goals			
Transport – Ikiiki	% of electric buses	Fullers		
	% of electric or hybrid ferries	Fullers Sealink	0	Annual
	Additional Metres of cycleway	Auckland Transport	0	Annual
Community and coast – Ngā hapori me te tahatai	Average carbon footprint for Waiheke Local Board Area residents of 2.5 tonnes per person by 2030	Auckland Council	6.3 tonnes	Annual
	Percentage of Waiheke Local Board area residents aware, concerned about climate change	Regional survey data	TBC	TBC
	Number of community facilities with solar, battery, vehicle and device charging stations	Facilities & Resilience Team	0	Annual
	Numbers attending Annual Community Resilience Hui ⁶⁴	Regional survey data	To be established	TBC
Food – Ngā kai	Area of urban agriculture	Kai Waiheke	Establish baseline	Ongoing
	100% of community facilities, local food markets and	Community facilities Local food markets	Establish baseline	Annual

⁶⁴ Or surveying to measure the number of household and businesses that have regular emergency preparedness conversations or planning sessions

Theme	Targets	Monitoring method	Baseline	Frequency
	schools composting food waste	Schools		
Te Puāwaitanga o te Tātai	Piritahi Marae carbon positive	Marae	Establish baseline	As required
Energy and industry – Te ngao me te ahumahi	100% renewable energy by 2035	Percentage of grid electricity from renewable sources	84%	Annual
		Local decentralised energy generation capacity	Establish kWh	Annual
		Number of businesses that have eliminated the use of fossil fuel energy sources	Establish baseline	Annual

12. Definitions

Definitions of climate, kaitiakitanga and sustainability terms

Adaptation	Actions taken to help communities and ecosystems cope with changing climate conditions.
Carbon positive	Carbon negative and climate positive are often used interchangeably. Climate positive means that an activity goes beyond achieving net zero carbon emissions to actually create an environmental benefit by removing additional carbon dioxide from the atmosphere.
Circular economy	A circular economy is one in which materials, products and components retain their value and continue to be reused throughout their lifespan.
Climate resilient development pathways (CRDPs)	Trajectories that strengthen sustainable development and efforts to eradicate poverty and reduce inequalities, while promoting fair and cross-scalar adaptation to and resilience in a changing climate. They raise the ethics, equity and feasibility aspects of the deep societal transformation needed to drastically reduce emissions to limit global warming (e.g. to 1.5°C) and achieve desirable and liveable futures and well-being for all.
Food security	According the United Nations' Committee on World Food Security, food security is defined as the means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.
Kaitiakitanga/tiakitanga	Guardianship, including stewardship; the processes and practices of looking after the environment.

Definitions of climate, kaitiakitanga and sustainability terms

Keystone species	Species that provide such a critical ecosystem function that their removal or depletion can result in ecosystem collapse.
Manaakitanga	The process of showing respect, hospitality, generosity and care for others.
Marginal land	Land is marginal where the income from production is less than the cost of the land. Land may be marginal for a number of reasons, including poor water supply, poor soil quality, pollution from previous industrial activities, terrain challenges such as excessive slope or distance from transportation.
Mātauranga	Māori knowledge and expertise.
Mitigation	A reduction in greenhouse gas emissions – which reduces the severity, harm and seriousness of climate change.
Net zero	Net-zero emissions describes a situation where the amount of greenhouse gases emitted into the atmosphere is equal to the amount sequestered or offset (e.g. by forestry).
Ōritanga	Equity.
Rāhui	A rāhui is a form of tapu, restricting access to, or use of, an area or harvesting resources by the mana whenua as kaitiakitanga of the area.
Rangatiratanga	There are two concepts: 1. chieftainship, right to exercise authority, chiefly autonomy, chiefly authority, ownership, leadership, leadership of a social group, domain of the Rangatira, noble birth, attributes of a chief. 2. kingdom, realm, sovereignty, principality, self-determination, self-management – connotations extending the original meaning of the word resulting from the Bible and Treaty of Waitangi ⁶⁵ .
Regenerative tourism	Regenerative tourism focuses on the restoration of nature and the building of social capital to ‘give back’ to the land and people ⁶⁶ .
Resilience	The ability of a system, community or society exposed to the effects of climate change to resist, absorb, accommodate, adapt to, transform and recover. Including preserving and restoring essential basic structures, services and functions.
Social procurement	Organisations using their buying power to generate social value above and beyond the value of the goods, services or construction being procured.
Sponge city	Sponge cities are, as their name suggests, designed to soak up as much extra water as possible. These areas are designed, or in many cases redesigned, to use a combination of storage tunnels, permeable pavements, rain gardens, constructed ponds and wetlands to store as much water as possible.
Tōnuitanga	Prosperity, abundance, plenty.

⁶⁵ <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/response/Pages/te-ora-o-tamaki-makaurau-framework.aspx>

⁶⁶ <https://pureadvantage.org/news/2020/07/31/regenerative-tourism-opportunity-for-tourism-recovery/>

Definitions of climate, kaitiakitanga and sustainability terms

Wetlands	Wetlands are characterised as being permanently or intermittently wet areas of shallow water, with land/water margins that support a natural ecosystem of predominantly indigenous plants and animals that are adapted to wet conditions. ⁶⁷
Whānaungatanga	Relationship, kinship, sense of family connection. A relationship through shared experiences and working together that provides people with a sense of belonging.
Vulnerable communities	Vulnerable communities are at higher risk for poor health as a result of the barriers they experience to social, economic, political and environmental resources, as well as limitations due to illness or disability. Children, pregnant women, elderly people, malnourished people, and people who are ill or immunocompromised are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability ⁶⁸ .

⁶⁷

<https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20L%20Schedules/Schedule%201%20Wetland%20Management%20Areas%20Schedule.pdf>

⁶⁸ https://www.who.int/environmental_health_emergencies/vulnerable_groups/en/

Appendices

The development of this Climate Action Plan included a stocktake of local initiatives that are making a positive contribution towards reducing the Waiheke Local Board area’s carbon footprint:

Appendix 1: Climate action stocktake Waiheke Local Board area

Group	Project name	Project description
All schools	Marine Education Initiative	Local board funded project to bring together schools and empower them to take action for the marine environment via a mountains-to-sea approach
All schools	Zero waste initiatives	Encouraging students to bring zero waste lunches and to compost food waste. Aiming for zero waste school events
All schools	Travelwise	Encouraging safe and sustainable transport options for the journey to/from school
Awaawaroa Bay Ecovillage	Awaawaroa Bay Ecovillage	Ecovillage – holds regular open days to demonstrate sustainable living practices
Blackpool Community Garden	Blackpool Community Garden	Community garden at the old Blackpool school
Blackpool Residents Association		Pest control
Carbon Cycle Company	Carbon Cycle Company	Business providing composting systems and encouraging local composting
Carbon Neutral Waiheke	Carbon Neutral Waiheke	Working to calculate and reduce the carbon footprint of Waiheke
Clean Island Waiheke	Clean Island Waiheke	Private business with goal to eliminate construction waste on the island
Cycle Action Waiheke	Biketober	Annual event to promote cycling
Cycle Action Waiheke	Bike Hub	Establishment of community cycle hub for basic repairs etc
Electric Island	Electric Island	Project advocating for Waiheke Island to have only electric vehicles by 2030
Extinction Rebellion	Extinction Rebellion	Climate action advocacy group
Forest and Bird - Hauraki Islands Branch		Planting, pest control and restoration projects – 120 hectares of protected native bush including Atawhai Whenua Reserve, Onetangi Reserve, Te Haahi / Goodwin Reserve, and Awaawaroa
Fossil Bay School	Sustainable school programme	
Friends of Awaawaroa Wetland		Planting and regeneration of the Awaawaroa Stream and wetland
Friends of McKenzie Reserve		Planting and regeneration of the McKenzie Reserve

Friends of the Hauraki Gulf		Working toward the establishment of a new marine reserve on the northern coast of the island
Hauraki Gulf Conservation Trust		Umbrella group supporting several local projects including: McKenzie Reserve, Enclosure Bay Predator Free Waiheke Waiheke Walking Festival Te Toki Reserve/Okahuiti Wetland Restoration Waiheke Schools Wetland Restoration Awaawaroa Bay Projects Environmental Signage Further Projects Water Fountain, Mātiatia Wharf, Waiheke Island Friends of the Hauraki Gulf Bring Your Own Bags
Island Waste Collective	Island Waste Collective	Waste collection and resource recovery at the transfer station
Kaitiaki and Friends of Te Aroha Valley & Hekerua Bay		Pest control, planting and restoration
Kelp Gardeners	Kelp Gardeners	Restoration of kelp forests by removing kina, and citizen science marine monitoring
Meat Free Mondays	Meat Free Mondays	Empowering Waiheke residents to fight climate change and pollution by moving towards a more plant-based diet, in line with IPCC recommendations
Motuihe Island Restoration Trust		Pest control, planting and restoration
Motutapu Island Restoration Trust		Pest control, planting and restoration
Neureuter Family Noises Trust		Pest control, planting and restoration
Orapui Pest Control Group		Pest control group
Ostend Community Garden	Ostend Community Garden	Community garden at the property adjacent to Catherine Mitchell Centre
Owhanake Pest Control Group		Pest control group
Piritahi Marae	Maara Kai	Food growing at the marae
Piritahi Marae	Ara Taiao	Teaching youth about food resilience
Piritahi Marae	Hina	Teaching adults about food resilience
Piritahi Marae	Ecological Plan	Project moving towards energy self-sufficiency at the marae including the installation of solar panels
Piritahi Marae		Pest control, planting and restoration

Project Forever Waiheke	Project Forever Waiheke	Reducing impact of tourism on the island. Monitoring programme with a focus on tourism impacts
Rakino Residents and Ratepayers Association		Pest and weed control
Rat Busters		Pest control volunteers, island-wide
Rocky Bay Rat Busters		Pest control
Rotoroa Island Trust		Pest control, planting and restoration
Surfdale Food Forest	Surfdale Food Forest	Community fruit tree orchard behind old post office, adjacent to Surfdale Hall
Te Huruhi Primary School	Garden to Table	Teaching students how to grow and cook their own food
Te Huruhi Primary School	Enviroschools	Environmental activities in schools
Te Korowai o Waiheke		Pest control
Te Matuku Bay Landcare Group		Land care group working on DoC Te Matuku Reserve
Te Toki Reserve/Okahuiti Wetland Restoration		Restoration and weed control of the scenic reserve
Waiheke Collective	Te Korowai O Waiheke	Umbrella for all terrestrial and marine restoration projects on the island. Key initiative Te Korowai O Waiheke working towards predator-free Waiheke
Waiheke Collective	Marine Project	Advocate for marine protection in Tikapa Moana
Waiheke Connect	Waiheke Connect	Business network with interest in sustainable business
Waiheke Health Trust	Healthy Homes Initiative	Partnership with Habitat for Humanity to provide support to low income families on how to make their homes warmer, drier and more energy efficient
Waiheke High School	Sustainability Group / School Strike for Climate	Waste minimisation, school strike for climate
Waiheke Kindergarten	Enviroschools	Enviroschools programme with emphasis on waste minimisation
Waiheke Primary School	Garden to Table	Teaching students to grow and cook the food they have grown
Waiheke Primary School	Enviroschools	Environmental activities in schools
Waiheke Primary School	Vector solar panels on school	
Waiheke Resources Trust	Kai Conscious	The project aims to reduce household food waste, connect community and encourage composting within schools and the community
Waiheke Resources Trust	Kai Conscious	Rescue food collections supporting other community organisations (e.g. budgeting service) with food delivery, community fridge and pantry. On Fridays hosting lunch to feed

		100-150 people and educating on food waste minimisation through inventive cooking
Waiheke Resources Trust	The Compost Co.	Sustainable business model that seeks to compost commercial food waste utilising a hot composting system. Produces compost for sale. Expanding into establishing market gardens at vineyards, restaurants etc using the compost for soil enrichment
Waiheke Resources Trust	Compost Collective	Delivery of composting workshops
Waiheke Resources Trust	Zero Waste Events	Event planning to minimise waste including hire of 'Towards Zero Waste' kits for events to minimise landfill waste by reducing, reusing and recycling materials including food waste. At least 16 events per year
Waiheke Resources Trust	Love our Wetlands	Ecological restoration and protection of 4 significant wetland habitats and surrounding environments on Waiheke Island – Mātiatia, Owhanake, Okahuiti, Te Huruhi Bay Reserve, Rangihoua, Te Whau, and Te Matuku. Received government funding to scale up (employing 28 people). Planting 5000-10,000 per year
Waiheke Resource Trust	Kai Gardens	Raising veggie seedlings and selling to community at cost. Training volunteers in seed raising and food growing
Waiheke Resources Trust	Waiheke Food Resilience Hui	Running a hui to gauge community interest and direction for Waiheke food resilience and supporting initiatives that come out of the hui
Waiheke Resources Trust	Good to Go	Partner with PFP seeking to replace coffee cups with reusable glass or metal reusable options
Wild Omiha		Pest control, planting and education

Appendix 2: Contributors to this action plan

We would like to thank the following people for their contribution to the plan:

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Appendix 3: Island comparison – ease of carbon transition

Table 2 overleaf contains a summary of Waiheke Local Board area island land uses, historic features, size, land area stakeholders, energy sources, and an assessment of the ease of carbon transition, noting climate related goals.

Island	Land character	Historic	Area	Key stakeholders	Energy sources	Land use	Ease of carbon transition
Rangitoto Island	Scenic reserve Lava fields Pōhutukawa forest	Volcanic island	23.11km ²	Ngāi Tai, Ngāti Pāoa, Rangitoto Island Historic Conservation Trust, DOC	Petrol and diesel DOC/tour vehicles Bottled gas heating and cooking, solar lights ⁶⁹	Conservation, recreation 30 baches Pest-free status	DOC Sustainability Programme - halve diesel fuel bills
Motukorea Island – Browns Island	Part of Hauraki Gulf Martime Park Recreation Reserve Scoria cone Grazing	Volcanic Island Pa sites middens, systems, rock shelters	59.89ha	Ngāti Pāoa DOC		Park Pest-free status	
Motuihe Island Te Motu-a-Ihenga	Recreation, reserve, native vegetation, pasture, DOC campsite		179ha	Motuihe Island Restoration Trust	Non-powered gas BBQs, DOC vehicles	Camping Restoration Pest-free status	
Motutapu Island Te Motutapu a Taikehu	Part of Hauraki Gulf Martime Park	300 Māori pa, kainga, kumara storage pits, former gardens and archeological sites	15.1km ²	Motutapu Island Restoration Trust, Motutapu Farms, Department of	Motutapu Solar Project ⁷⁰ – generation 65,000kWh pa Petrol and diesel for farm/DOC vehicles	Regenerative farming Restoration Pest-free status	DOC Sustainability Programme - halve diesel fuel bills

⁶⁹ www.rangitoto.org

⁷⁰ Power generated on the island supplies a number of DOC houses where staff and contractors live. It also supplies the Motutapu Outdoor Education Camp (MOEC), which hosts 12,000 guests a year, and the Motutapu Farm. <https://www.doc.govt.nz/news/media-releases/2010/nzs-largest-off-grid-solar-power-system-ready/>

		World War II military sites		Conservation , Tainui			
Pakatoa Island	Privately owned		24.08ha		Conference facility, 24 accommodation units, staff accommodation, cottages and golf course	Private Recreation	
Pakihi Island – Sandspit Island	Pastoral land, plantations , areas of native vegetation		114ha	Private owner McCallum Family			
Ponui Island – Chamberlains Island	Farmland – youth camping, native bush		18km ²	Chamberlain and Spencer Farms	Petrol and diesel for farm vehicles, Solar and diesel generators ⁷¹	Farmland	
Rākino Island	Pasture, pockets of pōhutukawa, 76 dwellings, 21 residents	Holiday homes	1.5km ²	Rakino Ratepayers Association, Belaire Ferries	No grid electricity, solar	Fire risk, drought, stabilise slopes	Marine survey, possible marine protection area
Rotoroa Island	Pohutukawa forest (30,000 pōhutukawa and 360,000 other native trees)	Salvation Army	82ha	Rotoroa Island Trust, DOC	Electric BBQs, Mahoe Oranga and Serenity Holiday Homes, Supers House, Exhibition Centre	Predator-free status	
Tarahiki Island	Spotted shag breeding colony	Known as Shag Island	6 ha		None		
The Noises – Ōtata Island, Motuhoropa Island, Ruapuke Island	Part of Hauraki Gulf Marine Park chain of islands,	Mana whenua call these the net floats of Nga Poitū o	Various	Neureuter Family Noises Trust	None	Predator-free status	No current on-island fossil-fuel usage

⁷¹ <https://www.nzherald.co.nz/the-country/news/farmer-living-the-dream-on-ponui-island/YHEULKFD7NW2YSAEH2AWARFW4/>

	rock stacks and reefs, pōhutukawa Forest	Taramainuku				
Waiheke Island	Residential business, farmland, wineries, tourism, beach and Whakanewha Regional Park Reserve	Hilly, highest point 231m	92km ² 40km beaches	Refer Appendix 2	Grid electricity via cable connection, some solar PV, fuel for >6,000 vehicles, bottled gas	Refer section 3

Table 2: Island Comparison – Ease of carbon positive transition

Key – Predicted ease of carbon transition to carbon positive			
Low	Medium	High	Current
	Grid electricity main power source, petrol and diesel-fuelled vehicles, bottled natural gas	Minimal island fossil fuel usage	No current on-island fossil fuel supply/usage ⁷²

⁷² Assessment excludes travel to and from islands

