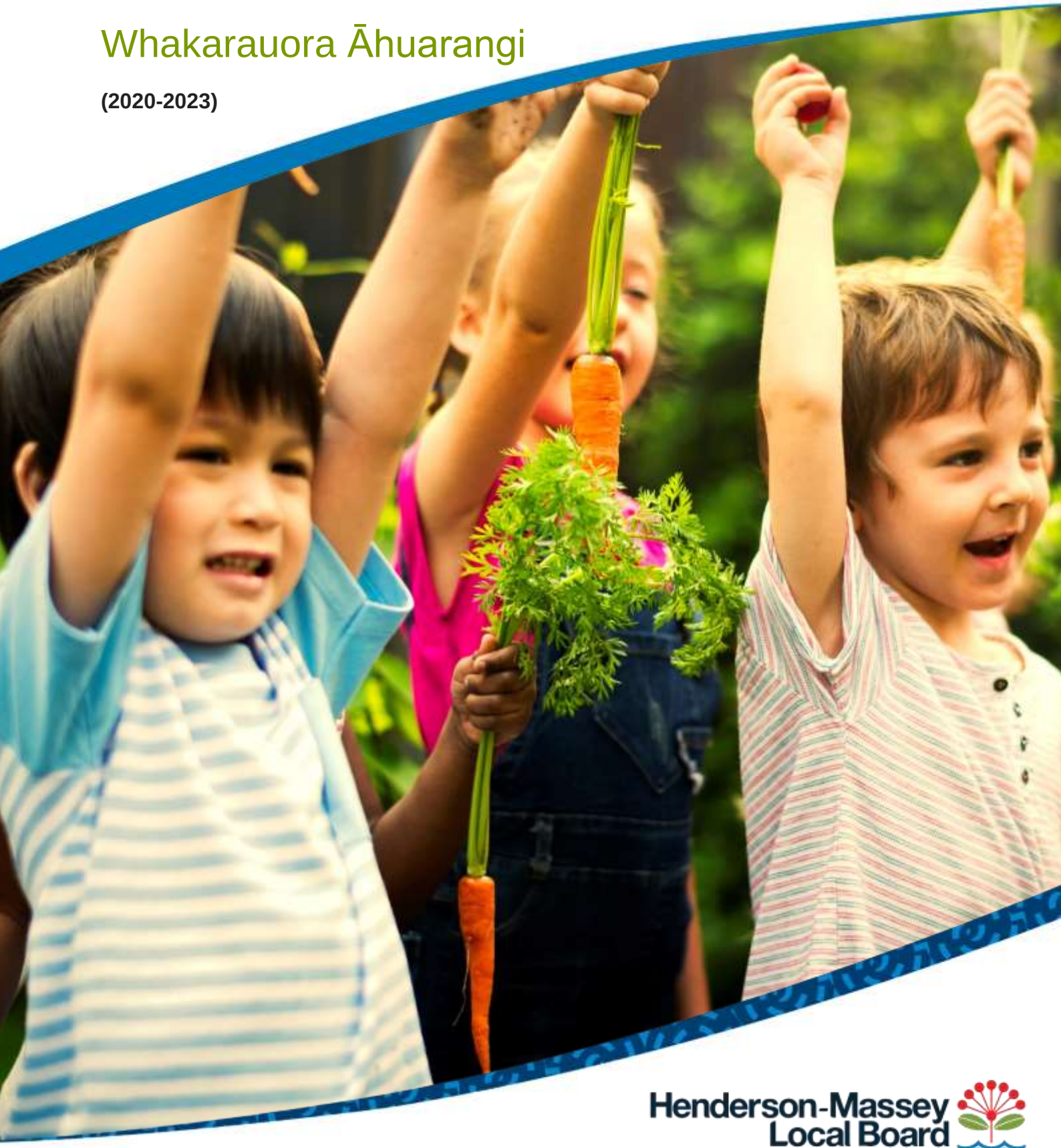
Henderson-Massey Local Climate Action Plan

Whakarauora Āhuarangi

(2020-2023)



Henderson-Massey Local Board
Auckland Council

Contents

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 and in 2020 it 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, to lead and advocate for initiatives that build community resilience and reduce our emissions and foster strong local partnerships with mana whenua and Māori communities. The *Henderson-Massey Local Climate Action Plan* is our response to this call.

Henderson-Massey already has strong foundations, with a legacy of climate positive projects. There are over 80 climate action related projects already underway in Henderson-Massey. Our community of 123,300 residents, 9,300 businesses, mana whenua and Māori communities, and a network of strong community and environmental groups are already focused on the restoration of our waterways, improving the health and efficiency of our homes and buildings, extending and connecting our pedestrian and cycle networks, building local food resilience, concentrating development around our public transit links, working at a regional level to strengthen these links and supporting the local business community as we respond to COVID-19, and the transition to a circular zero carbon economy.

This board is committed to taking a path of environmental and social integrity, and as we rebuild through COVID-19 we will focus on:

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

By working together, we can accelerate the positive changes required, changes that will also improve our health and wellbeing, to meet our goal of halving carbon emissions by 2030 and reaching carbon zero by 2050. Through the *Henderson-Massey Local Climate Action Plan* we will contribute towards meeting our regional, national and international climate goals.

I invite all Henderson-Massey residents to join us in our journey to becoming one of Tāmaki Makaurau's first zero carbon communities.

Chris Carter

Chairperson, Henderson-Massey Local Board

1. Introduction

The Auckland Plan, and *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan*, lay the foundation for Auckland's transformation into a resilient, zero carbon community which 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.
- To adapt to the impacts of climate change by ensuring we plan for the changes we face under our current emissions pathway.

This Action Plan sets out how Henderson-Massey can make this transition a positive pathway, socially, economically and environmentally by focusing on the actions we can start to take now that are good for our communities. The plan also sets some medium-term targets that will create a pathway towards zero carbon.

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 change.

Table 1 below shows the relationship between plans, our carbon goals, and our priority areas, which are drawn from *Te Tāruke-ā-Tāwhiri* and development of this Henderson-Massey Local Climate Action Plan, for action and implementation.

Plans	Our goals	Our priority areas	Implementation
Auckland Plan *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan* Long-term plan Henderson-Massey Local Board Plan Local Climate Action Plan	→ Halving emissions by 2030 → Zero carbon by 2050 → Adapting to the impacts of climate change	→ Natural environment → Built environment → Transport → Economy → Community and coast → Food → Te Puāwaitanga ō Te Tātai → Energy and industry	→ Henderson-Massey Climate Action Advisory Group → Working together, partnerships → Governance, funding & engagement → Measuring progress

While the global goal aims to ensure temperature rises are below 1.5°C to avoid the most severe consequences of climate change, we are already beginning to experience localised effects like heavy rain events, storm surges and coastal inundation, extreme heat events and drought. These are likely to increase in frequency and severity.

This Action Plan includes actions to build our resilience and adaptations that we must take to protect against the unavoidable and harmful effects of climate change. It also addresses how we can offset and capture carbon through the restoration of our taiao / environment.

Henderson-Massey Local Board will continue to:

- robustly and visibly incorporate climate change considerations into work programmes and decision-making
- 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
- include climate impact statements on all local board reports
- ensure that carbon emission reduction opportunities are identified and achieved, and greater resilience built.

We look forward to working with iwi, local and central government and community partners to ensure a collaborative response.

This Action Plan can only be successfully implemented with the support and participation of the Henderson-Massey 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 become a part of leading our transition towards a zero carbon future in Henderson-Massey.

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

Henderson-Massey is home to 123,300 residents[1]. With an average carbon footprint of 6.3 tonnes per person for Aucklanders, our local board area generates an approximate 776,790 tonnes of carbon dioxide emissions (CO_2e) per annum[2].

For this local board area to become carbon zero at the current carbon price of $35[3] per tonne CO_2e, we would need an annual investment over $27 million dollars. This figure is indicative of the unmet environmental and social costs of how we currently live and work as a community.

[1] https://www.stats.govt.nz/tools/2018-census-place-summaries/henderson-massey-local-board-area
[2] Based on an average of carbon footprint of 6.3 tonnes CO_2e per annum for each of the 123,300 residents
[3] http://www.carbonnews.co.nz/tag.asp?tag=Carbon+prices

3 Henderson-Massey's zero carbon goals

Te Tāruke-ā-Tāwhiri sets out detailed targets and actions to show how Henderson-Massey can support achieving Auckland's goal of halving greenhouse gas emissions by 2030 and achieving carbon zero by 2050.

This means Henderson-Massey residents must reduce their collective carbon footprint to 388,395 tonnes. This is equivalent to reducing our personal footprints to 2.5 tonnes (a 56 per cent reduction) by 2030 or to 0.3 tonnes (a 94 per cent reduction) by 2050.

4 A Te Ao Māori lens

We have used a Te Ao Māori lens to help frame our thinking about, and approaches to, climate change. It helps ensure that taiao / environment, whenua / land and tangata / people remain the focal point for all climate related decisions.

The Te Ora ō Tāmaki Makaurau Wellbeing Framework was developed by the Mana Whenua Kaitiaki Forum in response to *Te Tāruke-ā-Tāwhiri.* These include:

- manaakitanga
- kaitiakitanga / tiakitanga
- whānaungatanga
- rangatiratanga
- mātauranga
- ōritanga
- tōnuitanga.

These principles can be applied as we develop and implement this Action Plan, remembering the world is a dynamic and complex ecosystem of whakapapa interconnections and interdependencies. All things – people, birds, fish, trees, weather patterns – are members of a cosmic family. It is critical we recognise the rights and interests of nature, place and people using a whole living systems approach.

Ngā Aho Taiao	The ability and capacity of ngā taiao / nature anchor to sustain and maintain whole living systems and regenerate its own mauri, while contributing to the mauri of people and land
Ngā Aho Whenua	The ability and capacity of the whenua / land anchor to sustain and maintain whole living systems and regenerate its mauri, while contributing to the mauri of people and nature
Ngā Aho Tangata	The ability and capacity of the tangata / people to sustain and maintain their mauri, while contributing to the mauri of the land and nature

5 What are climate actions?

Climate actions are projects, initiatives and activities which better connect us to the taiao / environment and whenua / land.

Climate actions aim to reduce our greenhouse gas emissions to begin to achieve a better balance and reciprocity between the carbon we emit and the carbon that our environment is able to absorb or sequester. Meaning that we will be able to sustain and maintain whole living systems, and regenerate the mauri of taiao / environment, whenua / land and tangata / people.

They will:

- reduce or eliminate our use of fossil fuels (petrol, oil, diesel, natural gas, coal)
- result in changes to our lifestyles, businesses, infrastructure, buildings, consumption patterns, behaviour and environment which reduce or eliminate greenhouse gas emissions (mitigation)
- help restore the taiao / environment, whenua / land, seas / tangaroa and waterways / awa and puna
- increase our ability to respond to the climate changes already locked in by helping us prepare, adapt and become more resilient.

6 Developing the plan

The development of this Climate Action Plan included a stocktake of local and Auckland-wide low carbon initiatives which make a positive contribution towards reducing Henderson-Massey's carbon footprint, build community resilience, or help us adapt to climate change.

We identified over 90 existing initiatives that respond to the climate emergency, with many already planned and underway. Some appear in this plan as case studies, and they are summarised in Appendix 1. Where possible, we have incorporated targets and actions contained within the stocktake which can be accelerated or expanded through this plan.

Henderson-Massey has strong business, iwi and community organisations that support projects which reduce (mitigate) climate emissions, build resilience, and allow for adaptation.

A Henderson-Massey Climate Action Advisory Group has also been formed with representatives from the local board, Auckland Council, Community Waitakere, EcoMatters Environment Trust, Te Atatū Peninsula Business Association, and youth. This group has informed development of the plan and will continue to meet to support its implementation. Māori and Pasifika representatives will be sought for the Climate Action Advisory Group, as well as further representation from the business community.

The COVID-19 pandemic meant some planned public consultation didn't take place. As an alternative to a Climate Hui a series of virtual meetings and interviews were held with key community stakeholders, Auckland Council staff, and council-controlled organisations. A full list acknowledging the contribution of these people is in Appendix 2.

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

- Henderson-Massey Local Board Plan 2020
- Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan 2020
- findings from the Hāpai te Hauora Climate Hui
- insights from the Active Travel West Auckland Strategic Forum held in June 2020[4]
- other existing plans and initiatives highlighted within each section of this plan.

7 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, the environment and infrastructure. Actions included in the Henderson-Massey Local Climate Action Plan have been informed by the risks identified.

[4] With attendees from: Ministry of Health, Henderson-Massey Local Board, Waitākere-Ranges Local Board, Whau Local Board, Auckland Council, Auckland Transport, Auckland District Health Board, Panuku Development Auckland, The Cause Collective, Riverpark Action Group, He Oranga Poutama, Healthy Active Learning, Sport Waitākere, and Healthy Families Waitākere.

The council is currently developing location specific plans to help us better understand the specific risks and effects in our area. The Auckland Emergency Management website has details on Auckland's natural hazard risks and actions and resources to prepare for these hazards both at home and at work.[5]

8 Implementing the plan

We intend this Action Plan to be owned and implemented by the whole community. The Henderson-Massey Local Board will support this where possible through activities including:

- advocacy, including to other governing bodies
- funding to enable local project delivery
- further investigation of potential climate initiatives
- leadership through delivering projects directly and enabling and encouraging others
- partnerships
- promotion
- monitoring and recognition.

The Henderson-Massey Climate Action Advisory Group will feed into this process.

Our key partners include:

- mana whenua and Māori communities
- Waitematā District Health Board – Waitākere Hospital
- Central Park Henderson Business Association, Te Atatū Peninsula Business Association and the Business Improvements Districts (BIDs)
- private businesses including small & medium-sized enterprises (SMEs) and multi-nationals
- community organisations
- schools and tertiary providers
- central government
- utility providers and renewable energy businesses

[5] https://www.aucklandemergencymanagement.org.nz/

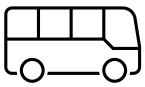
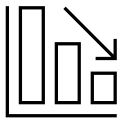
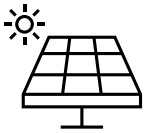
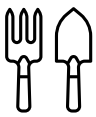
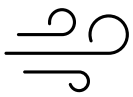
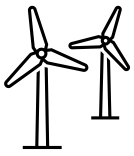
9 The Action Plan

This plan builds on Henderson-Massey's existing environmental and sustainability initiatives, and the commitment in the Henderson-Massey Local Board Plan 2020 to adopt and implement a local climate action plan. It focuses on the priority areas from *Te Tāruke-ā-Tāwhiri* which include natural environment, built environment, transport, economy, community and coast, food, Te Puāwaitanga ō Te Tātai, and energy and industry.

For each of these areas, our 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 community consultation such as:
    - flagship climate action projects we will try to support and help fund
    - a monitoring framework for measuring progress against these targets

The table below summarises our flagship projects. There is more detail, shown with light blue shading, in each section of this plan.

Action area		Flagship projects*
1. Taiao māori **Natural environment**		➔ Plant 2069 big trees in parks and reserves by 2024 ➔ Double tree cover to 30% by 2050
2. Taiao hanga **Built environment**		➔ Zero Carbon Te Kōpua – Falls and Alderman Development ➔ Low Carbon Redhill's Green Masterplan Development
3. Ikiiki **Transport**		➔ Te Whau Pathway ➔ North Western Busway ➔ 100% electric buses by 2040
4. Ōhanga **Economy**		➔ A Green New Deal ➔ Zero Carbon Business Programme
5. Ngā hapori me te tahatai **Community and coast**		➔ Annual FutureFit Challenge ➔ Solar battery charging systems for community emergency facilities
6. Ngā kai **Food**		➔ Areas for urban agriculture mapped ➔ Kai strategy
7. Te puāwaitanga ō Te Tātai		➔ Te reo *Te Tāruke-ā-Tāwhiri* pilot programme for kura and immersion units ➔ Low Carbon Te Atatū Marae
8. Te ngao me te ahumahi **Energy and Industry**		➔ Programme to reduce process heat and industrial process emissions ➔ Zero carbon whanau street initiative

*Further details of flagship projects are contained within each section of the Action Plan and are shown with light blue shading.

9.1 Taiao māori – Natural environment

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

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

Restoring, maintaining, developing and creating more green spaces within Henderson-Massey will help reduce the effect of climate change on our communities and maximise carbon sequestration through plants and trees capturing carbon from the atmosphere.

Pest control will be critical in managing these spaces to maximise carbon uptake.

We need to increase planting with trees in streets, parks and reserves, along waterways and around the coast, on green roofs and walls, and in gardens.

Together with sustainable land management, these activities will:

- help keep us cooler in summer
- reduce the effect of heavier rainfall and flooding from climate change
- support our native ecosystems by enhancing the mauri / life essence of the Twin Streams Wai o Panuku and Wai Horotiu, and the Motu Manawa Marine Reserve.

Our local board area currently has below average tree coverage for Auckland.

There is significant concern that while community groups are working hard to plant reserves, we are losing more unprotected trees on private property as housing development accelerates. At 15 per cent, Henderson-Massey just meets the minimum tree coverage required under Auckland's Urban Ngahere (Forest) Strategy. Our current tree coverage is:

- 31 per cent in public open spaces
- 14 per cent on private land
    - residential 16 per cent
    - rural 16 per cent and
    - industrial/commercial zones 6 per cent
- 7 per cent on roadsides[6].

Between 2015 and 2018 our canopy cover increased by 21 hectares or 0.4 per cent. The Urban Ngahere Strategy's target average canopy cover is 30 per cent (Auckland Council, 2019). Over the next three decades, we can work to double the amount of tree canopy in Henderson-Massey.

The pressures of pests and diseases is expected to increase as our climate changes. The Urban Ngahere Strategy prefers native species and improved links between green spaces through ecological corridors. We can also choose species that will better cope with our changing climate.

[6] Auckland Council (2019) Local Development Initiatives – Urban Ngahere Programme

Current activities, actions, programmes and plans

- ➔ Henderson-Massey Open Space Network Plan 2015-2025
- ➔ Auckland's Urban Ngahere (Forest) Strategy
- ➔ Project Twin Streams
- ➔ Harbourview-Orangihina Park Master Plan
- ➔ Henderson-Massey Ngahere Grow Plan
- ➔ See Appendix 1 for a detailed list of projects

Goals

- Offset residual emissions from hard-to-reduce sources
- Plant 2069 big trees[7] in parks and reserves by 2024
- Collaborate with partners to increase the Henderson-Massey urban tree canopy cover from 15 per cent (2016-2018) to 30 per cent by 2050
- Achieve at least 30 per cent tree canopy cover for our streets by 2050
- Strengthen resilience to climate related hazards and natural disasters

Opportunities and benefits

These actions will have much broader positive impacts:

- ➔ Carbon sequestration
- ➔ More shelter and sunshade provided
- ➔ Less overheating
- ➔ Biodiversity increased
- ➔ Air quality improved
- ➔ Prevents erosion and improves water quality
- ➔ Improved health and wellbeing
- ➔ Increased property values
- ➔ Reduced flood risk
- ➔ Sustains and enhances mauri
- ➔ Increased resilience
- ➔ Local sources of food

[7] Big trees are defined as trees of 1.5 - 3.0 metres at the time of planting, and which should reach 10 metres height within the next 10 years

Taiao māori – Natural environment actions

Goal	Action	Timescale
⚐	Flagship projects – shaded blue – see summary page 12	
Offset residual emissions	• Explore the use of parks, reserves and open places to offset carbon emissions for individuals and local businesses	Years 1-3
	• Use planting days as an educational opportunity for local residents and schools about the climate issues we face and the available solutions	Ongoing
30% tree canopy cover - support implementation of Auckland's Urban Ngahere (Forest) Strategy	• Adopt, facilitate, and accelerate the implementation of the Henderson-Massey Urban Ngahere Grow Plan which specifically identifies areas for further planting (Appendix 3), revising the plan to ensure targeted tree canopy coverage of 30% is achievable	Year 1
	• Work with key community partners to remove procedural barriers to larger scale planting by simplifying the permissions process and gaining approvals from council teams for agreed areas for expanded future planting	Year 1
	• Identify and prioritise the top 10 locations for future planting on public land in partnership with mana whenua, including the Harbourview-Orangihina Park	Year 1
	• Plant 2069 big trees[8] in reserves, parks and playgrounds to increase the number of shade trees (Appendix 3)	Years 1-3
	• Continue implementing key projects from the Henderson-Massey Open Space Network Plan (2015-2025)	Ongoing
	• Leverage and accelerate partnerships established through existing initiatives (e.g. the Mayor's Million Trees programme)	Ongoing
	• Build on and expand Māori-led environmental initiatives based on a tikanga Māori approach, e.g. through Project Twin Streams, pā harakeke and rongoā plantings	Ongoing
	• Ensure pest control is supported and expanded as areas of planting grow	Ongoing
	• Ensure climate change and mitigation and adaptation measures are included in all Henderson-Massey parks and reserves management plans and restoration plans	Ongoing
Tree protection	• Advocate for the adoption of regional or national mechanisms which introduce greater protection for trees on private land and/or make the protection of trees easier	Years 1-3
Street trees and road corridors	• Develop a programme of street tree planting across Henderson-Massey that will achieve an increase in tree cover to 30% by 2050	Years 1-3
Parks, reserves and open spaces	• Develop and implement the Harbourview-Orangihina Ecological Restoration Plan	Years 1-5

[8] Big trees are defined as trees of 1.5 – 3.0 metres at the time of planting, which should reach 10metres height within the next 10 years

Goal	Action	Timescale
	• Investigate options for the use of the Te Rangi Hiroa Reserve nursery site, with a focus on community-led sustainability and food initiatives[9]	Years 1-3
Private property	• Offer grants, incentives, and support to encourage tree planting on residential properties	Years 1-5
Green infrastructure	• Continue encouraging and enabling the installation of green roofs, living walls, natural stormwater assets and other green infrastructure	Ongoing
Wetlands and coast	• Continue supporting the restoration, rejuvenation, and replenishment of puna wai / freshwater springs, repō / wetlands and moana / seas and harbours	Ongoing
	• Identify opportunities to extend the Motu Mānawa Marine Reserve, home to ecologically important saltmarshes and the endangered railbird, to encompass other neighbouring significant ecological areas.	Years 1-3

What you can do

- Plant trees and plants to support birds, bees, and native wildlife in your garden
- Join a local restoration group or look out for restoration events in your community:
  - EcoMatters
  - Community Waitakere
  - Project Twin Streams
  - Forest and Bird
- Seek funding for your restoration project:
  - Local Board Community Grants
  - Regional Environment and Natural Heritage Fund

[9] Henderson-Massey Local Board Plan 2020

Case study: Project Twin Streams

Figure 2: Project Twin Streams litter removal in Urlich Reserve with St Dominic's volunteers

Project Twin Streams (PTS) is a large-scale environmental project that engages West Auckland communities in restoring streams in their local neighbourhoods. Since 2003, over 881,446 native trees and shrubs have been planted and volunteers have contributed more than 70,000 hours.

9.2 Taiao hanga – Built environment

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.

We need to switch to 100 per cent renewable energy and ensure 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.

Henderson-Massey has 37,569 homes, including 1014 built since 2013 (a 2.9 per cent increase)[10]. Housing development is currently focused in the central Henderson and Redhill areas.

A study conducted by RCG Ltd found that for every new household residing closer to public transport, shops and local town centre amenities, the average household expenditure on fuel for private vehicles drops from $8300 per year to under $2000 per year. Ensuring that the Redhill's Green Masterplan Development has strong public transport links and local amenities will be central to it becoming a low or zero carbon development.

We can also accelerate the retrofit of our existing buildings to improve their energy efficiency which will save money on our power bills. Henderson-Massey has a higher-than-average number of houses that are damp (27.3 per cent) or mouldy (24 per cent), and 8.2 per cent of homes are still unheated[11]. There is also a lower-than-average number of homes with heat pumps – one of the most efficient ways of heating - as the main type of home heating (40.4 per cent)[11]. By upgrading the energy efficiency of homes, we can have big wins for health too.

Creating a circular economy by minimising waste and maximising recovery of construction materials can also reduce carbon emissions. Construction and demolition waste currently makes up 50 per cent of Auckland's total waste stream and is growing.

Auckland's drought has also reinforced the need for greater water efficiency and for on-site water storage as our climate changes.

Current activities, actions, programmes and plans

- ➔ Building for Climate Change Programme
- ➔ Unlock Henderson
- ➔ Warmer Kiwi Homes Grants

[10] https://knowledgeauckland.org.nz/media/1188/henderson-massey-lb-2018-census-info-sheet.pdf
[11] https://www.stats.govt.nz/tools/2018-census-place-summaries/henderson-massey-local-board-area

- ➔ Healthy Homes Standards
- ➔ Kainga Ora Retrofit Programme
- ➔ Healthy Homes on a Budget Workshops
- ➔ Free Water Checks

Goals

- Reduce carbon emissions from community facilities by 50 per cent by 2030
- Maximise the energy efficiency of all buildings:
  - Retrofit 50 per cent of existing residential and commercial buildings to a high standard of energy efficiency by 2030 and 100 per cent by 2050[12]
  - Replace 75 per cent of gas heaters in existing residential and commercial buildings with electric heat pumps by 2030 and 100 per cent by 2050[12]
  - Replace 50 per cent of gas water heaters in existing residential and commercial buildings with electric heat pump water heaters[12]
- 40 per cent of new dwellings are in transit-orientated developments by 2030 and 65 per cent by 2050[12]
- All new buildings operate at net zero carbon by 2030[13]
- 100 per cent of Henderson-Massey's buildings able to operate at net zero carbon by 2050[13]
- Reduce water consumption 15 per cent by 2025[14]
- Reduce construction and demolition waste 50 per cent by 2030 and to zero by 2040[15]
- Avoid and manage risks to buildings due to extreme weather events, drought, increased fire, weather and ongoing sea level rise[16]

Opportunities and benefits

These actions will have much broader positive effects including:

- ➔ 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.

[12] Modelled climate action target from *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan*
[13] World Green Building Council global project goal
[14] *Auckland water efficiency strategy 2017 to 2020*
[15] https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/Pages/waste-management-minimisation-plan.aspx
[16] Ministry for the Environment. 2020. *National Climate Change Risk Assessment for New Zealand: Arotakenga Tūararu mō te Huringa Āhurangu o Āotearoa*

Taiao hanga – Built environment: Actions

Goal	Action	Timescale
⚐	Flagship projects – shaded blue – see summary page 12	
Building for climate change	• Support the introduction of national zero carbon construction targets and building code requirements	Years 1-3
	• Advocate for the introduction of mandatory building energy efficiency labels	Years 1-3
Resilient community facilities	• Ensure all new community facilities are consistent with the Sustainable Asset Standard (Green Star Five or equivalent)	Ongoing
	• Accelerate community facility energy efficiency in all renewals, eliminating all fossil fuel use where possible	Years 1-5
	• Replace gas boilers in all community facilities with renewable energy solutions	Years 1-5

Retrofit existing residential buildings	• Improve access and enable greater uptake of existing initiatives to improve household energy efficiency through local promotions, including:
	  ○ levels of insulation
	  ○ the uptake of electric heat pump (fossil fuel free) space and water heating
	• 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” on page 22).
		Ongoing

	• Support Māori-led initiatives for home health, energy-efficiency and zero carbon construction	Ongoing
Vulnerable communities	• Partner with Kainga Ora to ensure the acceleration of the Kainga Ora Retrofit Programme within Henderson-Massey	Ongoing
	• Identify partnership opportunities 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	• Encourage and support the recovery and reuse of construction and demolition materials and the inclusion of waste and resource recovery management plans and diversion targets within procurement specifications	Ongoing
	• Ensure waste minimisation targets are included within contracts for community facility renewals	Ongoing

Retrofit existing commercial and industrial buildings	• Partner with Panuku Development Auckland (Panuku), Central Park Henderson Business Association, Te Atatū Business Association, Business Improvement Districts (BIDs), Auckland Unlimited and EECA to accelerate the creation of:
	  ○ zero emissions areas
	  ○ a local commercial retrofit programme
	  ○ energy efficient buildings
	  ○ the uptake of onsite renewable energy generation
		Years 3-10 (by 2030)

Water efficiency	• Continue to support water efficiency through the provision of programmes and information which support the installation of water efficient: fixtures, fittings, flow restrictors, appliances, and water tanks	Ongoing

Goal	Action	Timescale
	• Promote, and if possible, partner to subsidise, the installation of water tanks for outdoor and indoor water usage	Ongoing
New commercial buildings – transit-orientated and zero carbon	• Partner with building owners and developers to accelerate the creation of: ○ transit-centred zero emission developments ○ climate resilient commercial buildings ○ uptake of onsite renewable energy generation	Ongoing
	• Continue to identify and optimise opportunities for delivering zero carbon, climate resilient neighbourhoods through Panuku's development projects, such as the Opanuku Precinct in Henderson	Years 1-5
New residential developments – transit-orientated and zero carbon	• Support the achievement of zero carbon status for the Te Kōpua-Falls and Alderman Development	Years 1-5
	• Collaborate to enable a low/zero carbon community development of the Redhill's Green Masterplan Development	Years 1-5
	• Encourage the provision of allotment and community gardens as part of intensive housing developments	Ongoing
	• Collaborate to ensure all new precincts and housing developments are fossil fuel free, low or zero carbon	Ongoing
	• Partner with Kainga Ora to ensure the acceleration of zero carbon housing developments within Henderson-Massey	Years 1-5
All developments	• Green infrastructure – encourage the installation of white roofs, living walls, roofs and water systems which mitigate the effects of climate change	Ongoing
	• Encourage universal design, with buildings durable and adaptable enough to meet the needs of future generations of occupiers	Ongoing
Climate adaptation and risk management	• Provide tools, resources and templates for households and businesses to identify and manage climate change risks	Ongoing
Sustainable construction workforce	• Partner with the Western Initiative, tertiary education providers, Amotai, and local developers and builders to encourage the development of a sustainable zero carbon construction workforce	Years 1-5
	• Encourage the uptake of social and sustainable procurement requirements by local building and construction businesses	Years 1-5

What you can do

At home

- Warmer Kiwi Homes Grants. Homeowners can access funding for up to 90 per cent of the cost of insulation and energy efficient home heating. See eeca.govt.nz/our-work/programmes-and-funding/efficient-homes/
- Borrow a HEAT Kit (Home Energy Audit Toolkit) from an Auckland Library to check your home insulation and find out how to save on your power bill
- Do an online HomeFit assessment to check how easily a home can be kept warm, dry and safe. See https://www.nzgbc.org.nz/homefit
- Talk to Auckland Council's Home Performance Advisor to get advice on the right materials and strategies to create a warmer, drier and more sustainable home. Call 09 3010101
- Building or buying new? Look for Homestar certification. See https://www.nzgbc.org.nz/
- Guidance on water tank installation. See 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. See https://www.nzgbc.org.nz/
- Need energy efficiency expertise? For programmes and funding, see https://www.eeca.govt.nz/our-work/programmes-and-funding/productive-and-low-emissions-business/
- New space? Look for NabersNZ or Greenstar certifications. See https://www.nzgbc.org.nz/

Case study: West Wave Aquatic Centre upgrade will save 632 tonnes of CO_2 a year

Figure 3: West Wave Pool and Leisure Centre Entrance

The West Wave Aquatic Centre is located in the heart of Henderson. It's open seven days a week and visited by over 70,000 people each year. It's also Auckland Council's community facility with the highest energy use and the biggest carbon footprint.

Gas boiler replacement will reduce energy use by an estimated 3,300,000 kWh, saving over 632 tonnes of carbon emissions per year. Renewal work will include installation of LED lighting in the main pool hall, re-instating the rainwater harvesting system, and upgrading the building management system.

Case study: Reducing carbon through Henderson town centre development

Panuku is working to provide households everything they need within close proximity, while helping families save money and reduce their environmental footprint. As part of Henderson's vision to create an "Urban Eco-centre", Panuku undertook a planning exercise in 2018 to identify which urban blocks within 400m of the Henderson Train Station made the most sense to develop for residential housing.

Panuku partnered with Kāinga Ora to analyse 29 sites for development potential, based on access to sustainable transport, stream amenity, and regeneration potential. This resulted in a concept for up to 350 additional family homes in the town centre.

Figure 4: Henderson town centre development

9.3 Ikiiki – Transport

Haere pai atu, hoki pai mai

Travel safe

Transport accounts for 44 per cent of Auckland's greenhouse gas emissions.

People living in Henderson-Massey usually get to work by private vehicle (65.3 per cent) or company vehicle (10.9 per cent). More than half get to their place of study as a passenger or driver of a vehicle (58.3 per cent)[17].

Encouraging walking, cycling, scooting, train, bus, ride sharing, and use of electric vehicles in Henderson-Massey will help reduce these emissions.

Henderson-Massey residents identified access to public transport as the key challenge on climate change[18]. Equitable access to sustainable travel options is a key issue. More active transport modes like walking and cycling aren't workable for everyone. Supporting the transition to affordable low emission vehicles is another important part of the transition to a zero carbon transport system.

Major infrastructure investment is proposed to create better access to public transport, pedestrian and cycle connections. These projects will link town centres, housing, parks, reserves, streams and the coast through a network of pedestrian and cycle pathways.

Key projects include development of the Te Whau Pathway, the North Western Busway and the Opanuku, Oratia and Ratanui links in Henderson town centre.

Developing more housing close to transit hubs like Henderson will also help reduce our dependence on cars. Ensuring that good public transport links are provided for the Redhill's Green Masterplan development area will be essential to the sustainability of the area.

Most Henderson-Massey residents have off-street parking meaning overnight home charging for electric vehicles is relatively easy and convenient with installation of an accessible plug. With over 80 per cent of New Zealand's electricity generated from renewable sources, there is enough supply for widespread adoption of electric vehicles with sufficient generation capacity to charge these provided we charge at off-peak times[19].

[17] https://www.stats.govt.nz/tools/2018-census-place-summaries/henderson-massey-local-board-area
[18] Colmar Brunton (2019) Climate Change Action and Public Perceptions
[19] https://www.transport.govt.nz/multi-modal/climatechange/electric-vehicles/electric-vehicles-and-reducing-transport-emissions/

Current activities, actions, programmes and plans

- ➔ Henderson-Massey Connections Plan (Appendix 3)
- ➔ Unlock Henderson
- ➔ Henderson Bike Hub
- ➔ Te Whau Pathway
- ➔ Northwestern Busway
- ➔ Auckland's Low Emission Bus Pathway
- ➔ Electrifying Auckland Council and council-controlled organisations' fleet
- ➔ Travelwise Programme for Schools
- ➔ Travelwise Choices Programme for Organisations

Figure 5: Try a Bike at the Henderson Bike Hub

Goals

- Reducing the need to travel
- Reducing private vehicle travel by:
    - reducing trip length through transit orientated development

    - enabling flexible and remote working
- Improving the infrastructure for low carbon transport including:
    - creation of low traffic neighbourhoods
    - building better cycle and pedestrian infrastructure and connections
    - making our streets friendlier for pedestrians, scooters and cycles
    - improving access to affordable low carbon public transport
    - building accessible charging infrastructure for electric and share vehicles
- Encouraging and enabling more active transport such as walking, scooting and cycling
- Ensuring equitable and universal access to sustainable transport for all ethnicities, cultures and levels of ability
- Making the switch to electric vehicles more affordable
- 100 per cent of Auckland's bus fleet to be zero emission by 2040
- Ensuring transport assets and infrastructure are resilient to the effects of climate change, including sea level rise

Opportunities and benefits

These actions will have much broader positive effects including:

- ➔ Improving air quality
- ➔ Improving public health
- ➔ Creating more car-free public spaces to enjoy
- ➔ Making cycling and active commuting safer and making us healthier
- ➔ Making it cheaper and quicker to get around

Ikiiki – Transport actions

Goal	Action	Timescale
⚑	Flagship projects – shaded blue – see summary page 12	
Reducing the need to travel	• Work with local business associations and the Business Improvement Districts (BIDs) to support workplace implementation of flexible work arrangements, allowing work from home, video conferencing, and workplace travel planning	Years 1-3
	• Promote Auckland Transport's Travelwise travel demand management programme support through business associations, Business Improvement Districts (BIDs) and schools	Years 1-3
	• Support residential development around the main transport corridors	Ongoing
Improve infrastructure	• In partnership with Auckland Transport, NZTA, Active Travel West Auckland and Cycle Groups update the Henderson-Massey Connections Plan to provide a priority list of planned infrastructure projects for implementation, including the timing of these to improve both awareness and accountability for delivery of infrastructure investments planned for each of the seven focus areas within the plan[20]: ○ Massey and Westgate ○ West Harbour and Royal Heights ○ Te Atatū Peninsula ○ Birdwood, Rānui, Sturges, Western Heights and Sunnyvale (west) ○ Lincoln ○ Te Atatū South, Glendene and Sunnyvale (east) ○ Henderson	Year 1
	• Ensure transport infrastructure is designed and maintained to address the impacts of climate change including sea level rise	Ongoing
	• Prioritise completion of Ranui to Henderson cycle route	Years 1-3
	• Complete the final section of the Te Atatū cycle loop path	Years 1-3
	• Advocate for 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, and public transport hubs, education facilities and other key destinations including: ○ Completion of the Te Whau Pathway, North Western Busway and Opanuku Links in Henderson ○ Progress the rail corridor cycleway ○ Public transport connections to the Redhill's Green Masterplan Development ○ Completion of connections within the Henderson-Massey Connections Plan ○ Complete upgrades which improve cycle and pedestrian safety, such as: ▪ Central Park Drive and School Road intersection upgrade to allow for safe cycle and pedestrian crossing	Years 1-10
	• Continue to advocate to improve public transport connectivity, frequency and affordability – including a reduction in the entry costs for AT Hop Cards	Ongoing

[20] To provide greater clarity about investment decisions, potential for impact and certainty that projects are continuing

Goal	Action	Timescale
	• In partnership with Auckland Council and local bike groups assess[21] the adequacy of cycle and scooter parking at public transport hubs, town centres, schools, parks and other destinations and create a plan for upgrades required	Year 1
	• Work with cycling advocacy groups to provide clear wayfinding signage of the network to make it easier for people to find their way using alternative routes including provision of signage: ○ in commonly used languages e.g. Māori and Samoan ○ weaving in social and cultural narratives	Year 1
	• Work with Auckland Transport to improve access to communal, personal and electric transport options for low-income Aucklanders e.g. electric share car parking, free public charging stations, loan electric bikes, bikes in schools, loan bikes in workplaces	Years 1-5
Equitable access	• Ensure all developments continue to allow equitable access to all ages, stages and abilities – with parking and electric charger parking for young families, elderly and disabled	Ongoing
	• Support activations and activities which reclaim the streets e.g. play streets, shared streets	Ongoing
Promote low carbon travel	• Initiate and support the creation of low traffic neighbourhoods, including support for tactical urbanism projects which encourage sustainable transport choices	Years 1-5
	• Encourage residents to use the FutureFit[22] carbon calculator to better understand their transport footprint	Ongoing
	• Prioritise advice on sustainable travel options in promotion of all local board events	Ongoing
	• Partner with Waitematā District Health Board, Auckland Transport, Sport Waitākere and other community groups to promote the health benefits of active travel modes	Ongoing
	• Provide funding for the Henderson bike hub to enable more members of the community to participate in cycling	Ongoing
	• Continue to support local bike group activation events which promote use and familiarity with safe local cycle routes – including events which focus on different cultural groups	Ongoing
Zero Emission Public Transport by 2040	• Ensure all public transport in Henderson-Massey is 100% electric by 2040	Years 1-20
Fleet Electrification	• Call for additional central government subsidies for electric vehicles	Years 1-3
	• Encourage and enable the provision of community based electric share vehicles, public charging stations and carpooling parks, e.g. Massey Matters community centre e-van	Ongoing

[21] Drawing on past public consultation, local knowledge and prior assessments
[22] https://www.futurefit.nz/

What you can do

At work

- Sign your workplace up to the Auckland Transport Travelwise Choices programme
- Join Love to Ride, the Aotearoa Bike Challenge
- Join the Walk to Work Challenge
- Choose an electric vehicle or one with a 5-star fuel efficiency rating
- Check your car's tyre pressures regularly, choose the right kind of oil, and keep that driving smooth to save up to $500 a year on fuel
- Access personalised journey planning, cycle and public transport promotions, events and resources at www.at.govt.nz/choices

At home

- Walk or cycle more - try out local cycle and walkways
- Visit the EcoMatters Bike Hub at Henderson
- Join a local bike group like Bike Henderson or Bike Te Atatū
- Plan your bus or train trip at at.govt.nz
- Find someone to share a ride with at smarttravel.org.nz
- Set up a flexi workspace so you can work from home
- 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: Bush and Beach lower carbon tourism

Henderson-based tourism business Bush and Beach specialises in guided tours from Auckland. Their Auckland day tours, city tours, Coromandel day tours and trips to Hobbiton means fuel emissions make up most of their carbon footprint. Four years ago, Bush and Beach got serious about carbon emissions and sought Carbon Zero certification from Toitu, New Zealand's biggest carbon certifier.

Since then, Bush and Beach has reduced their emissions by 3.3 per cent per passenger by replacing older vehicles with more modern, more efficient ones. Their Mercedes Benz long wheelbase vans can carry up to 16 passengers with the same or better fuel consumption as a large SUV, with an open road efficiency of 8 litres per 100 kilometres.

Bush and Beach is targeting a 2 per cent reduction in carbon emissions per year. They're also keeping an eye out on the market for electric buses with a range of up to 500km. It is this switch which will really slash their future carbon emissions.

Figure 6 The Bush and Beach team photographed with some of their fleet at the Arataki Visitor Centre

9.4 Ōhanga – Economy

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 zero carbon business community. Pursuing low carbon, resilient process, product and service innovations means local businesses can create new forms of value, prompt new markets and support sustainable growth.

There are over 9,300 businesses based in Henderson-Massey[23]. With the largest number of local businesses in construction, rental, hiring and real estate services, professional, science and technical services, retail trade and manufacturing. These businesses provide over 39,000 jobs with the highest areas of employment within health care and social assistance, retail trade, construction, manufacturing and education and training.[24]

Currently, Bush and Beach and Waitākere Hospital are the only two organisations within the Henderson-Massey Local Board area that have measured and certified their carbon footprints. This means there is a significant opportunity to measure, manage and reduce the carbon emissions created by our local businesses.

We know that many people within Henderson-Massey are experiencing financial challenges, and that COVID-19 and the recession is placing even greater pressure on many households. It is also a time of significant investment as the government invests heavily in strategic projects across the regions.

Henderson-Massey is home to significant communities of Māori and Pasifika who are at risk of being disproportionately impacted by the recession. A Green New Deal has been developed by the Western Initiative which seeks to build prosperity, equity and opportunity with zero carbon sustainable development for these communities which will be a key driver for achieving our climate, economic and social goals.

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

- strategic local and social procurement practices
- energy efficiency improvements
- more rapid uptake of low emission vehicles
- zero carbon developments
- renewable energy generation.

[23] https://ecoprofile.infometrics.co.nz/Henderson-Massey/Businesses
[24] https://ecoprofile.infometrics.co.nz/Henderson-Massey/Employment

Planning to respond to the risks created by climate change is also an essential part of continuity planning and risk management. Auckland Council, Auckland Unlimited and EECA have many existing resources and programmes which can support our businesses.

By increasing support for buying local, incentivising and giving recognition for more sustainable business practices, and encouraging flexible work environments and travel planning, we can also support increased sales, reduced operational costs, and reduced needs for travel while also supporting sustainable travel choices for customers and employees.

Current activities, actions, programmes and plans

- ➔ EECA Energy Efficiency Technical and Funding Support
- ➔ Climate Leaders Coalition
- ➔ Work Ready – Business Continuity Planning
- ➔ Hazard Viewer
- ➔ Mandatory Climate Related Financial Disclosure

Goals

- A Western Initiative Green New Deal will drive investment into zero carbon development and employment within Henderson-Massey
- Aotearoa's first thriving zero carbon business community - Henderson-Massey businesses have become climate leaders
- By 2025 local businesses are prepared for climate change with a just transition planned to create a local zero carbon economy
- By 2025 local businesses have:
    - reduced their carbon emissions by 25 per cent
    - measured their carbon footprints and set targets to halve their footprints by 2030 and reach carbon zero by 2050 and
    - identified and planned for climate risks

Opportunities and benefits

These actions will have much broader positive effects including:

- ➔ Increased profitability
- ➔ Improved efficiency
- ➔ Greater levels of innovation
- ➔ Greater access to capital
- ➔ Lower operating costs
- ➔ Better air quality
- ➔ Higher sales
- ➔ More productive workforce
- ➔ Better work-life balance
- ➔ Less risk for businesses
- ➔ Business better prepared for emergencies

Ōhanga – Economy actions

Goal	Action	Timescale
⚐	Flagship projects – shaded blue – see summary page 12	
A Green New Deal	• Support implementation of the Western Initiative Green New Deal to drive investment into zero carbon development and employment within Henderson-Massey	Year 1
Buy local	• Promote the use of local businesses for goods and services	Ongoing
	• Recognise and promote local businesses that are climate change leaders and support others to follow them	Ongoing
	• Encourage a greater variety of local shops and a business mix that supports the needs of local residents, reducing the need for travel	Ongoing
Business decarbonisation	• Partner with local business associations and Business Improvement Districts (BIDs) to identify current emission levels and opportunities for strategic support and investment	Year 1
	• Host a programme for local businesses in partnership with Te Atatū Peninsula Business Association, Central Park Henderson Business Association, the Business Improvement Districts (BIDs), iwi, Amotai, Auckland Unlimited, Auckland Transport, EECA and carbon certification providers to support local business in: ○ understanding climate change ○ understanding this Action Plan and *Te Tāruke-ā-Tāwhiri*: Auckland's Climate Plan ○ preparing to measure, manage, certify and offset emissions ○ planning for climate risks and a just transition ○ accessing advice and support from: ▪ EECA to maximise energy efficiency and electric vehicle (EV) uptake ▪ Auckland Transport for travel demand planning and staff engagement and training and ▪ carbon certification and offset providers (Toitu, Ekos, CarbonClick, COGO) ○ how to start with simple steps to take, including waste minimisation actions[25] ○ creating continuity and transition plans	Years 1-3
Just transition	• Identify local businesses that may be adversely affected by the transition to a zero carbon economy	Years 1-3
	• Help businesses adversely impacted by the transition to a zero carbon economy plan and prepare for a just transition	Years 3-5
Resilience	• Support businesses across Henderson-Massey to develop risk management and continuity plans in response to climate change and extreme weather events	Years 3-6
Circular economy	• Provide practical support to encourage a regenerative circular local economy that can use all waste as a resource	Ongoing
Procurement	• Ensure council procurement and procurement by other large local businesses recognises businesses that have climate goals	Ongoing
	• Support Māori and Pasifika businesses and social enterprises through procurement practices and partnership with organisations like Amotai	Ongoing

[25] https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/Pages/waste-management-minimisation-plan.aspx

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.

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 support 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: Waitākere Hospital is certified carbon reduce organisation

Figure 7: Promoting Meat Free Mondays at Waitākere Hospital

Waitematā District Health Board (Waitematā DHB) serves a population of more than 630,000 including the Henderson-Massey Local Board area. It is the largest and one of the fastest-growing DHBs in the country and employs around 7500 people.

Waitematā DHB has been a Toitū carbonreduce (formally CEMARS) certified organisation since 2017.

Waitematā DHB measures its carbon emissions annually and works towards established reduction targets to maintain its certified status. The DHB is audited annually by Toitū to ensure it meets the carbonreduce programme standards. The health sector has an important opportunity to play a leadership position in mitigating and adapting to the effects of climate change.

Initiatives at Waitākere Hospital include:

- Roof water collection for non-drinking purposes, e.g. toilet flushing. This reduces dependence on the mains water supply and the associated carbon footprint.
- Segregations of waste streams to maximise diversion from landfill. This includes repurposing or upcycling equipment and furniture, composting of food waste and recycling a range of materials arising from their operations.
- Collaboration between Waitematā DHB dieticians, Sustainability Champions and staff in the cafeteria to promote Meat Free Monday. The message was “eating less meat reduces your carbon footprint and is good for your health.”

Waitematā DHB is also proudly Toitū Envirocare (formally Enviro-Mark Gold) Certified.

Find out more at www.waitematadhb.govt.nz/about-us/sustainability/

9.5 Ngā hapori me te tahatai – Community and coast

He waka eke noa

We are all in this together

Residents of the Henderson-Massey Local Board area see a lack of knowledge and awareness of climate change as a key climate change challenge[26].

Our formal education sector and community groups play an important role in enabling climate awareness and action with rangatahi/youth and the wider community. This includes annual events such as EcoFest West which promotes sustainable low carbon lifestyles.

It is important that we continue to learn together and have conversations about climate change.

Auckland is already experiencing the impacts of climate change. It will affect everyone differently and our ability to adapt depends on local impacts, including health, individual circumstances and our ability to plan and prepare as a community.

Auckland Council has identified coastal and major waterway sites within the Henderson-Massey Local Board area that are vulnerable to coastal inundation (flooding). Sea level rise (SLR) resulting from climate change increases the risk of coastal inundation. You can see a coastal inundation map on the Auckland Hazard Viewer[27]. Sea level rise of up to 1 to 2 metres[28] is predicted over the next 100 years based on the projections by the Intergovernmental Panel on Climate Change fifth assessment report. The council is developing Coastal Compartment Management Plans (coastal management plans) to address these impacts within the coastal marine area.

In 2019, the council's Research and Evaluation Unit (RIMU) assessed our vulnerability to climate change. This examined the degree to which our communities are susceptible to, and able to cope with the negative impacts of climate change. The assessment identified Royal Heights and Starling Park Census Area Units (CAUS) as vulnerability hotspots in Henderson-Massey, as well as very high climate impact scores in the western portion of the board area (See Fig 8). These findings highlight the importance of working with these communities to build greater climate resilience.

[26] Colmar Brunton (2019) Climate Change Action and Public Perceptions
[27] https://www.arcgis.com/apps/MapSeries/index.html?appid=81aa3de13b114be9b529018ee3c649c8
[28] One-metre sea-level rise is representative of the upper bound scenario to 2115. Two-metre sea-level rise is representative of potential, longer term sea-level rise (2120 to approximately 2200).

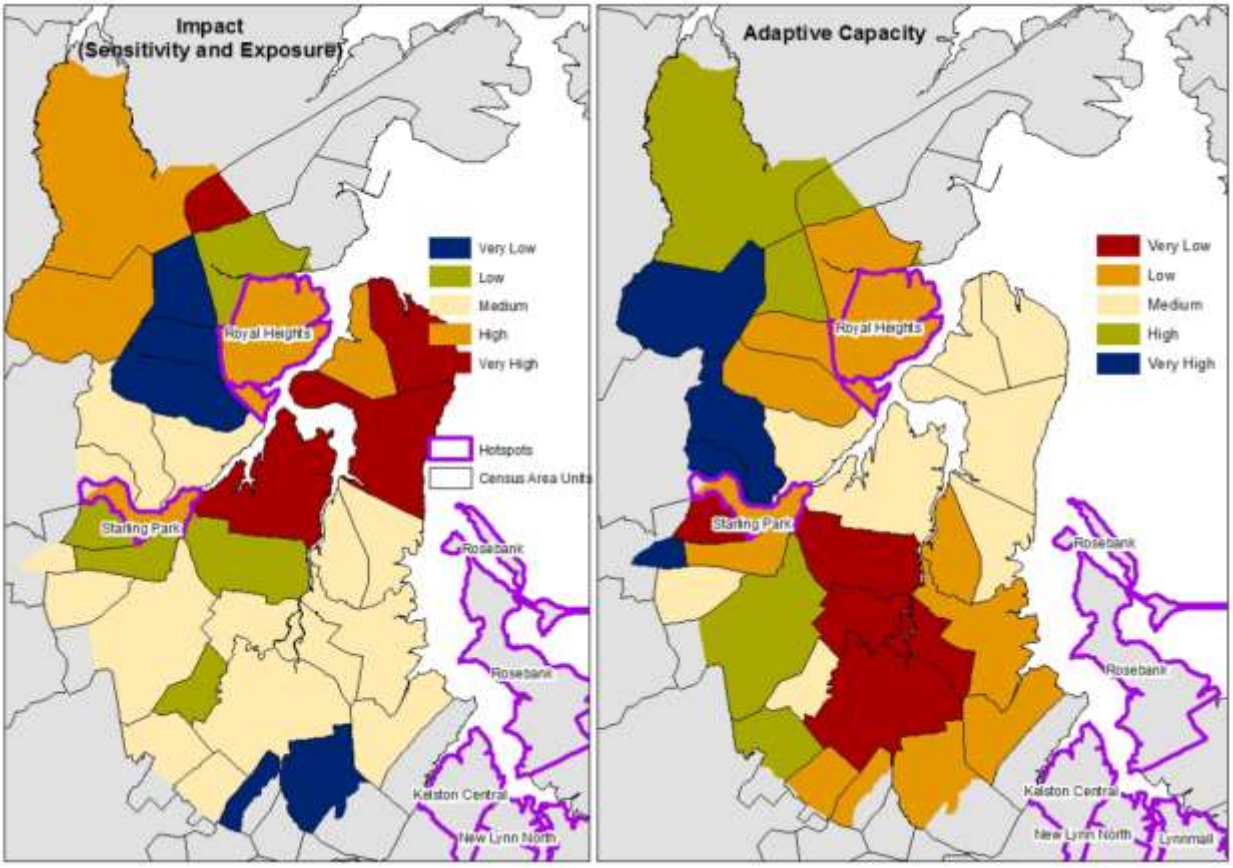


Figure 8: Vulnerability assessment hotspots in Henderson-Massey

Many of our Pacific Islands neighbours face losing everything to sea level rise. With 20.9 per cent of people from Henderson-Massey identifying as Pacific Peoples[29], this will have a direct impact on the families of many of our residents. This traditional Niuean chant talks about the stormbirds coming and how the storm will miss Niue.

Tutu ka, tutu ka, manu folau, Ka helehele tipa e
Koli fakalifa e manu folau, Ka helehele tipa e
Tipa, tipa aio e ka tiale
Koli fakalifa e manu folau, ka helehele tipa e![30]

We can prepare for change and adapt for change together. If we plan now with communities across Henderson-Massey, as well as recognising the impact across Te Moana-nui-a-Kiwa (Peoples of the Pacific) and our tangata pasifika whanau, to adjust to the actual and expected impacts of climate change and its effects, we can reduce harm and maximise our opportunities. We can also support communities most vulnerable to the impacts of climate change.

[29] https://knowledgeauckland.org.nz/media/1188/henderson-massey-lb-2018-census-info-sheet.pdf
[30] https://www.leadershipnz.co.nz/blog/latest-news/2020/6/17/storm-birds?fbclid=IwAR17SvkgjpKr8uwUcb9vg3cwIRoelqJEb5PrX0cDUSViBm9SHdroxrmHwoE

Current activities, actions, programmes and plans

- Community Resilience Plan – Auckland Emergency Management
- Auckland Hazard Viewer
- Henderson-Massey Climate Action Advisory Group
- EcoFest West
- Live Lightly
- FutureFit
- Sustainable Schools
- Enviroschools and Te Aho Tū Roa

Figure 9: Artist talks on climate change at EcoFest West

Goals

- Increase our communities' understanding of climate change
- Strengthen the resilience of our communities, people and places
- Solar battery systems in emergency community facilities by 2025
- Reduce the risk of flooding and hazards to properties and infrastructure
- Understand the current and future effects of extreme weather events and climate change
- Work with affected communities to plan and agree on resilience mechanisms
- Reduce the number of homes and businesses across Henderson-Massey exposed to flood risk

Opportunities and benefits

These actions will have much broader positive effects including:

- ➔ Understanding current and future impacts of extreme weather events and climate change
- ➔ Creating resilience in communities and business
- ➔ Reducing negative social and financial effects of climate change
- ➔ Protection of culture, taonga and sacred sites that may be affected

Ngā hapori me te tahatai - Community and coast actions

Goal	Action	Timescale
⚑	Flagship projects – shaded blue – see summary page 12	
Climate knowledge	• Resource and support the Henderson-Massey Climate Action Advisory Group (HMCAAG) to enable the successful implementation of this Action Plan	Ongoing
	• Resource and support a climate broker to help deliver this Action Plan	Years 1-3
	• Host an annual FutureFit Challenge with prizes for local schools, businesses and the community to help raise levels of climate knowledge and empower action	Annual
	• Maximise uptake of future regional climate action funds by local community groups and rangatahi activators	Once established
	• Work with key community partners and HMCAAG to develop a local board climate communications plan to promote key climate action plan messages, events and resources, and positive promotion of businesses taking climate action	Annual
	• Identify and implement opportunities to include climate actions in Matariki celebrations, EcoFest West and other events	Annual
	• Grow the capacity of school staff, students and teachers to reduce emissions, increase resilience and enable future leaders	Years 1-5
	• Create new ways for the community to learn, engage with and solve the issue of climate change	Ongoing
Community resilience	• Identify strategic community emergency facilities[31] for installation of solar battery systems and charging facilities (phone and vehicle)	Year 1
	• Install solar battery systems and charging facilities in strategic community emergency facilities	Years 2-5
	• Inform all owners of property potentially affected by climate change hazards as part of a long-term management approach	Years 1-3
	• Establish a prioritised programme of support for communities and individuals most affected by climate change, particularly those within identified climate vulnerability hotspots and those impacted by the changing coastline. Work with mana whenua and communities to discuss options, build resilience and prepare for the future	Years 1-5
	• Complete a Coastal Compartmental Management Plan for Henderson-Massey which includes coastal erosion studies, coastal hazard vulnerability assessments and responses	Years 1-5

[31] During the COVID-19 pandemic, food sharing and other support was activated in many of our community facilities. This initiative will identify churches, marae, halls and council-owned facilities which provide hubs of resilience to the Henderson-Massey community in times of emergency.

Goal	Action	Timescale
	• Establish a Climate Related Migration Programme that will serve as a pilot for the whole of the Auckland Region	Years 1-3
	• Ensure that all development adequately identifies and plans for the impacts of climate change	Ongoing
Risks and hazards	• Identify those most at risk from extreme weather events and develop mitigating actions	Ongoing
	• Assist marginalised and vulnerable groups to become more resilient (this may include the development of a Social Vulnerability Index)	Years 1-5
	• Deliver educational engagement programmes with target communities	Years 1-5
Having your Say	• Work with iwi and hapū to understand their climate change concerns, aspirations and priorities	Years 1-5
	• Work with local Pasifika, Chinese, migrant and disabled communities to understand their climate change concerns, aspirations and priorities	Years 1-5
Protect taonga	• 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 will be exposed to inundation and flooding and work to ensure the protection or relocation of these sites	Years 1-3

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

- ☐ Attend EcoFest West events to learn more about sustainable living
- ☐ Visit livelightly.nz
- ☐ Measure your carbon footprint at futurefit.nz
- ☐ Check the local hazards viewer
- ☐ Create a household emergency plan

9.6 Ngā kai – Food

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

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

With Auckland's food system currently accounting for 18 per cent of emissions, community groups within Henderson-Massey are helping reconnect people of all ages with where our food comes from and how it grows. They also support the growth and consumption of local, seasonal food and plant-based meals, and preventing food waste.

Our kai / food is central to life, the health of our taiao / environment, our bodies, our cultural traditions and our resilience. Water / wai is central to the growing of food and it's essential our residents can capture and store sufficient water for use in vegetable gardens in times of drought to increase their resilience.

By creating a more sustainable and regenerative food system, we can reduce the emissions we create through food production, distribution, processing and disposal.

New Zealanders throw away 122,547 tonnes of food a year[32]. The average family throws away three supermarket trolleys of food every year. This waste contributes to climate change with methane emissions from rotting food. Cooking skills, meal planning and composting all help. We can create a food system that reflects who we are as a community, revive Māori food practices and build food sovereignty.

Figure 10: Buy local seasonal fruit and vegetables at Te Puna Market

[32] https://lovefoodhatewaste.co.nz/food-waste/what-we-waste/

Current activities, programmes and gardens

- Kai West
- Te Puna Market
- Grow My Kai
- Waitakere Hospital: Woodford Gardens
- Community gardens at Epping Community Garden, Millbrook Edible Garden, Jadewynn Community Garden, Triangle Park Community Teaching Garden, Woodside Community Garden, Ranui Community Garden
- Cooking Club
- Love Food Hate Waste
- The Compost Collective

Goals

- A low carbon, resilient local food system that helps provide Henderson-Massey residents with access to affordable, fresh and healthy food
- Increase the ability of residents to enjoy locally produced seasonal food with a low carbon footprint – measured as km^2 of urban agriculture
- Ensuring access to sufficient water storage for food production in times of drought
- Reviving Māori food practices
- Tackling food poverty and improving access to healthy affordable food
- Reducing consumption of high carbon footprint foods
- 100 per cent Henderson-Massey's food waste composted by 2030 including:
    - composting facilities or services at all community facilities, local food markets and schools by 2023.
    - food waste collections for all homes within Henderson-Massey by 2023
    - business food waste collections and composting

Opportunities and benefits

These actions will have much broader positive effects including:

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

Ngā kai - Food actions

Goal	Action	Timescale
⚑	Flagship projects – shaded blue – see summary page 12	
Increasing food growing areas	• Map all areas available/potentially available for urban agriculture	Years 1-2
	• Investigate options for using the Te Rangi Hiroa Reserve nursery site, with a focus on community-led sustainability and food initiatives[33]	Years 1-3
Food strategy	• Enable the development and delivery of the Te Ao Māori Food Resilience Plan	Years 1-5
	• Support calls for the development and implementation of a national food strategy	Ongoing
	• Support development of a Kai Strategy for Henderson-Massey[34]	Years 2-5
	• Continue to support community-led low carbon food initiatives such as community gardens, markets, meal planning, cooking lessons, plant-based meal choices, composting, and community fridges[35]	Ongoing
	• Support a Zero Carbon Food Challenge as part of EcoFest West and/or Matariki celebrations	Annual
Food sovereignty	• Enable subsidies for rain water tank installation to allow sufficient water storage to ensure food production in times of drought	Ongoing
	• Provide support to encourage seed saving, sharing and propagation	Ongoing
	• Enable educational programmes focused on reviving ancient Māori food practices to help rangatahi and their whānau understand self-sovereignty, beginning with food sovereignty	Years 1-3
Eliminating food waste, and composting	• Continue supporting the sharing of surplus or waste food through the network of charities, community groups, and Pātaka Kai	Ongoing
	• Introduce kerbside food waste compost collection for all Henderson-Massey households	Ongoing
	• Pilot projects to establish communal business town centre compost collections and/or systems for Henderson and Te Atatū.	Years 1-3
	• Advocate for the introduction of composting and recycling facilities or services at all community facilities, local food markets (including the Henderson Night Market) and schools	Years 1-3
	• Continue targeted delivery of Compost Collective workshops to support composting across Henderson-Massey	Ongoing

[33] Henderson-Massey Local Board Plan 2020
[34] Could be included within a wider Kai West plan for the three west local board areas
[35] Henderson-Massey Local Board Plan 2020

What you can do

At work

- Choose organic, local, seasonal 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 food
- Join a community garden and 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
- Learn to compost at a free workshop

Case Study: Grow My Kai

Figure 11: Planting herbs and vegetables with EcoMatters

Grow My Kai is helping more Aucklanders get started to grow their own kai. EcoMatters developed the idea in response to the issues of local food security and resilience highlighted during the COVID-19 pandemic. Their community garden, nursery and composting experts have helped grow thousands of vegetable seedlings so that more Aucklanders can start growing their own simple, healthy kai. EcoMatters Environment Trust works with community partners, including VisionWest and Family Action, to get the seedlings to households they support.

www.ecomatters.org.nz/in-nature/grow-my-kai/

9.7 Te Puāwaitanga ō Te Tātai

Te puawaitanga 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 atua / primordial ancestors as a result of human behaviour which is out of balance with the world around us. Climate change is a threat to 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.

We have 20,319 Māori living in Henderson-Massey, making up 17.2 per cent of our population (compared to 11.5 per cent in Auckland).

We identified and included practical ways of enabling kaitiakitanga in this Action Plan. These include restoration of our natural environment and identifying and protecting sites of cultural heritage which may be affected by climate change. There is an opportunity to increase 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 we received, this section of the plan focuses on:

- elevating the importance of a Te Ao Māori approach to climate change and ensuring Māori participation in key decisions
- 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
- increasing the affordability and accessibility of public transport, especially near marae
- enabling circular economy outcomes by better understanding the whakapapa of our resources and products
- the creation of zero carbon self-powered 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

- ➔ Toitū Waitākere Report 2017
- ➔ Waitākere ki tua 2019
- ➔ Mana Whenua Kaitiaki Forum
- ➔ Te Ora ō Tāmaki Makarau

Goals

- Māori are flourishing
- Māori culture informs our climate actions and is accessible and visible in these
- 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
- The environment can support people for generations to come (intergenerational equity)

Opportunities and benefits

These actions will have much broader positive impacts:

- ➔ 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 kai moana is restored and replenished
- ➔ Lower power and water bills
- ➔ Lower operating costs for marae

Te Puāwaitanga ō Te Tātai Actions

Goal	Action	Timescale
⚐	Flagship projects – shaded blue – see summary page 12	
Rangatiratanga	• Māori representation on the Henderson-Massey Climate Action Advisory Group	Ongoing
	• Support the development of the regional co-design kaitiakitanga and stewardship framework and mana whenua climate office and think tank	Ongoing
	• Create and pilot Te reo *Te Tāruke-ā-Tāwhiri* programme for kura and immersion units[36]	Years 1-3
	• Identify and invest in rangatahi climate related representation and development opportunities	Years 1-3

[36] This may be Te Aho Tū Roa

Goal	Action	Timescale
Manaakitanga - zero carbon lifestyles	• Creation of a Te Ao Māori Food Resilience Plan	Years 1-3
	• Empower whānau to make zero carbon choices using a Mātauranga Māori approach in ways that work for all generations of whānau	Ongoing
	• Advocate for the creation of spaces which reflect Māori (atua Māori) and link to *Te Tāruke-ā-Tāwhiri*	Ongoing
Regulating for climate change	• Advocate for regulations to lift the burden of climate change responsibility from individuals	Ongoing
Transport	• Advocate for increasing the affordability and accessibility of public transport, especially near marae	Years 1-3
	• Advocate for increasing the affordability of e-vans and bigger electric vehicles	Years 1-3
Circularity	• Continue to fund the delivery of Compost Collective and Pare Kore training and resources for whānau	Ongoing
	• Encourage the use of tikanga to develop circular economy outcomes through better understanding of the whakapapa of our products and the importance of reciprocity – where what we take and use is returned or replenished in balance	Ongoing
Zero carbon homes	• Partner with the Western Initiative, businesses and community groups to create a zero carbon whānau street in Henderson-Massey with on-site renewable energy generation and storage	Ongoing
Net zero carbon marae	• Support the development of a low or net zero carbon Te Atatū Marae Coalition marae complex	Years 1-5
	• Partner with EECA to support improved energy and water efficiency and the creation of zero carbon marae (iwi, community and school-based) at: ○ Te Atatū Marae (still under development) ○ Te Piringatahi o te Maungaarongo Marae ○ Te Waipuna o te Mātauranga (Waitākere College) ○ Panuku Marae (Henderson High School) ○ Māhanahana Marae (Massey High School) ○ Kōtuku Marae (Rutherford College) ○ Te Kōtuku ki Rānui (TKKM o Te Kotuku)	Years 1-10
	• Support waste minimisation and traditional food production for marae	Ongoing
Zero carbon careers	• Support implementation of the Western Initiative Green New Deal which will drive investment into zero carbon development and employment for Māori within Henderson-Massey	Years 1-3
	• Māori businesses and social enterprises are actively supported through procurement practices and partnership with organisations like Amotai	Ongoing

What you can do

- Learn te reo, tikanga and Māori culture
- Learn about Tāwhiri Matea
- Learn about the maramataka calendar and its role in our wellbeing
- Check out the EcoMatters website for Te Ao Māori events e.g. Rongoa, weaving

Case Study: Te Atatū Marae complex development

Figure 12: Te Atatū Marae complex development

The Te Atatū Marae is not just a vision for the next generation but for the next 200 years.

The marae will be located within the Harbourview-Orangihina Park. It is designed to be sustainable with a low carbon footprint. Design solutions include:

- orientation – utilising a northern aspect for sunlight and heat through exposed thermal mass for winter heating and sun control
- overhang for summer to exclude direct sun and keep the interior cooler, and protect outdoor courtyards from the prevailing wind and rain
- most of the buildings use natural light for interior daytime use
- LED lighting to maximise energy efficiency

- natural ventilation and cross ventilation allowing the natural cooling and ventilation of the buildings
- renewable energy generation onsite will include solar PV panels and wind backup generators, and solar hot water systems.

One of the main drivers of the design was how to maintain an open landscape and yet have fully functioning marae buildings and infrastructure. The solution was to “run the landscape over the top” using a turf roof. This will maintain a low-profile western facade while expressing the northern and eastern facades and orientations. The turf roof approach will not apply to the wharenui or the wharetapere, but the rest will benefit from the highly insulated and stable environment it provides, as well as maintaining a feel of the natural landscape.

9.8 Te ngao me te ahumahi - Energy and industry

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

Working towards a clean energy system that supports and provides for a resilient, low carbon Henderson-Massey. Energy provides the electricity in our homes, fuel for our transport system and the heat that manufactures the products we need[37].

- 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).

This section of the plan focuses on identifying opportunities to increase the proportion of renewable energy used. The focus is on switching energy sources, e.g. from coal to biomass or natural gas to electricity, while we continue to improve energy efficiency and ensure a just transition for affected businesses and organisations. There is also an opportunity to increase the installation of distributed renewable energy generation.

Industry energy use

Local businesses include manufacturers who use process heat and refrigeration. Process heat is the steam, hot water or hot gases used in industrial processing, manufacturing and space heating. Process heat has been identified by the Energy Efficiency Conservation Authority (EECA) as New Zealand's second biggest opportunity after transport to reduce energy-related carbon emissions. Half of New Zealand's process heat demand comes from burning coal or natural gas. Businesses can reduce their energy costs and carbon footprint by running boilers and process heat systems efficiently or switching to innovative new heating technology.

Community and residential use

The council has already begun phasing out gas boilers and improving energy efficiency in its community facilities, including Henderson's West Wave Aquatic Centre.

While the transport sector remains heavily reliant on fossil fuels, there are many opportunities to support both the electrification of Henderson-Massey's vehicles and, in the future, to begin introducing hydrogen for suitable applications.

In recent years, the percentage of homes using natural gas as a method of space heating within Henderson-Massey has grown. We can support the community by supporting the

[37] Auckland Council. (2020). *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan*

installation of lower carbon space and water heating energy options like heat pumps and overcoming energy poverty.

Current activities, actions, programmes and plans

- ➔ 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

Goals

- Using 100 per cent renewable energy by 2035[38]
- Developing decentralised renewable energy
- Reducing natural gas, coal and liquid petroleum gas (LPG) use and emissions
- Reducing non-renewable process heat and industrial process heat emissions
- Reducing refrigerant related emissions
- Accelerating the transition to electric vehicles
- Ensuring a just transition for local businesses

Opportunities and benefits

These actions will have much broader positive effects including:

- ➔ Growing a reputation as a leading sustainable community or eco-city
- ➔ Attracting investment into sustainable infrastructure
- ➔ Improving indoor air quality as unflued gas heating is removed
- ➔ Reducing energy costs for local businesses and residents
- ➔ Increasing energy security through local low carbon energy generation

[38] The previous Labour Green Confidence and Supply Agreement targets 100 per cent renewable energy by 2035 in a normal hydrological year

Te ngao me te ahumahi - Energy and industry actions

Goal	Action	Timescale
⚑	Flagship projects – shaded blue – see summary page 12	
100% renewable energy	• Advocate to central government for the acceleration of renewable energy as a percentage of grid supply	Years 1-3
	• Identify any local opportunities to enable the use of alternative fuels such as hydrogen	Ongoing
Develop decentralised renewable energy	• Identify opportunities to pioneer innovative approaches to renewables, such as net-zero energy precincts, solar schools, marae, carparks, and working with partners to combine solar PV with domestic, community and commercial energy generation and storage facilities	Years 1-3
	• Partner with the Western Initiative, businesses and community groups to create a Zero Carbon Whānau Street in Henderson-Massey with on-site renewable energy generation and storage	Years 1-3
	• Support the development of a low or net zero carbon Te Atatū Marae Coalition marae complex	Years 1-5
	• Support the uptake of solar PV and wind generation and storage solutions	Ongoing
Reduction in natural gas emissions	• Deliver programmes supporting the uptake of heat pump water and space heating	Ongoing
Reduction in process heat & industrial process emissions	• Work with Central Park Henderson Business Association, West Auckland Business Club, Te Atatū Peninsula Business Association, Business Improvement Districts, Auckland Unlimited and EECA to: ○ 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 generation	Years 1-5
Decarbonisation of community facilities	• Fund, support and enable the acceleration of council owned community facility boiler upgrades and energy efficiency initiatives	Years 1-3
	• Use Auckland Council and council-controlled organisations' (CCO) properties to install and showcase innovative energy generation solutions	Years 1-5
Reduction in refrigerant emissions	• 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
Fleet electrification	• Encourage local businesses and community organisations to use the Low Emissions Vehicle Contestable Fund	Years 1-3
	• Accelerate the electrification of Auckland Council and CCO fleets, and all public transport	Years 1-5
	• Ensure all new buses used in Henderson-Massey are electric from 2025 (with the whole fleet fully electric by 2040)[39]	Years 1-5

[39] Low Emission Bus Roadmap - Auckland Transport

Goal	Action	Timescale
A Just Transition	• Support the local business community by working with Central Park Henderson Business Association, West Auckland Business Club, Te Atatū Peninsula Business Association, the Business Improvement Districts (BIDs), Auckland Unlimited and EECA to: ○ identify any local businesses or sectors that may be adversely affected by climate policy and the transition away from coal, natural gas and other fossil fuels ○ support the creation of procurement and employment opportunities to transition those impacted into alternative opportunities	Years 1-5

Case Study: Te Manawa Westgate Library

Figure 13: Te Manawa Westgate Library

The Westgate Library and multi-purpose facility is the anchoring civic component of the new Westgate town centre development.

The building was conceived as a sustainable exemplar, with a core focus on implementing sustainable techniques which are visible and easily understood – extending its focus on education as part of its function as a library. The building combines passive low energy design, including external shading devices and overhangs to naturally shade the facades and a highly insulated planted green roof, alongside active measures including photovoltaic panels configured as a shaded reading terrace, low energy displacement ventilation, and low water use fixtures.

https://warrenandmahoney.com/portfolio/westgatetowncentre

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
- 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 or has a five-star fuel efficiency rating

10 Monitoring framework

We will monitor progress against these targets and actions annually by using the climate monitoring framework below to measure uptake and impact.

Theme	Targets	Monitoring method	Baseline	Frequency
Natural environment	Canopy cover 30% by 2050	LiDAR survey – parks	15% (2016/18)	Once every three years
	Street canopy cover of 30% by 2050	LiDAR survey – parks	7% (2016/18)	Once every three years
	Number of notable trees	Unitary Plan	Establish baseline	Annual
	Protected area ha[40]	Protected Areas Network database[41]	Establish baseline	As required
Built environment	Number of zero carbon buildings/ precincts completed	Sustainable building certifications	0	On completion
	50% reduction in community facilities carbon emissions pa by 2030	Carbon monitoring – community facilities		Annual
Economy	≥9,000 local businesses have measured their carbon footprints and set reduction targets by 2030	Toitu Ekos	2[42]	Annual
	% contracts engaged in by local board with businesses that have climate goals	Ariba	Establish baseline	Annual
Transport	% of schools and businesses participating in Travelwise	Auckland Transport	Establish baseline	Annual
	Additional metres of cycleway	Auckland Transport	0	Annual

[40] Crown Conservation Estate, Regional Parks, and covenanted areas, e.g. QEII National Trust and Nga Whenua Rahui
[41] https://www.landcareresearch.co.nz/resources/maps-satellites/pannz
[42] Waitemata District Health Board and Bush and Beach have Toitu carbonreduce and Carbon Zero certification

Theme	Targets	Monitoring Method	Baseline	Frequency
Community and coast	Average carbon footprint for Henderson-Massey residents of 2.5 tonnes per person by 2030	Auckland Council	6.3 tonnes	Annual
	% of Henderson-Massey 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
	Number of households and organisations with climate resilience plans	Regional survey data	To be established	TBC
Food	km^2 of urban agriculture	Kai West	Establish baseline	Ongoing
	100% of community facilities, local food markets and schools composting food waste	Community facilities Local Food Markets Schools	Establish baseline	Annual
Te Puāwaitanga ō Te Tātai	Number of zero carbon marae	Marae and sustainable school contacts	0	As required
	Zero carbon whanau streets	Climate Broker	0	As required
Energy	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

11 Definitions

Definitions of some common climate terms	
Active transport	Relates to physical activity undertaken as a means of transport and not purely as a form of recreation, e.g. commuting to work by bike or walking to school.
Adaptation	Actions taken to help communities and ecosystems cope with changing climate conditions.
Carbon sequestration	A natural or artificial process by which carbon dioxide is removed from the atmosphere by the activities of people, organisations and communities e.g. tree planting, regenerative farming.
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.
Low traffic neighbourhood	A low-traffic neighbourhood is a group of residential streets where through-traffic is discouraged. Instead, buses, trucks, and other vehicles driven by non-residents travelling through the neighbourhood stick to identified main roads which border the low-traffic area. People who live inside the low-traffic neighbourhood can drive directly to and from their homes, arrange deliveries, and be accessed by emergency services, but non-residential traffic is discouraged[43].
Mitigation	A reduction in greenhouse gas emissions which reduces the severity of climate change.
Net zero	Where the amount of greenhouse gases emitted into the atmosphere equals the amount sequestered or offset (e.g. by forestry).

[43] The Helen Clark Foundation (2020) The Shared Path: People Not Cars at the Heart of Communities

Definitions of some common climate terms	
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.
Universal design	The process of creating buildings and products accessible to people with a wide range of abilities, disabilities, and other characteristics. For example, hallways and doors in homes wide enough for wheelchair access.
Vulnerable communities	Communities at higher risk for poor health because they face barriers to social, economic, political and environmental resources, as well as limitations due to illness or disability. Children, pregnant women, elderly, malnourished people, and those 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[44].

12 References

Auckland Council. (2020). *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan*

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

[44] https://www.who.int/environmental_health_emergencies/vulnerable_groups/en/

13 Images

Appendices

Appendix 1: Climate action stocktake Henderson-Massey

Appendices to this report can be found online on the Henderson-Massey Local Board Website at www.aucklandcouncil.govt.nz/hendersonmassey under 'Henderson-Massey plans, agreement and reports'.

Appendix 2: Contributors to this Action Plan

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

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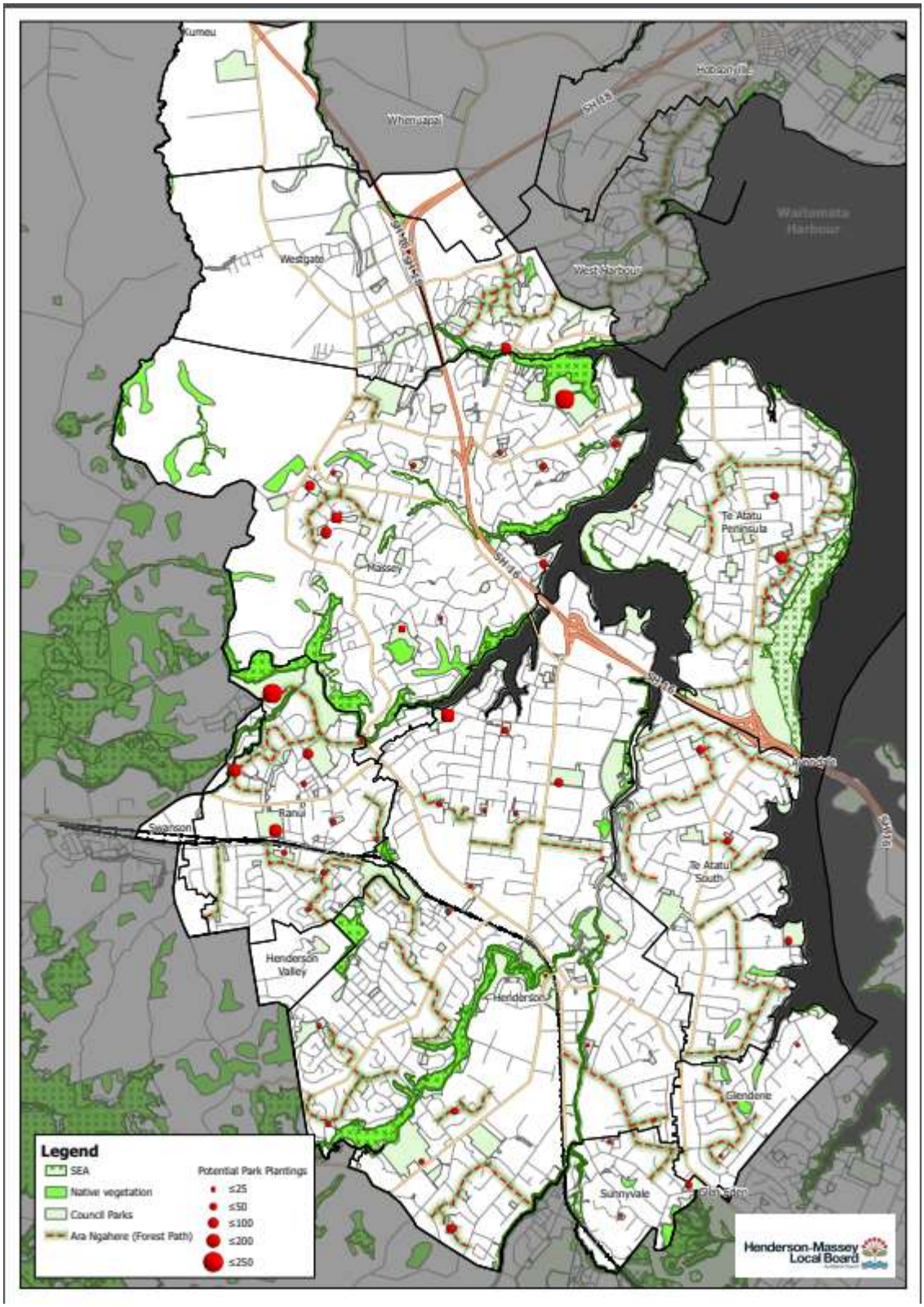
Tania Pouwhare, Western Initiative

Tessa Meyer, Panuku Development Auckland

Appendix 3: Potential park plantings



Appendix 4: Henderson-Massey Connections Plan

Find out more: **phone 09 3010101**
or visit **aucklandcouncil.govt.nz/**

Henderson-Massey Local Board
Auckland Council