

Tihe Mauri Ora Ka hua au ki a Tānenuiarangi Nāna i whakahora ko Aronui, Ko Tuauri, ko Tuatea I hāngai iho ki runga o Papatūānuku Kia puta te mata hihiko Ki te Whai Ao ki te Ao Mārama Tihe Mauri Ora

Ka maumahara ki a koutou te Kāhui wairua Kua wehe atu nei i mua i ā tātou I raro i o tātou maunga whakahī I roto i o tātou whare tangihanga

Nā reira, moe mai koutou, moe mai koutou Moe mai koutou

Ngā mihi nui rā ki tēnei mahi hei rapu he ara tika mō tēnei kaupapa hirahira mō te Huringa Āhuarangi. I wānanga pūāwhiowhio i ēnei pōrearea ki te moana, ngā wahapū, ngā repo, te whenua, ngā koiora, ngā marae, ō tātou kāinga me ō tātou whānau.

Ka tika me whakakīa tā tātou kete hei arunga mō ngā wā kei te tu mai rā. Nō reira, kia kaha, kia maia mō ngā rā kei te heke mai nei

> "Te toka tū moana a Takaparore He ākina nā ngā tai."

Toitū te whenua. Toitū te tangata. Te toka tū moana a Takaparore I express the Breath of Life
I pay homage to Tane-of-the-Heavens
For he gave the Baskets of Knowledge,
Of Aronui, Tuauri, and Tuatea
Which he placed upon Mother Earth
As sustenance for mankind
In the World of light
I again express the Breath of Life

We remember those who have passed who have gone before us To their lofty mountain To their places of lament

Be at rest

We acknowledge all the work done on Climate Change, an important issue for our people of Maketu.

It is right that we fill our baskets with the knowledge that will assist us in the future for the betterment of all.

"There stands the sea-faring anchor stone Takaparore, a resilient barrier to the tides"

May the land and people be strong and as resilient as an anchor stone for the generations to come. Nā, Petera Tapsell

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KAUPAPA | ABOUT OUR PLAN

"Te toka tū moana a Takaparore he ākina nā ngā tai"

"There stands the sea-faring anchor stone Takaparore; a resilient barrier to the tides"

When the Te Arawa waka landed in Maketu, its bow was anchored to a large stone anchor called Takaparore (also referred to as Tokaparore).

Although our waka has long since perished,

Takaparore remains in place.

We see ourselves as Takaparore, strong and steadfast against the tides of change and uncertainty (climate change).

He toka tū moana mō Maketu articulates our collective approach to climate change adaptation in Maketu.

We are navigators and discovers and innovators. We have a history of resilience and survival.

We have been navigating change for generations, exemplified by our journey from Hawaiki, and the near-fatal event when the Te Arawa waka became entrapped in Te Korokoro o Te Parata. In that instance we found the solution within the taiao.

We are now in a time of great change – a time in which we need to guide our people through a seismic change to ensure the survival of future generations.

As tāngata whenua, we have an obligation to care for everyone within our rohe. Therefore, we are choosing to lead the community response. Iwi values and aspirations form the whāriki for this plan.

A Te Ao Māori lens is essential to the planning for climate change adaptation. If its works for iwi, we know it will work for the whole community.

Nā Ngā Iwi Ō Maketu (Te Rūnanga o Ngāti Whakaue ki Maketū, Whakaue Marae Trustees and Ngāti Pikiao Environmental Society)





NGĀ TIKANGA | VALUES

We all have a role to play in responding to Climate Change.

The collective response to climate change in Maketu will be guided by the following values:

Rangatiratanga Self-determination:	The Maketu community will be resilient for Maketu.
Kotahitanga Collective action:	We work together to take action for Maketu.
Tikanga Practice:	We do things in the right way and for the right reasons.
Māramatanga Collective enlightenment	We value knowledge and truth about the challenges facing Maketu.
Manaakitanga Collective care:	We take care of each other, especially our most vulnerable.
Kaitiakitanga Safeguarding our future:	We actively care for our taiao (natural environment) and all it sustains.
Whānaungatanga Connectivity:	We recognise the many ways in which we are connected to each other and to the taiao.

HE ANGA WHAKAMUA | OUR ROAD MAP

Our collective vision

Our collective vision describes where we want to be, in terms of the future for ourselves, our children and our children's children; for iwi, whānau and community:

ME TOKA TŪ TONU TĀTOU

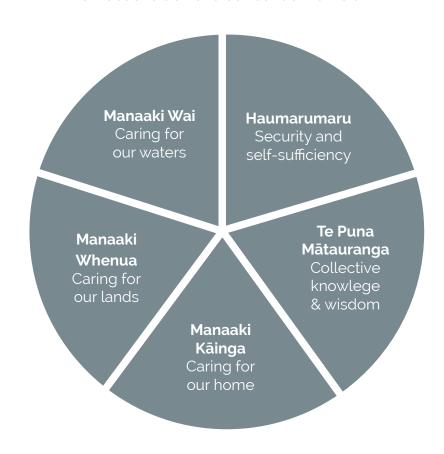
The Maketu community is prepared for, can adapt, and will be resilient to a changing climate

We will be resilient like Takaparore – strong and steadfast against the elements and tides of change and uncertainty.

Regardless of what happens as a result of a changing environment, we will remain standing.

Our Strategic Priorities

We have five interconnected strategic priorities or areas of focus to achieve our collective vision:



Further details about each strategic priority are provided overleaf.

PRIORITY 1 | HAUMARUMARU

Security and selfsufficiency

Haumarumaru relates to planning ahead to ensure the safety (including cultural safety) and wellbeing of our people. This includes being prepared for large scale natural emergencies (e.g., flooding, tsunami) and extreme weather events (e.g., storms, droughts), the latter of which is likely to be more frequent with a warming climate.

Costs of living are rising, in particular food, water and energy and a warming climate may exacerbate this. As a community, we need to look at ways to buffer price spikes in food, energy and availability of water to ensure the wellbeing of our people.

This strategic priority area covers topics including:

- Emergency response
- · Food, energy and water security
- Waste management
- Circular economy

OUTCOME FOR HAUMARUMARU

We are safe, can effectively respond to emergencies; and where possible, be more self-reliant (as a household and a community) in a changing climate

Our priority actions for community security and collective selfsufficiency are:

- Developing a **Community Emergency Response Plan**.
- Establishing household-scale maara kai, community gardens and/or market gardens.
- Assessing the freshwater needs and options for ongoing supply for Maketu.
- Explore opportunities for developing a Maketu Circular Economy project

Other actions include:

- Exploring opportunities to improve energy security within Maketu. This could include use of local resources (solar, bio-mass, micro-hydro, wind, wave, geothermal and passive heating i.e., better built and warmer/cooler homes).
- Look at ways to improve how waste is managed within Maketu, including minimisation and reuse.
- Assessing current and future requirements for freshwater including supply options (town supply, bores, roof water).
- · Developing a combined lwi freshwater plan.

PRIORITY 2 | TE PUNA MĀTAURANGA

Collective knowledge and wisdom

Te Puna Mātauranga relates to ensuring we, as a community, are well informed and have the resources to make good decisions about our future. We want to bring everyone along on this journey through education to raise awareness and understanding as well as build our collective capability and resilience.

The decisions we make now affect the future. We need to be flexible in our decision making by planning for different future scenarios that are rapidly evolving. We continue to utilise the latest climate research and continue to drive local research and monitoring.

This strategic priority area covers topics including:

- · Climate change awareness and understanding
- Research and monitoring
- Readily accessible information
- Shared learnings and experiences
- · Understanding how and where to be involved

OUTCOME FOR TE PUNA MĀTAURANGA

We are connected and working together to build our collective knowledge, resources and skill base relating to climate change

Our priority Te Puna Mātauranga actions are:

- Creating a Climate Change Information Hub, a repository to collate and share information relating to climate change.
- Developing a Maketu Climate Change education programme.

Other actions include:

- Identifying climate change research and monitoring needs.
- Coordinating and facilitating community gatherings to share learnings and experiences by way of workshops, wānanga, webinars and site visits.
- Contributing to a **community e-pānui or newsletter** to provide updates on the projects within this Plan.

PRIORITY 3 | MANAAKI KĀINGA

Caring for our home

Manaaki Kāinga relates to ensuring our homes and village infrastructure are safe. Our village infrastructure needs to be well planned, especially our low-lying land areas, and development based on Te Ao Māori perspectives.

Parts of Maketu, including Whakaue Marae and low-lying homes are prone to flooding and inundation. Coastal areas, especially Ōkurei Point and Maketu Spit are already at risk of erosion. A warming climate will exacerbate these impacts, both with frequency and severity of storms and sea level rise.

This strategic priority area covers topics including:

- Homes on low lying areas
- · Cultural infrastructure (marae, urupā, other wāhi tapu).
- Village infrastructure (stormwater, wastewater, water), access to broadband, roads, civil defence points, fire station).
- · Climate resilient homes

OUTCOME FOR MANAAKI KĀINGA

Our homes, cultural infrastructure and community infrastructure can cope with the impacts of a changing climate

The highest priority actions to achieve the above are:

- Geospatial mapping and planning to visualise current and future risks, vulnerabilities and opportunities for Maketu.
- Improving stormwater drainage to cope with more frequent storm events.
- Investigating the pathways and support towards potential relocation of homes and activities away from at-risk areas.

Other actions include:

- Understanding the risks of climate change on our stormwater, wastewater and roading network.
- Discuss long term aspirations and issues for Whakaue Marae.
- Prepare our homes for climate change.
- Remove lower road into Maketu to allow for natural waterflow into the wetlands.

PRIORITY 4 | MANAAKI WHENUA

Caring for our lands

Manaaki Whenua relates to our respect and care – kaitiakitanga – for land. We need to promote land use that is sustainable, incorporates ecosystem health, able to adapt to a changing climate and is based on an lwi/Māori world view.

We know that climate change will bring more frequent extreme weather events (storms, drought), fewer frost days and rising sea levels. Land use adaptation and diversification provides resilience and greater flexibility in uncertain environmental and economic times.

We also need to bring together and harness the collective power of the community in enhancing biodiversity. All are examples of tau utu utu – a state and action of reciprocity – to restore balance and enhance the health of the taiao (environment).

This strategic priority area covers topics including:

- Sustainable land use and biodiversity enhancement.
- · Land use change.
- Tree planting and wetland restoration.
- Sustainable food production.
- · Community economic development.

OUTCOME FOR MANAAKI WHENUA

We have land uses that adapt to a changing climate, reflect Maketu iwi / community aspirations for the taiao and provide better ecological habitats

The highest priority actions to achieve the above are:

- Establishing a tree / plant nursery in Maketu.
- Researching the risks and opportunities associated with productive land use in a changing climate. This could result in alternative products or crops and/or alternative land uses or ventures.

Other actions include:

- Expanding **tree planting and wetland** restoration efforts.
- Encouraging the retirement of non-productive farmland.
- Supporting a transition to land uses that:
 - are carbon neutral and/or nil environmental impact.
 (e.g., regenerative management practices); and/or
 - 2. include sustainable food and fibre production; and/ or
 - 3. integrate with wetlands / indigenous forest systems; enhance social and community wellbeing, through local food security and employment.

PRIORITY 5 | MANAAKI WAI

Caring for our waters

Manaaki Wai relates to our respect and care for water – kaitiakitanga. Our rivers, streams and estuaries are already experiencing poor health. This affects our ability to swim and gather kai.

Sea level rise, increased water temperature and flood / storm / erosion frequency will exacerbate these impacts. We may also see more freshwater and coastal pest plants and animals as a result of a changing climate.

This strategic priority area covers topics including:

- The health of estuaries (Te Awa Kari Ō Ngā-toro-irangi and Waihī)
- Coastal water quality and ecosystems
- Freshwater (rivers and streams) quality and ecosystems
- as it relates to climate change.

OUTCOME FOR MANAAKI WAI

We demonstrate kaitiakitanga for water and we understand the impacts of climate change on freshwater and coastal ecosystems

The highest priority actions to achieve the above are:

- Assessing the freshwater needs and options for ongoing supply for Maketu.
- Develop a combined lwi freshwater plan.
- Collating and/or carrying out research to understand the impacts of climate change on our waterways, coastal waters, estuaries, wetlands and related biodiversity and ecosystems.
- Actively restoring eco-systems in and around Maketu.

Other actions include:

 Carrying out monitoring of freshwater, coastal water, mahinga kai and kai moana using cultural indicators.

NGĀ AROTAKI MATUA | OUR PRIORITY PROJECTS

This section outlines where we will initially focus our collective efforts in terms of climate change adaptation.

The following projects are proposed to deliver action for one or more strategic priority areas:

- 1. Maketu community emergency response plan
- 2. Maketu-based food gardens and tree nursery
- 3. Maketu circular economy
- 4. Maketu infrastructure assessment
- 5. Maketu climate resilient homes
- 6. Maketu spatial mapping and planning
- 7. Managed retreat planning
- 8. Climate change research and monitoring (environmental and cultural focus)
- 9. Tree planting and wetland restoration
- 10. Maketu climate change education programme
- 11. Maketu climate change information hub
- 12. Maketu land use change project

Further details on these projects are provided overleaf.

. To Individual

Priority Project	Purpose	Examples of possible steps	Relevant strategic priority
Maketu community emergency response plan	To ensure the safety of the Maketu community during a civil defence emergency.	 Review existing community emergency procedures https://www.bopcivildefence.govt.nz/media/1328/4551-embop-community-emergency-procedures-maketu-little-waihi-final.pdf Identify gaps in information or procedures. Develop or update plan, with the Maketu community. Link with Marae Preparedness Planning. Link with community education. 	Haumarumaru Te Puna Mātauranga
2. Maketu-based food gardens and tree nursery	To identify and pursue opportunities: • for local food production within Maketu, at a household, community and/or commercial level. • to grow large volumes of native trees, coastal plants and wetland plants for community restoration projects.	 Initial feasibility study to identify potential site(s) and crops to be grown (community garden, market garden, tree nursery) and energy, freshwater, geothermal water / heat requirements. Confirm community demand/need for a community garden and/or market garden. For the market garden and nursery also look at the long-term financial sustainability and viability, and the potential employment opportunities. For the maara kai (household or community garden) link with education programmes (i.e., food growing, diet and nutrition) and community organisations that set up maara kai (e.g., Poutiri Trust). 	Haumarumaru Te Puna Mātauranga Manaaki Whenua Manaaki Wai
3. Maketu circular economy	To determine what a circular economy might look like within Maketu.	 Wānanga – a community hui to discuss the concept of a circular economy and the potential opportunities for Maketu Feasibility study to investigate the potential for a Maketu circular economy project, including: Renewal energy potential for Maketu. This could include use of local resources (e.g., solar, bio-mass, micro-hydro, wind, wave, geothermal and passive heating i.e., better built and warmer/cooler homes). Management of waste. Look at ways to improve how waste is managed within Maketu. This includes looking at approaches used elsewhere (e.g., Raglan Xtreme Zero Waste). Community-led business opportunities. Link with potential funders e.g., MWD Inc. that will support small business development for individuals and whānau. Link with education programmes. 	Haumarumaru Te Puna Mātauranga

Priority Project	Purpose	Examples of possible steps	Relevant strategic priority
4. Maketu infrastructure assessment	To assess the resilience of Maketu infrastructure (water, stormwater, wastewater and roading) and cultural infrastructure.	 Wānanga - community hui to inform community of this work and to provide opportunity for local knowledge to inform the assessments. Wānanga - hui-a-iwi to consider cultural infrastructure and best approach to undertake the assessment of climate change on that infrastructure, including a combined lwi freshwater plan. Carry out an assessment of freshwater supply options (e.g., rivers, streams, bores, roof). Identify freshwater needs (current and future, especially in relation to the Maketu-based food gardens and tree nursery. Identify water collection and storage options. Carry out research to understand the impacts of climate change (especially more frequent storm events and rising sea level rise) on our water, stormwater, wastewater and roading network. Improve stormwater drainage to cope with more frequent storm events. Identify opportunities for greater use of wetlands and water sensitive design for stormwater management. Update Council's Infrastructure Strategy. Link with education programmes. 	Haumarumaru Te Puna Mātauranga Manaaki Whenua Manaaki Wai
5. Maketu climate resilient homes	To ensure that the Maketu homes are resilient to the forecast weather extremes.	 Resume the Maketu Healthy Whare Project (insulating homes). Undertake a healthy home audit of existing homes to test for extreme weather resiliency (i.e., extreme rainfall, extreme heat) Develop a community project to ensure all Maketu homes have sufficient heating/cooling systems in place. 	Manaaki Kāinga
6. Maketu spatial mapping and planning	To visualise future risks, vulnerabilities and opportunities for Maketu.	 Pull together maps to show what Maketu may look like in 30-50 years' time, in relation to climate change. Discuss and identify steps to be taken to reduce risk to homes, people and areas of significance. 	Haumarumaru Te Puna Mātauranga
7. Managed retreat planning	To outline the steps associated with relocating homes and activities away from at-risk areas using tikanga Māori processes.	 Consider an approach to managed retreat (for homes, marae and other village infrastructure that may be at risk) that comes from a tikanga Māori process. This Plan depends on the outcome of Project 6 (Spatial mapping and planning project). 	Haumarumaru Te Puna Mātauranga

	Priority Project	Purpose	Examples of possible steps	Relevant strategic priority
8.	Maketu climate change research and monitoring (environmental and cultural focus)	To build awareness and understanding about the impacts of climate change on Maketu utilising a Te Ao Māori framework.	 Through wānanga, identify and collate climate change research and monitoring previously and currently carried out within or around Maketu. Develop a climate change research and monitoring plan for Maketu, including a community carbon footprint project. Commission and/or collate research and monitoring to understand the potential impacts of climate change, in particular: Impacts on mahinga kai and kaimoana. Impacts on water quality within rivers, streams, groundwater and estuaries. Impacts on sites and areas of cultural significance (e.g., marae, waahi tapu). Impacts on cultural knowledge and practices (e.g., changes to maramataka). Potential for changes in abundance and distribution of pest plants and animals (coastal, freshwater, terrestrial) in warmer climates or waters. Actively initiate and support projects that result in eco-system restoration in the estuaries and on the foreshore. Link with education programmes. 	Te Puna Mātauranga Manaaki Kāinga Manaaki Whenua Manaaki Wai
9.	Tree planting and wetland restoration	To expand tree planting and wetland restoration efforts in Maketu and surrounding areas.	 Identify potential sites for planting – gullies, coastal areas, wetlands, riparian strips. Hold community planting days. Work with community groups who are already working in this space. This includes, but is not limited to, Kotukutuku Gully Restoration, MOWS, Bay Conservation. Identify opportunities to: establish ecological corridors for terrestrial and freshwater fish and bird species. establish or enhance habitats for taonga fish and bird species. enhance habitats for mahinga kai (e.g., tuna, inanga, kōura, watercress) projects. Foster and strengthen links with education programmes and local schools. (e.g., Te Arawa ki Tai) 	Te Puna Mātauranga Manaaki Whenua Manaaki Wai

Priority Project	Purpose	Examples of possible steps	Relevant strategic priority
10. Maketu climate change education programme	To build collective knowledge and skills regarding climate change, guided by projects within this Plan.	 Develop a climate change education plan. This could include: Tamariki-specific education. Rangatahi-specific education, including pathways for continued learning, training or employment. Community-specific education. Resources required to support education and decision making (e.g., information sheets, webinars, videos, drone footage). Develop a schedule of continued workshops or wānanga. Identify potential experts to share their research, learnings and experiences with regards to climate change. Develop resources to support other projects within this Plan (e.g., maara kai and education focused on food growing, diet and nutrition, healthy homes). 	Haumarumaru Te Puna Mātauranga Manaaki Kāinga Manaaki Whenua Manaaki Wai
11. Maketu climate change information hub	To ensure that all information relating to projects within this Plan is stored in one place and accessible by all.	 Identify options for establishing a publicly accessible information repository. Undertake a community stocktake of groups and entities to assess current community capability and resources. 	
12. Maketu land use change project	To encourage the change of productive land use in Maketu by the Te Arawa Farms and other local landowners – iwi and private.	 Support local landowners (including TALT/TAML) to transition their farms to be sustainable food & fibre producers with a carbon neutral emissions status by adopting regenerative management practices and innovative land use change. Encourage the diversification of intensive dairy and the integration of alternative products that reduces biological emissions (along with contaminants to our estuaries) and the risk exposure to high volume commodity markets. Identify areas that can be made available to the Maketu community for mara kai and local food production enterprises. Partner with local landowners to restore wai repo kukuwai (wetlands) and native tree plantings. Partner with Te Arawa Lakes Trust and other strategic partners (e.g., BoPRC, WBDC, MfE) to develop a managed retreat plan to relocate our most vulnerable homes in the village that are at risk from rising sea levels and flooding; and to develop a re-afforestation plan for the village and the farms to buffer the community from increasing temperatures and storm events. 	Haumarumaru Manaaki Kāinga Manaaki Whenua

NGĀ RINGA RAUPĀ | OUR ENABLING ACTIONS

We want this Plan to be a living document and not sit on a shelf. For this reason, we include **Enabling Actions** - those things that must be carried out to ensure that plan implementation is effective, successful and long lasting.



BACKBONE SUPPORT

Backbone support, in the form of an lwi-led working group, is essential to look after the role of convening, facilitating, guiding and coordinating others to take action. This includes project management, monitoring and measuring; administrative support; relationship management; fund raising; and reporting.

Effective climate change adaptation requires dynamic action. The working group must also review progress, research outcomes and determine what changes are needed to the work programme (e.g., new projects, changes to existing projects). This Plan should be reviewed annually and updated at least every three years.

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PROJECT COORDINATION & REPORTING

This involves overseeing the priority projects; developing project plans and annual work plans; identifying and managing project risks as well as project progress reporting (including the option of report cards or dash boards).



REGULAR PLAN/ PROJECT COMMUNICATION

This involves regular plan / project communication, essential so that the Maketu community knows what is happening, what difference we're making and what is coming up.



COLLABORATION

Regularly invite all Maketu groups, entities and organisations to participate in a stocktake to assess community activities, strategic priorities and resources with the aim to developing collaborative relationships around the vision.



PROJECT FUNDING

This involves the work associated with applying for funding to carry out projects (including supporting other groups' applications for funding) and to sustain the working group. It also involves ensuring that contract milestones are met, and the obligations created by the funding agreements are fulfilled.



ADVOCACY & Influence

This is intended to ensure we influence decisions or projects at a district-level, regionally, nationally and internationally. This also includes raising the profile of the work that we are doing such as publishing papers, making submissions and speaking at conferences.



STRATEGIC RELATIONSHIPS

Establishing and/or maintaining strategic relationships will ensure the success of this plan. Key external stakeholders include:

- Local / central authorities and agencies (e.g. WBOPDC, BOPRC, DOC, MPI, MBIE, MHUD).
- · Maketu Community Board.
- Landowners including Te Arawa Lakes Trust.
- · Education providers.
- · Research agencies.
- Funders.



Photos by Andy Belcher