

Te Whakaoranga o Te Puhinui: Te Rautaki *Te Puhinui Regeneration Strategy*

Rev 1 | February 2022



Prepared for Eke Panuku Development and Te Waiohū by Resilio Studio et al

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Te Whakaoranga o Te Puhinui: Te Rautaki | Te Puhinui Regeneration Strategy

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LIMITATIONS

This report has been prepared exclusively for Eke Panuku Development Auckland on the basis of the brief received by Resilio Studio. Resilio Studio accepts no liability or responsibility whatsoever for the use or reliance upon this report by any unauthorised third party.

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This strategy has been created with assistance and input from multiple collaborators and partners. Please refer to pg 28 for a full list of contributors to this strategy. In particular we would like to recognise the support from the Programme Steering Group consisting of representatives from Te Waiohuria Iwi, Ootara Papatoetoe and Manurewa Local Boards, Kāinga Ora and Auckland Council's Healthy Waters, Eke Panuku, and Community Services teams.

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*NOTE: This document uses te reo Waiohuria conventions, notably the use of double vowels. (Refer to Te Reo Waiohuria strategy / Te Waiohuria Language strategy sub-initiative for more information about te reo Waiohuria).

Mihi

Papaki kau ana ngaa tai o Te Maanukanuka o Hoturoa,
Paakia ki uta, paakia ki tai,
Teretere haere ana ngaa wai maariri o te Puhinui,
Te awa koiora me te awa taauru whakapiki ora,
Hoki atu raa ki ngaa Matukurua, ko Matukutuureia raaua ko
Matukutuururu,
Ko ngaa tuupuna maunga tawhito, tuu te ao, tuu te poo,
Aro atu te manawa ki a Manukau taangata rau,
Araa, te pae haumako me te whenua makuru o Te Waiohua,
Huri taiahio ko ngaa uri taakerekere oo Huakaiwaka,
Ngaa raukura matahiapo aana,
Tukua mai kia piri, tukua mai kia tata,
Tukua mai ki Puhinui,
Kia whakaoratia toona tapu, toona mauri me toona mana,
Kia eke Panuku, kia eke Tangaroa,
Haumi-ee, Hui-ee, Taaiki ee!

*The tides of the Manukau Harbour blow gently,
Gently blowing on shore and blowing out shore,
The tranquil waters of Puhinui Stream flow,
And its life giving properties enhance our vitality,
Let me return to the ancestral mountains of Maatukutuureia
and Matukutuururu,
The ancient mountains that stand resilient day and night,
As we turn our hearts to Manukau the land of many people,
There inlies the fertile and rich lands of the Waiohua people,
The cleansing wind gathers the descendants of Huakaiwaka,
His treasured and precious feathers,
Let us come together, let us draw near,
Let us come closer to Puhinui,
So that we may restore its sacredness, its vitality and its
prestige,
As we invoke the seen and unseen energies to propel us
forward,
Let us be united, connected and together as one!*

He Mihi ki ngaa Kaimahi

Korihi te manu,
Taakiri mai te ata,
Ka ao, ka ao, ka awatea,
Tihei mauri ora!

Ko te Atua too taatou piringa, ka puta, ka ora.
Me whakahoonore too taatou Kiingi, a Tuuheitia Pootatau Te Wherowhero te Tuawhitu, me toona whare ariki - pai maarire.
Ki ngaa mate o te tau kua hinga atu, kua hinga mai, haere atu koutou ki te tini me te mano. Noo reira, haere koutou, whakangaro atu raa.

Ki a taatou, ki ngaa mahuetanga a raatou maa, teenaa koutou, teenaa koutou, teenaa taatou katoa.

Teenei te mihi atu ki a koutou, otiraa, ki ngaa taaiki ngaapara kua aarahi i teenei kaupapa kia tutuki - teenei ka mihi. Naa te whakapau kaha, naa te whakaaro kotahi, naa te takitini kee teenei rautaki i oti ai. Ka mutu, me mihi, ka tika, ki a koutou e para nei i te huarahi kei mua i te aroaro; teenaa koutou, teenaa koutou, teenaa koutou katoa.

Ko te pae tawhiti whaaia kia tata,
Ko te pae tata whakamaua kia tina!

A Tribute to the Staff

*The birds' chorus,
Heralds the morning,
The dawn breaks, promising us a new day,
And the breath of life!*

God is our shelter with whom we shall prosper and thrive.

We honour our King, Tuuheitia Pootatau Te Wherowhero VII, and his Royal house – let goodness and peace reign.

We pay homage to those who have passed away throughout the country. May you once again unite with the myriads and multitudes who departed before you. Therefore, we bid you farewell into the realm of the unseen.

To the living descendants of those now gone, greetings to you all.

This is a tribute to you;, to the people who have persevered in leading this project, and those who have contributed along the way – gratitude is in order. This strategy is a result of sheer hard work, a shared vision, and, indeed, many people. Much gratitude must be given to all whom have paved the road for the future – thank you all.

Pursue that which is beyond reach until it becomes a possibility,

Fasten onto that which is a possibility until it becomes a reality!

Contents

Executive summary	7	Te Puhinui regeneration charter	37
Mai i ngaa maunga ki te moana From the mountains to the sea	8	Maataapono + pou herenga Values + principles	38
Te Puhinui photo essay	9	Ngaa pae oranga Horizon of well-being	39
Te Puhinui regeneration charter	10	Pae whakaterere Shifting ground	40
Te ora o Te Puhinui The well-being of Te Puhinui	11	Ngaa pae oranga o Te Puhinui Horizons and shifting states back to well-being	41
Ngaa pae oranga o Te Puhinui Horizons and shifting states back to well-being	12		
Taiao <i>Nature</i>	14	3. Mahinga Areas of work	42
Tangata <i>People</i>	15	Overview of the strategic initiatives	43
Whenua <i>Place</i>	16	Taiao <i>Nature</i>	45
Programme of works plan Transform Manukau	17	Environmental foundations	46
Artist impression Aspirational outcomes for industrial zone of Transform Manukau area	18	Environmental constraints and challenges	50
		Environmental opportunities	51
1. Introduction	19	Te Wai o Te Puhinui Waters of Te Puhinui	52
Te Whakaoranga o Te Puhinui	20	Te Ngahere o Te Puhinui <i>Te Puhinui Forest</i>	60
Purpose of Te Puhinui Regeneration Strategy	21	Te Kaitiakitanga me Te Tiakitanga o Te Puhinui <i>Te Puhinui Guardianship and Stewardship</i>	68
Assumptions	22	Te Maaramatanga o Te Puhinui <i>Te Puhinui Innate Wisdom</i>	72
Who's involved	23	Te Puungao o Te Puhinui <i>Te Puhinui Energy Strategy</i>	75
Ngaa tohu o Taamaki Makaurau Bio-regional context	24	Case study #1	80
Manukau Harbour receiving environment	25	Case study #2	81
Puhinui Catchment and stream alignment	26	Case study #3	82
Project timeline Background	27	Tangata <i>People</i>	83
Te Whakaoranga o Te Puhinui: Te Rautaki <i>Document structure and logic</i>	31	Socio-cultural foundations	84
How to use the document	32	Socio-cultural constraints and challenges	86
		Socio-cultural opportunities	87
2. Kaupapa + tikanga	33	Te Mana Whakahaere o Te Puhinui <i>Te Puhinui Leadership and Decision Making</i>	88
Te puutake + te tirohanga <i>Purpose + vision</i>	34	Te Puhinui Identity	96
Ngaa kawa e wha Underpinning anchors	35	Te Puhinui Living Lab	100
Te ora o Te Puhinui The well-being of Te Puhinui	36	Te Puhinui Empowered Communities	104
		Te Whanaketanga Oohanga o Te Puhinui <i>Te Puhinui Economic Development</i>	108

Contents

Case study #4	114	Existing conditions	171
Case study #5	115	Constraints	172
Case study #6	116	Opportunities	173
Whenua <i>Place</i>	117	Photo essay Transform Manukau	174
Place foundations	118	Programme of works plan Transform Manukau	175
Place constraints and challenges	122	Raataa Vine / District Health Board	176
Place opportunities	123	Artist impression Aspirational outcomes for Raataa Vine	177
Ngaa Tohu o Te Puhinui <i>Symbols of Te Puhinui</i>	124	Wiri neighbourhood	178
Te Puhinui Food Sovereignty	129	Artist impression Aspirational outcomes for Wiri Reserve	179
Te Para Kore i Te Puhinui	133	Industrial	180
Te Puhinui Zero Waste Systems	133	Artist impression Aspirational outcomes for industrial zone of Transform Manukau area	181
Restructure Te Puhinui Built Environment	137		
Ngaa Ara o Te Puhinui <i>Te Puhinui Pathways</i>	144	Appendices	182
Case study #7	150	APPENDIX A - Strategic initiatives overview	183
Case study #8	151	APPENDIX B - Plants for regenerating Te Puhinui	184
Case study #9	152		
4. Grounding the strategies	153	Glossary	210
Aspirational outcomes for upper catchment	154		
Aspirational outcomes for mid catchment - Residential	156		
Aspirational outcomes for mid catchment - Industrial land use	158		
Aspirational outcomes for mid catchment - Town centre	160		
Aspirational outcomes for lower catchment	162		
5. Programme of works	164		
Programme of work Puhinui Stream corridor	165		
Programme of work Puhinui Stream corridor	166		
Programme of work Transform Manukau	168		

Executive summary

Te Whakaoranga o Te Puhinui is the wider project name for the intergenerational regeneration of Te Puhinui. It represents a unique opportunity to regenerate the well-being of the awa, the catchment and its people.

It is a collaborative partnership between mana whenua, the Auckland Council family, crown agencies, community organisations and the culturally rich, unique and diverse communities of Te Puhinui.

An aspiration for Puhinui's regeneration is for the catchment to play a specific and unique role in the ecological, social, cultural and economic regeneration of Te Maanuka / the Manukau Harbour, South Auckland, and the wider Auckland bio-region.

In 2017, Eke Panuku Development initiated the Transform Manukau Framework Plan, which identified five key moves for the urban transformation of Manukau. The first key move in the Transform Manukau Framework Plan is realising the potential of Puhinui Stream – enhancing the stream corridor and creating a source of community pride, activity, movement and interaction. Early engagement with mana whenua led to the reframing of the project into a whole of catchment initiative acknowledging the central role of water in the transformation of Manukau. Te Whakaoranga o Te Puhinui and the strategy supporting Te Puhinui regeneration – this document – has emerged from this process.

The purpose of this strategy is to realise Te Whakaoranga o Te Puhinui in a way that is inclusive, place sourced, culturally led and community fed so that Te Puhinui and its people can thrive once more. It aims to align and build on existing relationships and projects within the catchment and the Manukau Harbour by providing frameworks and methods that will help shift Te Puhinui from its current state towards realising its potential.

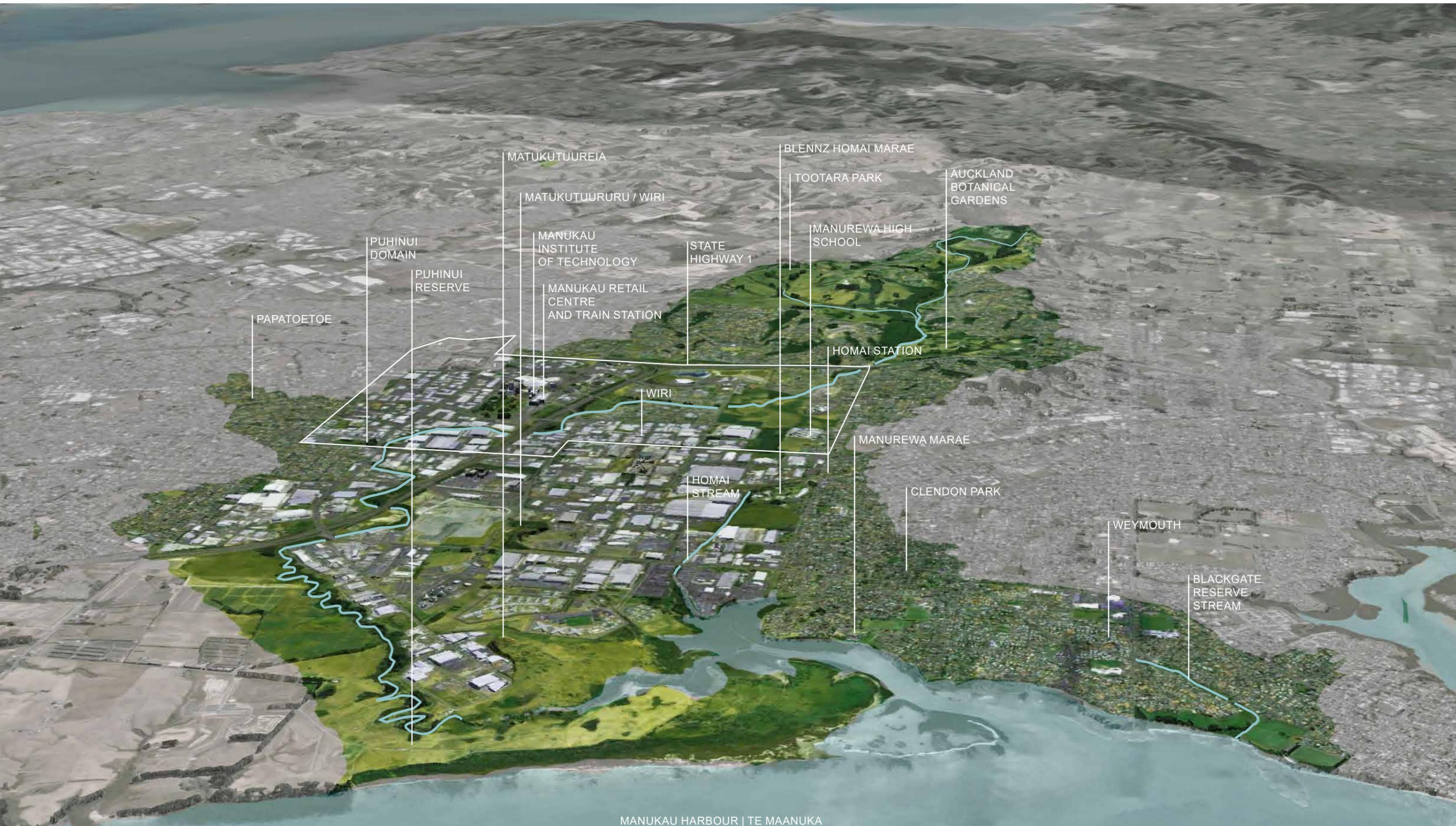
A wide range of project partners and collaborators have been involved in the development of the regeneration strategy including locals and identified key users and decision makers in the Puhinui Catchment area. Te Waiohū developed a kaupapa/ source document, which provides the foundations and articulates the purpose and vision for the regeneration of Te Puhinui. The strategy seeks to draw on existing knowledge about the catchment and the geological, ecological and cultural threads that underpin the whakapapa relationships of each Te Waiohū iwi, to deliver improved social, cultural, environmental and economic outcomes.

A comprehensive Stormwater Management Plan has been developed in close coordination with this strategy. The Stormwater Management Plan identifies the specific risks, issues and opportunities within the catchment in relation to stormwater, and is a critical part of understanding how to return health to Te Puhinui. If you are undertaking any works relating to stormwater

it is recommended that you review both documents in parallel.

The strategy document has been designed to be used by a range of users: decision makers, agencies, operators and practitioners working within the catchment area. It is intended to be a living document – this version is the first iteration. This strategy will be updated and refined to reflect ongoing learning over time. Each section in the strategy builds off the previous one and collectively these make up and contribute to the ongoing regeneration of Te Puhinui.

Mai i ngaa maunga ki te moana | *From the mountains to the sea*



PAPATOETOE

PUHINUI DOMAIN

PUHINUI RESERVE

MATUKUTUUREIA

MATUKUTUURURU / WIRI

MANUKAU INSTITUTE OF TECHNOLOGY

MANUKAU RETAIL CENTRE AND TRAIN STATION

STATE HIGHWAY 1

WIRI

HOMAI STREAM

BLENNZ HOMAI MARAE

TOOTARA PARK

MANUREWA HIGH SCHOOL

HOMAI STATION

MANUREWA MARAE

CLENDON PARK

Weymouth

BLACKGATE RESERVE STREAM

AUCKLAND BOTANICAL GARDENS

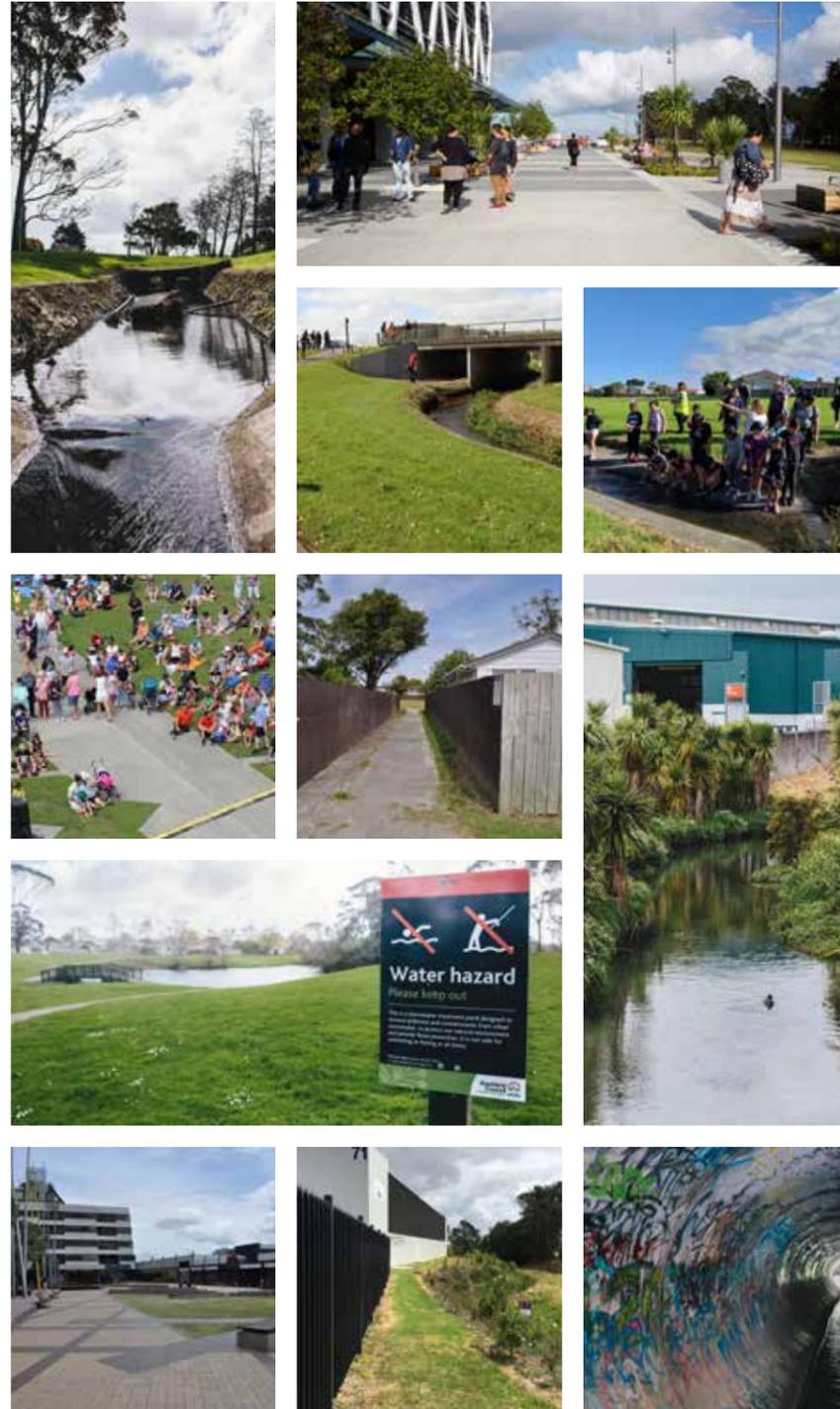
MANUKAU HARBOUR | TE MAANUKA

Te Puhinui photo essay

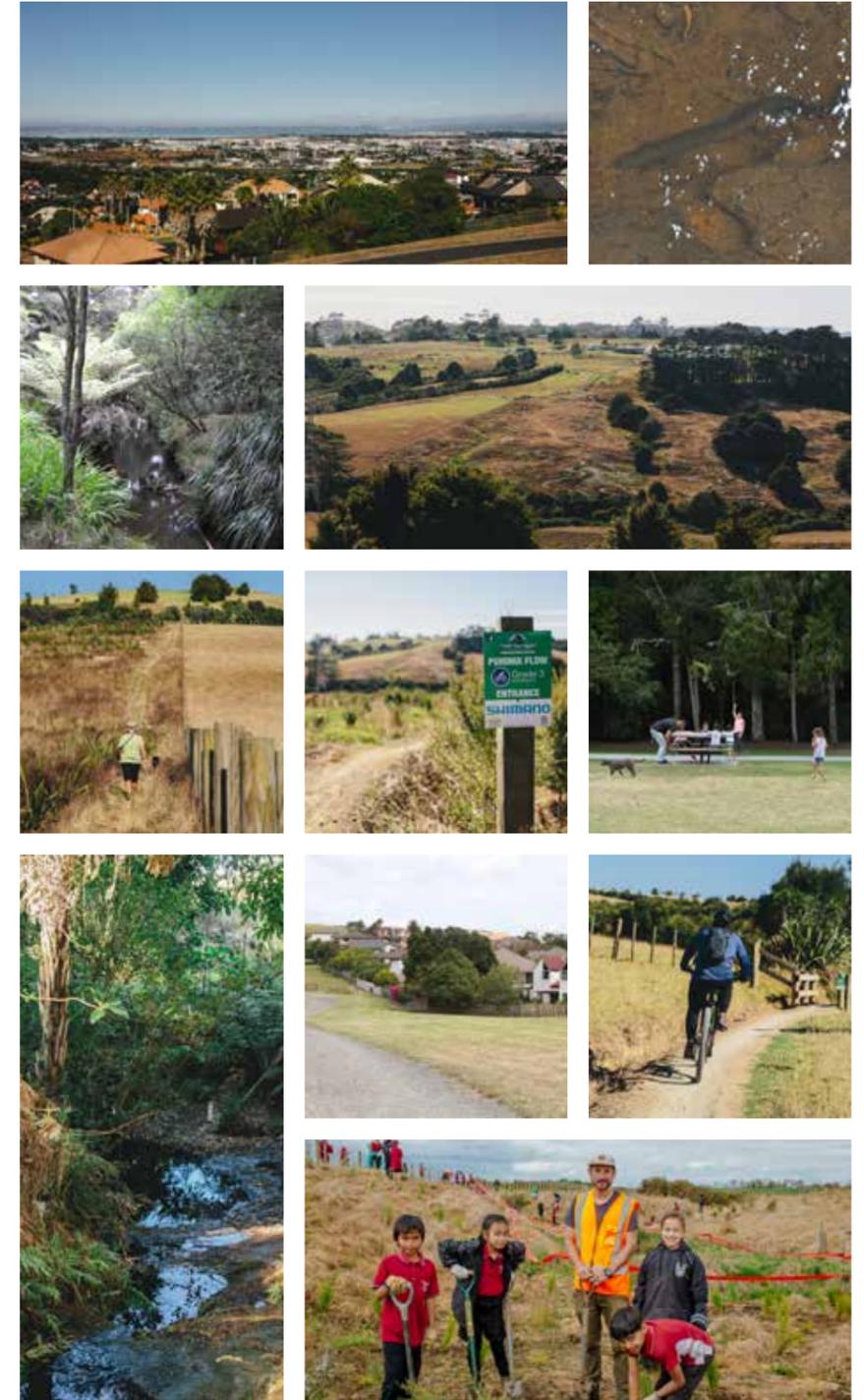
LOWER CATCHMENT



MIDDLE CATCHMENT



UPPER CATCHMENT

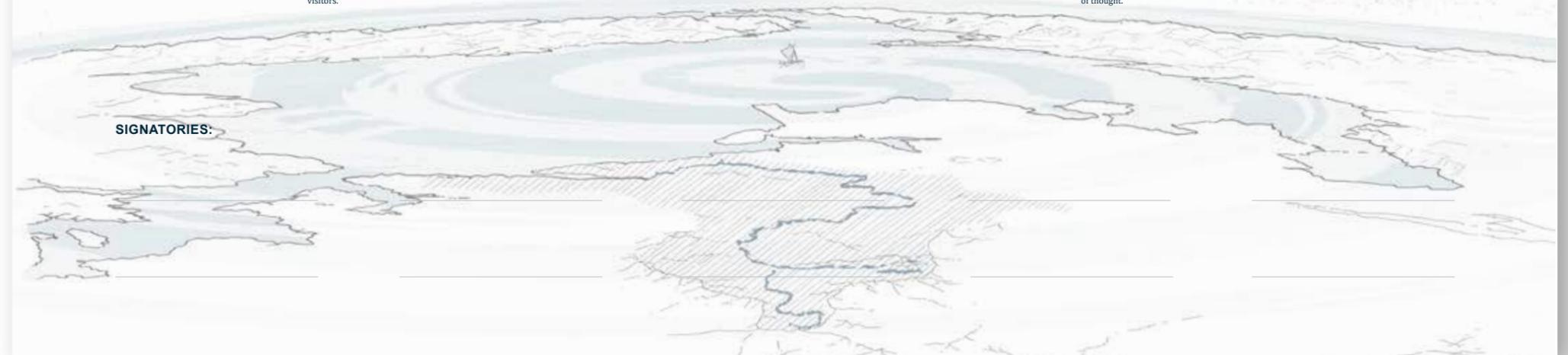


Te Puhinui regeneration charter

The charter for Te Puhinui encapsulates te puutake/purpose, te tirohanga/vision, maataapono/values, responsibilities and obligations underpinning the regeneration of Te Puhinui. It represents an agreement and acknowledgement of the collaboration and mutual respect of all signatories, including between Te Waiohuria iwi, mana whenua, local communities, the council and the Crown, towards the regeneration of Te Puhinui.

Te Whakaoranga o Te Puhinui Charter

Te Puhinui Regeneration Charter

<p>PUUTAKE/PURPOSE</p> <p>We seek to realise te whakaoranga o Te Puhinui in a way that acknowledges, through whakapapa, the interconnectivity of people, place and nature; so that through indigenous, place-based knowledge we learn how to inhabit and evolve our urban environments towards a flourishing future</p>		<p>TE TIROHANGA/VISION</p> <p>Te whakaoranga o Te Puhinui He waka eke noa Kia Eke Panuku, Kia Eke Tangaroa Haumi e Hui e Talki e</p> <p>Intergenerational wellbeing of Te Puhinui and its peoples Unity in a shared purpose With our collective effort, We will succeed</p>				
<p>NGAA AHO/THE THREADS : TAIAO, TANGATA, WHENUA/HEALTHY ENVIRONMENTS, EMPOWERED COMMUNITIES, RESILIENT AND INTEGRATED SYSTEMS</p>						
<p>Ko te mana rangatira he tapu, manaakitia te mauri tangata</p> <p><i>Human dignity is fundamental – nurture the human spirit</i></p> <p>RANGATIRATANGA</p> <p>WE BELIEVE: MAATAAPONO/VALUES</p> <p>Listening to the voices and according mana, authority and value to the people of Te Puhinui will enable mana whenua and whaanau/community resilience, leadership and oranga/wellbeing.</p> <p>WE COMMIT TO: POU HERENGA/ PRINCIPLES AND RESPONSIBILITIES</p> <p>Giving effect to and fulfilling the mutual Te Tiriti o Waitangi obligations and responsibilities through the partnership between Te Waiohuria iwi, the council and the Crown.</p> <p>An empowered communities approach throughout our projects – acknowledging the key role of both rangatira and rangatahi.</p> <p>Raising pride, sense of identity and connection to Te Puhinui to promote common value, understanding and spiritual connection.</p>	<p>Tuu mai e moko, he whakaata noo maatua, te moko o oo tuupuna</p> <p><i>Stand tall oh moko, the reflection of your parents, the blueprint of your ancestor</i></p> <p>KAITIAKITANGA</p> <p>Te Puhinui is a cherished tupuna/ancestor, teacher and guardian, of whom mana whenua are direct descendents. Mana whenua hold fundamental kaitiakitanga obligations and responsibilities on behalf of tuupuna and mokopuna.</p> <p>Te Waiohuria having a unique role as kaitiaki involving mutual responsibilities and obligations for customary care, protection and development of the nature, place and people of Te Puhinui.</p> <p>Recognising the mana and expressions of self-determination of each iwi of Waiohuria and ensuring that they will play a lead role in the whakaoranga/regeneration of Te Puhinui.</p> <p>Te Waiohuria holding manaakitanga obligations and responsibilities to the wider whaanau, community and manuwhiri/visitors.</p>	<p>Kia whakatoomuri te haere whakamua</p> <p><i>To walk into the future, we must be guided by the past</i></p> <p>MAATAURANGA</p> <p>Whakaoranga/regeneration is achieved through knowledge and understanding of the whakapapa connections between people, place and nature. This requires learning from the past to move into the future.</p> <p>Pursuing maatauranga – drawing from mana whenua and western knowledge systems and generating a new dual knowledge system.</p> <p>Recognising maaramatanga and mana whenua wisdom enabling intergenerational transfer of customary wisdom and understanding.</p> <p>Embedding resilience and adaptability in our planning and development, while acknowledging that this an evolving and dynamic space.</p>	<p>Ko te wai te ora o ngaa mea katoa</p> <p><i>Water is the life giver of all things</i></p> <p>MAANAAKITANGA</p> <p>Wai/water is the source of all life, and through maanaakitanga is the primary enabler of whakaoranga/regeneration, contributing to our collective and individual identities and prosperity.</p> <p>Starting with wai/water and taking a mai i ngaa maunga ki te moana/whole of catchment approach to regenerating Te Puhinui, extending out toward the whole living system of Te Maanuka / the Manukau Harbour.</p> <p>Supporting integral and intact awa and whenua ecosystems and not compromising intergenerational success for short-term gain.</p> <p>Protecting and enhancing the life supporting capacity of Auckland's waters – te mauri o te wai o Taamaki Makaurau.</p>	<p>Poipoia te kakano, kia puawai</p> <p><i>Nurture the seed and it will blossom</i></p> <p>TAURITETANGA</p> <p>Resilience, equity, and social and ecological justice is fostered through taurite/balance and harmony of nature, place and people.</p> <p>Reconnecting and seeking balance and resilience in our ecological, social, cultural and economic systems.</p> <p>Supporting a prosperous community, job creation and economic development through the whakaoranga/regeneration of Te Puhinui.</p> <p>Supporting appropriate and healthy growth, access and recreation, while acknowledging that people are part of the living system of Te Puhinui.</p>	<p>E kore au e ngaro, he kaakano i ruia mai i Rangiaatea</p> <p><i>I will never be lost, for I am a seed sown in Rangiaatea</i></p> <p>WHANAUNGATANGA</p> <p>Oranga/wellbeing of Te Puhinui requires strong, collaborative and reciprocal relationships between nature, place and people.</p> <p>Employing whakapapa-centred design to enable spiritual, physical and mental wellbeing between people, place and nature.</p> <p>Mahi tahi/working together to foster and strengthen relationships between Te Waiohuria iwi, communities, the council and the Crown and seeking to reduce disparities across the communities of Te Puhinui.</p> <p>Collaborating in design through mutual respect and adaptive decision-making processes that work across disciplines, skill sets and communities to ensure diversity of thought.</p>	<p>He pookekee Uenuku i tuu ai</p> <p><i>A rainbow stands out against the dark clouds</i></p> <p>TIAKITANGA</p> <p>We all have a mutual responsibility for the oranga/wellbeing of the nature, place and people of Te Puhinui through generosity, respect and care.</p> <p>Caring for the nature, place and people of Te Puhinui in order to regenerate the collective mauri/vitality of its ecosystems.</p> <p>Honour and cherish Te Puhinui in our actions and actively support communities role in tiakitanga/stewardship of Te Puhinui.</p> <p>Our approach is anchored deeply in this place – we will listen deeply and learn from Te Puhinui.</p>
<p>SIGNATORIES:</p> 						

Te ora o Te Puhinui | *The well-being of Te Puhinui*

Oranga/well-being is the core outcome sought by Te Whakaoranga o Te Puhinui/Te Puhinui Regeneration Strategy.

This strategy recognises that the well-being of Puhinui is multi-dimensional and involves the weaving of multiple interrelated threads together.

The three lashings weave together to generate and encompass oranga and Te Ora oo Whakapapa in the regeneration of Te Puhinui.

Te whai oranga | Threads of well-being

Ngaa aho are the three lashings that bind and weave te Rautaki o Te Whakaoranga o Te Puhinui/Te Puhinui Regeneration Strategy together. These three interrelated threads are:

- Taiao/nature – healthy environments
- Tangata/people – empowered communities
- Whenua/place – resilient and integrated systems.

Together ngaa aho constitute the core threads that underpin the health and well-being of Te Puhinui. These three threads have been used to frame the strategic initiatives in this strategy.



Ngaa pae oranga o Te Puhinui | *Horizons and shifting states back to well-being*



TE PAE RANGI | *BEYOND THE HORIZON*

Navigational Stars:
Tirohanga/vision
Puutake/purpose
Kaupapa/source document
Te Puhinui regeneration charter

TE PAE TAWHITO | *PAST STATES*

Pre-human occupation

Healthy, vibrant catchment.
Abundant estuary and shoreline.

First people

Ecologically, culturally and functionally integrated part of Te Maanuka.
Ngaa Matukuturua ‘twin’ maunga and surrounding areas are ideal for permanent settlement/paa.

Colonisation – dislocation, conversion of catchment to extraction and consumption paradigm.
Congregation/resettlement of displaced people.
Te Puhinui becomes dumping ground.
Urban form and land use fragment and disconnect.
Te Puhinui is forgotten and neglected.

Mauri Tuu
Mauri Ora
Health + Prosperity



Mauri Noho
Mauri Mate
Stagnation + Degradation

TE PAE WAATUU | *PRESENT STATE*

Crying for recognition and healing.
State of neglect/ill-being.
Diminished mauri-tapu-mana.
Te Puhinui is neglected, burdened, fragmented and disconnected. It is still a dumping ground.
Displaced/disconnected whaanau.
Stream is seriously degraded with sedimentation, flooding, stream health and water quality issues.
Partner agencies are kaupapa ready for regeneration.
Multiple entities and agencies in catchment are active and interested in Te Puhinui and its regeneration.
Emerging collaborative governance, planning and practice across treaty partners, entities, agencies and disciplines.
Multiple projects underway in the catchment to restore ora, but not always connected or coordinated.



TE PAE TATA | *NEAR HORIZON*

Te Puhinui pride of place is emerging and fosters bonds of connection and affection for Te Puhinui.
Te Waiohūa’s positive presence and manaaki in catchment is felt.
Agencies and organisations in catchment are visible and working in alignment with the regeneration strategy.
Te Puhinui regeneration Charter is activated and honoured.
Te Puhinui regeneration continues to attract and maintain investment, as well as conservation and restoration initiatives in alignment with the Regeneration Strategy.
Puhinui Catchment focused events, celebrations and hui are common.
Local maramatanga is embodied, influencing and directing regeneration and adaptive resilience of Te Puhinui.
Local economic development is making tangible improvements to local well-being. Local people are employed in local environmental and other regeneration initiatives, including rangatahi.
Mauri and mana of Puhinui Stream and estuary are increasing.
Conservation and restoration mentoring programmes and initiatives, including urban ngahere planting programmes and water quality testing using maatauranga Maaori, are running.
Measurable increases in water quality, biodiversity and presence of indicator species within catchment.
Reduction in illegal dumping.
Places within the catchment of cultural significance are valued and celebrated.
Greenways, shared paths and a network of streets for people connect communities and places across the catchment.
Water sensitive design is integrated into new developments and infrastructure renewals.

Te Whakaoranga o Te Puhinui
Te Puhinui regeneration



Mauri Tuu
Mauri Ora
Health + Prosperity

TE PAE TAWHITI | *DISTANT HORIZON*

Te Puhinui is celebrated and cherished.
Mana of stream is restored.
Te Puhinui is connected and functioning as healthy integrated living system, including ecological and human systems.
Te Puhinui is a source of healing and inspiration for others.
Te Puhinui and its communities experience fluid occupation and ongoing adaptive resilience.
Measurable environmental health indicators, including water quality and biodiversity within Te Puhinui and Te Maanuka, continues to increase.
Te Whakaoranga o Te Puhinui is considered an exemplary flagship project.
Vibrant local food (eco)system and economy continues to develop.
Strong catchment identity and pride of place amongst Puhinui communities with visible cultural identify.
Fish can migrate full length of stream.
Green corridors throughout the catchment connect maunga to moana.
Environmental stewardship and climate action are celebrated and shared cultural values.
Water sensitive design is business as usual in all developments throughout catchment.

Relationships between strategic initiatives

The initiatives described in the following pages aim to align, strengthen and build on existing relationships and projects within Te Puhinui and Te Maanuka. This is achieved by providing frameworks and methods, which brought together at the right time, in the right sequence and in the right relationship, will help move Te Puhinui from its current state to realising its full potential and ultimately achieving te ora o Te Puhinui - a healthy and prosperous Puhinui.

Each strategic initiative is connected to other initiatives in different ways. Understanding the nature of the relationships between different initiatives is important to ensure that challenges are addressed holistically and key opportunities are not missed. Some types of relationships to consider include:

Synergy – strategic initiatives complement and strengthen each other. For example te Wai o te Puhinui, Urban Ngahere and Living Lab.

Amplification and leverage – one initiative positively contributes to or increases the impact on another initiative. For example Te Puhinui Identity and Puhinui Living Lab amplify multiple other initiatives.

Keystone initiatives – in ecology, keystone species are those species that have an extremely high impact on the integrity and function of an ecosystem. The keystone initiatives that currently have an extremely high impact on the functioning and well-being of Te Puhinui ecosystem are Te Kaitiakitanga me Te Tiakitanga, Te Mana Whakahaere, and Restructuring Te Puhinui Built Environment.

Dependency – some strategic initiatives are dependent or contingent on other projects either to initiate or to be effective. For example Te Puungao o Te Puhinui / Te Puhinui Energy Strategy is largely dependent on Te Mana Whakahaere o Te Puhinui / Te Puhinui Governance as the scale of the energy initiative will require political will and financial investment to realise.

The diagram on this page maps the connections between strategic initiatives with the thickness of the line identifying the strength of the relation.



Strategic initiatives

-  **Taiao | Nature**
-  Te Wai o te Puhinui | Waters of Te Puhinui
-  Te Ngahere o Te Puhinui | Te Puhinui Forest
-  Te Kaitiakitanga me te Tiakitanga o Te Puhinui | Te Puhinui Stewardship
-  Te Maaramatanga o Te Puhinui | Te Puhinui Innate Wisdom
-  Te Puungao o Te Puhinui | Te Puhinui Energy strategy
-  **Tangata | People**
-  Te Mana Whakahaere o Te Puhinui | Te Puhinui Governance
-  Te Puhinui Identity
-  Te Puhinui Living Lab
-  Te Puhinui Empowered Communities
-  Te Whanaketanga Oohanga o Te Puhinui | Te Puhinui Economic Development
-  **Whenua | Place**
-  Ngaa Tohu o Te Puhinui | Symbols of Te Puhinui
-  Te Puhinui Food Sovereignty
-  Te Para Kore i Te Puhinui | Te Puhinui Zero Waste Systems
-  Restructuring Te Puhinui Built Environment
-  Ngaa Ara o Te Puhinui | Te Puhinui Pathways



Taiao/nature refers to the environmental and ecological foundations of Te Puhinui. It recognises the ability and capacity of nature to sustain and maintain whole living systems and regenerate its own mauri, while contributing to the mauri of people and land.



Te Wai o Te Puhinui
Waters of Te Puhinui

Create a whole-of-catchment integrated design and management approach to wai/water which regenerates the mauri/life force of Te Puhinui and accommodates and maintains the natural drainage patterns of the area, reduces run-off, improves water quality and supports and restores the hydrological function of the awa/stream and associated ecosystems, extending out toward the whole living system of Te Maanuka / Manukau Harbour.

SUB-INITIATIVES

- Catchment-wide Stream Restoration
- Daylight and Naturalise Overland Flow Paths
- Permeable Areas and Infiltration
- Reinstate Floodplains
- Strategic Infrastructure Renewal
- Blue Green Industry



Te Ngahere o Te Puhinui
Te Puhinui Forest

Develop a ngahere/forest made up of corridors and patches to provide a minimum of 30 per cent vegetation cover across Puhinui Catchment including wetlands, waterways and tall woody vegetation in streets, parks and open spaces to protect and maintain existing healthy ecosystems and restore historic environmental degradation.

SUB-INITIATIVES

- Healthy Stream Corridors
- Forest Patches
- Canopy Cover in Urban Areas
- Coastal Forest Enhancement
- Te Puhinui Nursery
- Pest-free Te Puhinui



Te Kaitiakitanga me te Tiakitanga o Te Puhinui
Te Puhinui Guardianship and Stewardship

Support the people of Te Puhinui to play an active role in the care, protection, restoration and regeneration of their environment, recognising the role of mana whenua as direct descendants and kaitiaki of Te Puhinui and ensuring intergenerational transfer of customary wisdom and understanding.

SUB-INITIATIVES

- Te Waiohua Kaitiakitanga
- Te Roopuu Tiaki i Te Puhinui | Friends of Puhinui
- Te Puhinui Business Responsibility Initiative



Te Maaramatanga o Te Puhinui
Te Puhinui Innate Wisdom

Acknowledge and work with the natural world and Te Puhinui as holders of place sourced knowledge and wisdom to reinvigorate, celebrate and affirm Te Puhinui as a living organism and actively apply this knowledge to its regeneration.

SUB-INITIATIVES

- Te Maramataka o Te Waiohua | Te Waiohua Lunar Cycles
- Te Reo Waiohua Strategy | Te Waiohua Language Strategy



Te Puungao o Te Puhinui
Te Puhinui Energy Strategy

Promote and support Te Puhinui energy transition from a non-renewable carbon intensive energy network towards a renewable energy network.

SUB-INITIATIVES

- Warm Healthy Homes
- Te Puhinui Energy Use and Efficiency Strategy
- Te Puhinui Energy Production and Storage
- Low-carbon Transport



Tangata/people refers to the cultural, socioeconomic and political foundations of Te Puhinui. It includes all organisations, communities and individuals who live, work, learn and play in Te Puhinui and recognises the ability and capacity of people to sustain and maintain their mauri and that of taiao and whenua. For mana whenua, this relates to their ability and capacity to maintain, sustain and regenerate their specific whakapapa relationships with nature and the people of Taamaki Makaurau.



Te Mana Whakahaere o Te Puhinui | Te Puhinui Leadership and Decision Making

Establish governance and operational structures and frameworks which support and enable appropriate forms of leadership, agency and decision making, as required for the regeneration of Te Puhinui.



Te Puhinui Identity

Revive and celebrate local identity by reconnecting those who live, work, learn and play in Te Puhinui with the stream, and its many places of significance and communities in order to foster a sense of meaning, belonging, connection and pride of place.



Te Puhinui Living Lab

Establish an applied research initiative within Te Puhinui to amplify and optimise its regeneration. The living lab will enable practical, on-the-ground learning opportunities for the communities of Te Puhinui, in a way that fosters collaboration, community engagement and participation, real-time monitoring and evaluation and the development of new knowledge.



Te Puhinui Empowered Communities

Develop a catchment-wide communications, activation and engagement campaign for community and private and public sectors to raise awareness and empower the people of Te Puhinui to participate in its regeneration.



Te Whanaketanga Oohanga o Te Puhinui | Te Puhinui Economic Development

Develop an economic strategy that focuses on the well-being of the communities of Te Puhinui, place-based livelihoods and long-term local careers through creating a pipeline of work and developing pathways to employment opportunities.

SUB-INITIATIVES

- Te Whakaoranga o Te Puhinui Charter
- Steering Group
- Te Puhinui Ancestral Naming Policy
- Te Puhinui Regeneration Agency
- Manukau Harbour Forum
- Policy, Planning and Strategy Alignment
- Environmental Compliance

SUB-INITIATIVES

- Te Waiohū Puuraakau | Te Waiohū Iwi Origin Narratives
- Mana whenua Puukoorero | Mana whenua Migration and Occupation Narratives
- Hapori Puukoorero | Puhinui Community Narratives

SUB-INITIATIVES

- Te Arotakenga o Te Puhinui | Te Puhinui Monitoring and Evaluation Framework
- Te Puhinui Hub
- Te Puhinui Citizen Science

SUB-INITIATIVES

- Te Puhinui Activation and Engagement Approach
- Te Puhinui Place Based Education
- Te Puhinui Communications Campaign

SUB-INITIATIVES

- Skills, Innovation, Employment and Enterprise Hub
- Indigenous and Social Procurement
- Rangatahi Tuu Kaha | Te Puhinui Youth Development Programme
- Te Puhinui Displacement and Resettlement Manaaki Strategy
- Te Puhinui Philanthropy



Whenua/place refers to the landscape foundations and built form of Te Puhinui. It recognises the ability and capacity of places to weave together taiao and tangata in a way that sustains and maintains the whole living system, to regenerate mauri.



Ngaa Tohu o Te Puhinui
Symbols of Te Puhinui

Protect, reclaim and reveal areas of cultural significance in Te Puhinui in order to strengthen, and where appropriate, celebrate the relationships between whenua/place, kaitiaki and the wider communities of Te Puhinui.

SUB-INITIATIVES

- *Te Mana o Ngaa Matukurua*
- *Te Puhinui Cultural Tohu/Markers*
- *Te Puhinui Public Arts and Cultural Taonga Integration*



Te Puhinui Food Sovereignty

Support individuals, organisations and institutions of Te Puhinui to develop greater control of the mechanisms, infrastructure and policies of food production, distribution and consumption in order to increase the health and resilience of local communities.

SUB-INITIATIVES

- *Te Puhinui Local Food strategy*
- *Te Puhinui Food Commons*
- *Ngaa Mahinga Kai o Te Puhinui | Food Gathering Sites*



Te Para Kore i Te Puhinui
Te Puhinui Zero Waste Systems

Develop a circular resource and waste system for Te Puhinui that reduces material use and the ecological footprint of the local economy.

SUB-INITIATIVES

- *Te Puhinui Resource Recovery Centre*
- *Circular Material Management*
- *Te Puhinui Local Goods and Services*



Restructuring Te Puhinui
Built Environment

Restructure Te Puhinui built environment to reconnect nature, people and place and foster vibrant, safe and accessible communities.

SUB-INITIATIVES

- *Orientate Towards and Connect to the Waters of Te Puhinui*
- *Human-scale Communities*
- *Retrofitting the Built Environment*
- *Safe and Healthy Streets*
- *Te Puhinui Backyard Initiative*



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Reclaim Te Puhinui as the central spine and primary movement corridor for the catchment, providing a continuous publicly safe and accessible link between the maunga/mountains and the moana/sea, offering a space for social gathering, recreation, play, public art and cultural expression.

SUB-INITIATIVES

- *Te Puhinui Path*
- *Te Ara Huupara o Te Puhinui | Te Puhinui Play-scape*
- *Te Puhinui Fitness Trail*
- *Te Puhinui Signage and Wayfinding*



KEY

- Transform Manukau
- Puhinui Stream
- Ngaa Ara o Te Puhinui (off-stream section)*
- Open space
- Existing Building Footprint
- Potential Future Building Footprint
as per Eke Panuku Development Manukau Framework Plan, March 2017

PROJECT AREAS

- ① Puhinui Domain
- ② Manukau Walking and Cycling Plan
- ③ Transform Manukau Industry Stream Restoration
- ④ Hayman Park Redevelopment and Stormwater Pond Upgrade
- ⑤ Wiri Reserve Stream, Park and Pond Upgrade
- ⑥ Barrowcliff Bridge and Place
- ⑦ Wiri Playground
- ⑧ Kerrs Road Crossings
- ⑨ Wiri Development
- ⑩ Counties Manukau District Health Board Walkway and Wetland
- ⑪ Raataa Vine Stream and Park Upgrade
- ⑫ Counties Manukau District Health Board Development
- ⑬ Te Maara Kai o Wirihiina | Wirihiina Community Gardens
- ⑭ Special Housing Area - Pacific Events Centre Drive

STRATEGIC INITIATIVES

Planned projects throughout the catchment reflect and integrate strategic initiatives from Te Puhinui Regeneration Strategy. Some of these strategic initiatives have been spatially located on the Programme of Works Plan. Other strategic initiatives that are planned in the area which are less spatially bound such as Te Puhinui Economic Development and Te Puhinui Identity have not been represented on the plan.



*Ngaa Ara oo Te Puhinui | Te Puhinui Pathways runs along the length of the stream

Artist impression | Aspirational outcomes for industrial zone of Transform Manukau area



1 Protect and enhance Puhinui Stream to improve bank stability and habitat.

2 Protect and enhance riparian corridor to restore the ecological function of the stream.

3 Identify and restore overland flow paths throughout Te Puhinui.

4 Re-establish a matrix of dense, multi-layered forest patches large enough to support a range of habitats for native wildlife.

5 Reinvigorate, celebrate, and apply Te Waiohua lunar cycles.

6 Acknowledge, record and celebrate the stories of place of mataawaka, Pasifika, Paakehaa, and tau iwi communities

7 Establish a physical and digital hub dedicated to deepening our collective understanding of Te Puhinui.

8 Develop a strategy for public arts, taonga and culture design integration for Te Puhinui.

9 Orientate development towards and connect to the Waters of Te Puhinui

10 Re-imagine and establish streets as places for people of all ages and abilities.

11 Develop a wayfinding and signage strategy for people moving through Te Puhinui.

12 Create a shared walkway along Puhinui Stream from maunga/ mountains to moana/sea.

Titarakura / Red-finned bully / Gobiomorphus huttoni

Pūriri / Vitex lucens

1. Introduction

Te Puhinui is a catchment in South Auckland nested within Te Maanuka / Manukau Harbour with a rich geological, ecological and human history. The main waterway and estuary running through the catchment are called Te Puhinui. Manukau Central, the main urban centre of South Auckland is located in the mid-catchment area. Through colonisation, industrialisation and urbanisation the catchment has undergone significant change and, in 2010, the stream was rated the dirtiest of Auckland's urban catchments that have been monitored over a period of time. Many improvements have been undertaken since this time, however a sustained programme of interventions over a long period of time will be required to return it to health.

This document, te rautaki o Te Whakaoranga o Te Puhinui/Te Puhinui Regeneration Strategy sets out a clear purpose and vision as well as core values, principles and responsibilities for all future work in Te Puhinui. It also identifies strategic initiatives, design guidelines and a programme of works for future projects that contribute to Te Whakaoranga o Te Puhinui, the regeneration of Te Puhinui. These respond directly to the unique character of Te Puhinui, its inherent challenges and opportunities, alongside current issues related to population growth, urban development, climate adaptation, and building the capacity and capability of the community.

Te Puhinui Regeneration Strategy is organised into five parts.

Part 1 – Introduction

Part 2 – Kaupapa and Tikanga

Part 3 – Mahinga - Areas of Work

Part 4 – Grounding the Strategies

Part 5 – Programme of Works

Appendix and Glossary

Te Whakaoranga o Te Puhinui

Te Whakaoranga o Te Puhinui is the wider project name for the intergenerational regeneration of Te Puhinui. It represents a unique opportunity to connect the headwaters of Te Puhinui to the mouth of Te Maanuka / Manukau Harbour and regenerate the well-being of the awa and its people.

Te Whakaoranga o Te Puhinui is a collaborative partnership between mana whenua, Auckland Council, encompassing Manurewa and Ootara-Papatoetoe local boards, Eke Panuku Development Auckland and Healthy Waters, crown agencies, community organisations and the culturally rich, unique and diverse communities of Te Puhinui.

An aspiration for Puhinui's regeneration is for the catchment to play a specific and unique role in the ecological, social, cultural and economic regeneration of its larger living systems, Te Maanuka, South Auckland and the wider Auckland bio-region.

Purpose of Te Puhinui Regeneration Strategy

The purpose of Te Puhinui Regeneration Strategy is to realise Te Whakaoranga o Te Puhinui in a way that is inclusive, place sourced, culturally led and community fed so that Te Puhinui and its people can thrive once more.

It aims to align, strengthen, and build on existing relationships and projects within the catchment and the larger Te Maanuka / Manukau Harbour catchment of which it is a part by providing frameworks and methods which, brought together at the right time, in the right sequence and in the right relationship, will help shift Te Puhinui from its current state to realising its full potential and ultimately achieving te ora o Te Puhinui - a healthy and prosperous Puhinui.

Assumptions

This document and the thinking that sits behind it is based on a range of assumptions which are informed by the wider project team's understanding of Te Puhinui, the larger systems in which it is nested and complex living systems theory.

These assumptions are:

- Much of the wisdom and intelligence required for Te Puhinui regeneration is place sourced - it is latent within the catchment.
- Te Puhinui regenerative capacity is inherent.
- The catchment will not regenerate in isolation - it is nested within larger systems and inter-connected with adjacent catchments that will also need to shift for positive significant change along with Te Puhinui to occur.
- Both bottom-up and top-down responses will be required.
- Te Whakaoranga o Te Puhinui can provide a template and framework for how others approach regeneration, noting that every place is unique and requires its own place-sourced, culture-led and community-fed knowledge and response.
- While a lot of work has already been done, a lot of work is still required to cultivate people's interest, enthusiasm and commitment to the regeneration of Te Puhinui.
- In order for this strategy to be effective it needs to be a living document, regularly

integrating learning and insights and responding to feedback, new knowledge and trial and error. This document represents the first iteration of te Rautaki o Te Whakaoranga o Te Puhinui.

Due to the intergenerational degradation of Te Puhinui and its current state, as well as the nature of complex living systems, there is incomplete knowledge about Te Puhinui, its needs and aspirations, and its place sourced potential. While complete knowledge will never be possible, shared and deepened understanding will emerge over time through meaningful reconnection of the people of Te Puhinui with this place.

While as many people, agencies and organisations as possible were engaged in the development of this strategy, there will be others active in the area that have not been involved and their contributions need to be considered.

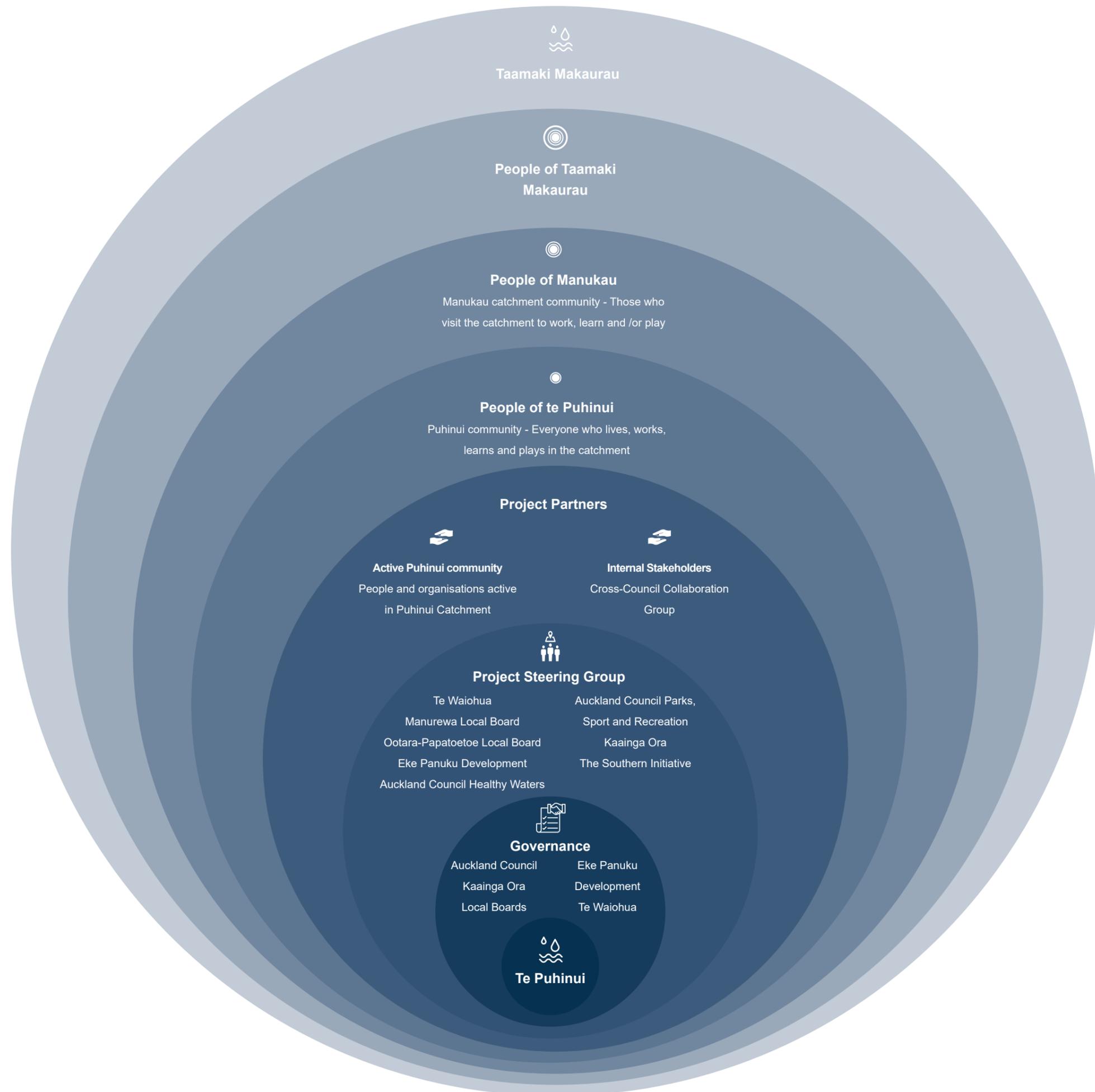
Te Whakaoranga o Te Puhinui is a long-term aspirational project and may take many generations to realise. Many of the strategic initiatives remain aspirational at the time of writing and require significant support from a wide range of actors/agents in Te Puhinui to realise.

Who's involved

A wide range of project partners and collaborators have been involved in the development of the regeneration strategy including identified key users and decision makers in the Puhinui Catchment area.

The diagram on this page provides an overview of key project partners and stakeholders and their responsibilities and relationship to the regeneration of Te Puhinui. It attempts to identify the nested scales of influence and impact as well as degrees of participation.

Where possible, each strategic initiative and Programme of Works project identifies key agencies and organisations and their role in specific initiatives and projects.



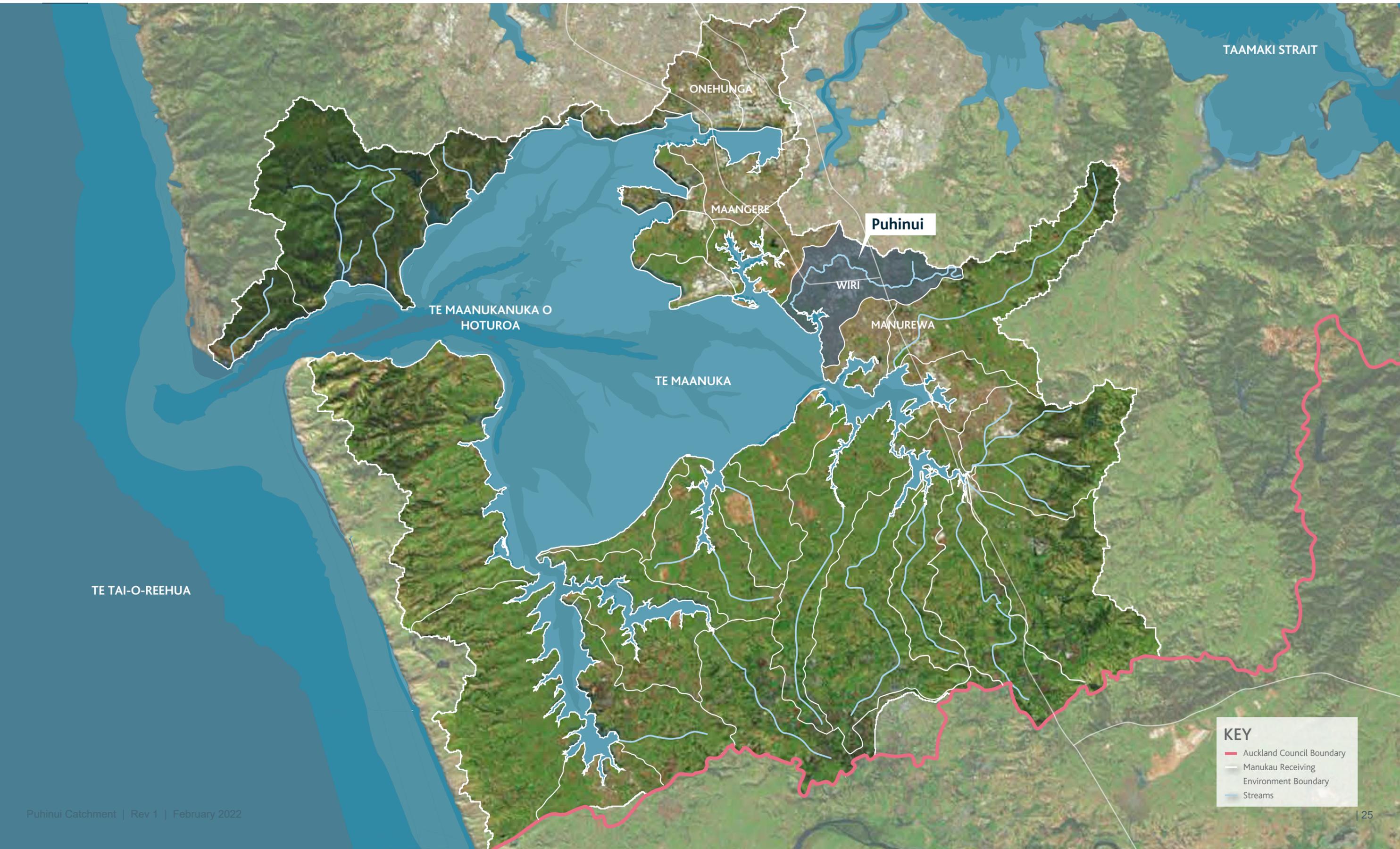
Ngaa tohu o Taamaki Makaurau | *Bio-regional context*



KEY

- Auckland Council Boundary
- Watershed Boundaries

Manukau Harbour receiving environment



KEY

- Auckland Council Boundary
- Manukau Receiving Environment Boundary
- Streams

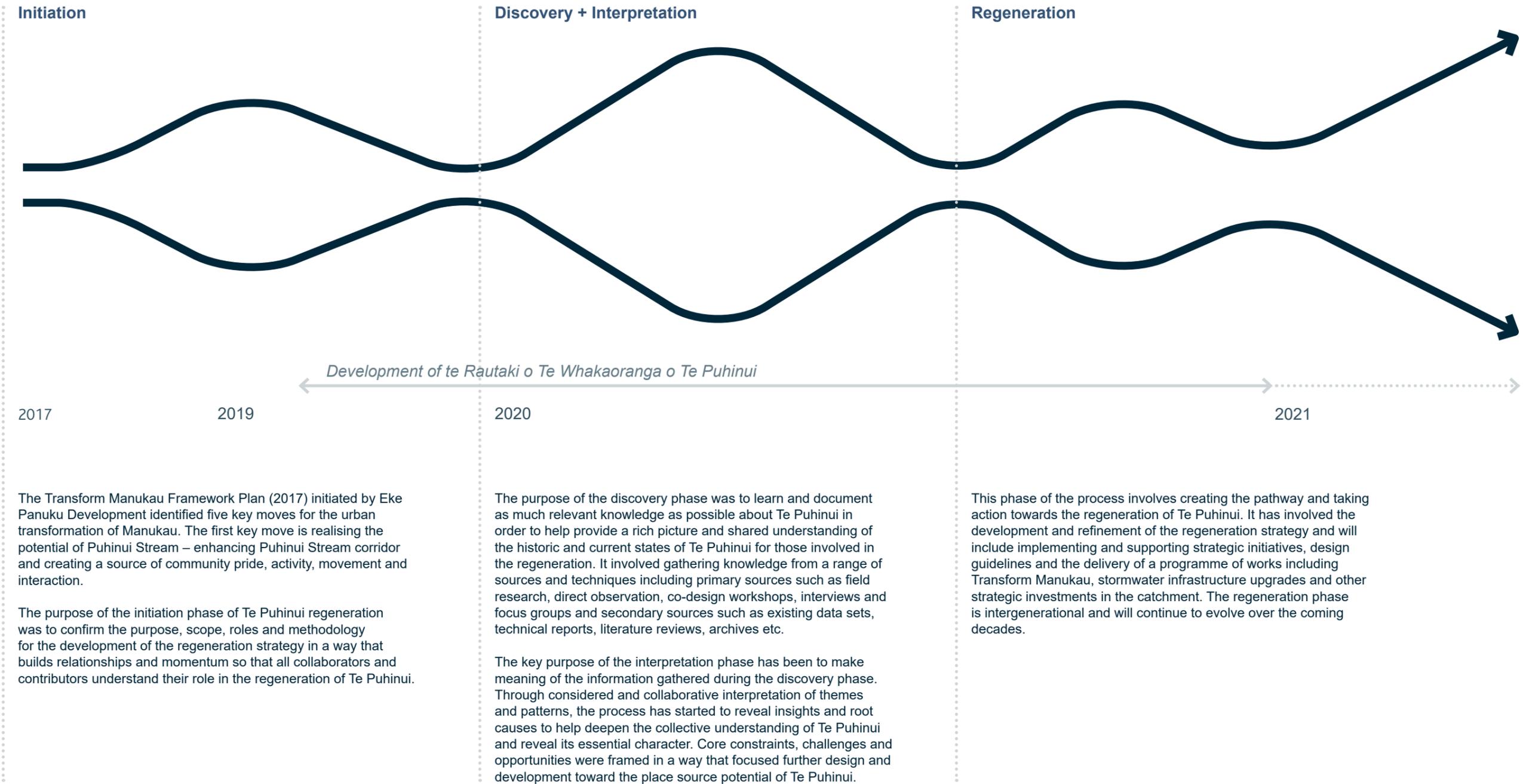
Puhinui Catchment and stream alignment



KEY

- Catchment Boundary
- Transform Manukau
- Puhinui Stream
- ▲ Maunga
- Marae
- 🚂 Train Station
- ✈ Auckland Airport

Project timeline | Background



Te Whakaoranga o Te Puhinui overview

Contributors

Crown

- Department of Conservation / Te Papa Atawhai
- Kāinga Ora
- Ministry for Social Development
- Youth Development and Local Economic Development

Council Family

- Auckland Council
 - Healthy Waters
 - Community Facilities
 - The Southern Initiative
 - Environmental Services
 - Community Empowerment Unit
 - Natural Environment strategy
- Council-controlled organisations
 - Eke Panuku Development
 - Watercare
 - Auckland Tourism, Events and Economic Development
 - Auckland Transport
- Local Boards
 - Manurewa
 - Ootara-Papatoetoe

Key Community Organisations

- Wiri Business Improvement District
- Manukau Business Improvement District
- Manurewa Marae
- Manukau Beautification Charitable Trust
- Manutahi Collective
- Sisters of Mercy
- The Cause Collective
- Rawiri Residents Association

Mana whenua / Te Waiohua

- Te Ākitai
- Ngaati Tamaoho
- Ngaati te Ata
- Ngaa mana whenua o Taamaki Makaurau

Source Document

- Mayor's Vision
- Auckland Plan
- Te Tāruke-a-Tāwhiri: Auckland Climate Plan
- Healthy Waters Strategic Direction
- Healthy Waters Our Water Future
- Panuku Transform Manukau Framework Plan
- Auckland Unitary Plan – Policies/rules to implement the Auckland Plan
- Core Strategies – E.g. Parks and Open Spaces Strategic Action Plan; Sport and Recreation Strategic Action Plan; Biodiversity strategy; Historic Heritage Plan.
- Long-Term Plan – Auckland Council's 10-year plan and budget and annual plans
- Auckland Design Manual
- Local Board Plans – 3-year plans of 21 local boards
- Local Board Agreement – Annual Budgets of 21 Local Boards
- Non-Council Legislation, Strategies, Plans and Frameworks – E.g. Reserves Act 1977, Conservation Act 1987, Conservation Management strategy (DoC), Iwi Management Plans, Take Mauri Take Hono, Resource Management Act, National Policy Statements, National Environmental Standards, Kāinga Ora Simple Guide, Freshwater Management Plan.

He Kaupapa Te Whakaoranga o Te Puhinui | The regeneration of Te Puhinui

Source Document

Te Whakaoranga o Te Puhinui Charter | Puhinui Charter

Ngaa Rautaki o Te Whakaoranga o Te Puhinui/Regeneration Strategic documents

Kaupapa

- Puutake/purpose
- Te Tirohanga/vision
- Maataapono/values

Tikanga

- Pou herenga/Principles and Responsibilities
- Pae Oranga/Horizons of Well-being

Mahinga

Strategic Initiatives

- Design Guidelines
- Programme of Works
- Stormwater Management Plan

Arotakenga*

- Critical Success Factors
- Evaluation Framework

Policy, strategy and planning context - Links to key documents

This section identifies national, regional and local strategies, policies and planning documents that this strategy will need to align with. Below is a summary of the key documents.

National Policy Statements

National Policy Statements enable central government to prescribe objectives and policies for matters of national significance which are relevant to achieving the purpose of the Resource Management Act 1991. National Policy Statements guide subsequent decision-making under the Act at the national, regional and district levels and can therefore significantly affect resource management practices in New Zealand. Regional policy statements, regional plans and district plans are all required to give effect to all national policy statements. Current National Policy Statements in force relate to freshwater management, renewable electricity generation, coastal policy and electricity transmission.

The National Policy Statement for Freshwater Management, the New Zealand Coastal Policy Statement and the Auckland Unitary Plan (Operative in Part) emphasise the importance of managing and improving the condition of Auckland's streams. Auckland Council's three strategic objectives for the management of freshwater (E1.2 of the Auckland Unitary Plan are:

- Freshwater and sediment quality is maintained where it is excellent or good

and progressively improved over time in degraded areas.

- The mauri of freshwater is maintained or progressively improved over time enabling traditional and cultural use of this resource by mana whenua.
- Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.

These objectives recognise that stormwater is an integral part of the hydrological cycle and that the quality of stormwater impacts on the mauri of water and the health of receiving environments.

National Environmental Standards

National Environmental Standards provide the opportunity for central government to promote the adoption of consistent standards at the regional and district levels. National Environmental Standards are regulations which prescribe technical standards, methods or requirements. They can also prescribe technical standards, methods or requirements for monitoring. National Environmental Standards currently in force relate to plantation forestry, air quality, sources of drinking water, telecommunications facilities, electricity transmission activities and assessing and managing contaminants in soil to protect human health.

Kāinga Ora Simple Guide

Kāinga Ora have design guidelines called the 'Simple Guide'. The Simple Guide to Urban Design & Development outlines Kāinga Ora's expectations for better-designed environments and highlights key design principles they consider to be fundamental to the creation of healthy and sustainable communities.

Auckland Plan 2050

The Auckland Plan is a spatial plan for Auckland, required by section 79 of the Local Government (Auckland Council) Act 2009. The purpose of the plan is to contribute to Auckland's social, economic, environmental, and cultural well-being through a comprehensive and effective long-term strategy for Auckland's growth and development. The planning horizon of the Auckland Plan is 30 years.

Local Board Plans

Local Board Plans are required by section 20 of the Local Government (Auckland Council) Act 2009. The purpose of Local Board Plans is to:

- reflect the priorities and preferences of the communities within the local board area in respect of the level and nature of local activities to be provided by the Auckland Council over the next 3 years;
- identify and describe the interests and preferences of the people within the

local board area for the purposes of enabling the local board to communicate those interests and preferences for the purposes of section 16(1)(b);

- provide a basis for developing the local board agreement for each of the next 3 years;
- inform the development of the next long-term plan, particularly in relation to the identification of the non-regulatory activities of the council for which decision-making responsibility should be allocated to the local board;
- provide a basis for accountability of the local board to the communities in the local board area; and
- provide an opportunity for people to participate in decision-making processes on the nature and level of local activities to be provided by the council within the local board area.

Reserve Management Plans

Reserve Management Plans are required by section 41 of the Reserves Act 1977. Reserve Management Plans must provide for and ensure the use, enjoyment, maintenance, protection and preservation of reserves, as the case may require, as appropriate to the reserve for the purposes for which it is classified. In Auckland there is one Reserve Management Plan for all Regional Parks. Local Parks Management Plans are currently in development for each local board area.

Policy, strategy and planning context - Links to key documents

Council Plans

Auckland Council's Indigenous Biodiversity strategy – This strategy responds to Auckland Council's statutory responsibilities as a unitary authority to protect indigenous biodiversity.

Auckland Unitary Plan - The Unitary Plan manages how different land-use zones are used, developed or protected. All land in Auckland, including land in coastal marine areas, has a zone. In general, the way that land is zoned reflects how it is used and what sort of activities happen there.

Auckland Design Manual - The manual sits alongside the Auckland Unitary Plan and provides direction on the design of public and private sites, including parks and open spaces.

Long-term Plan (LTP) - The long-term plan is a budget that sets out the activities, services and investments Auckland Council have planned for the next 10 years.

Water Sensitive Design (GD04) – GD04 is one of the technical guides for infrastructure that sits within the Auckland Design Manual. Other relevant council technical guides include stormwater management devices (GD01), and erosion and sediment control (GD05).

Parks and Open Space Strategic Action Plan – This plan sets out a 10-year direction for Auckland's parks and open spaces.

It outlines Auckland Council's priorities and actions for open spaces up to 2023, contributing to the outcomes of the Auckland Plan.

Open Space Network Plan – This plan sits below the Parks and Open Space Strategic Action Plan. It responds to anticipated growth and provides the community with access to a range of recreation, social, cultural and environmental experiences. It assists Auckland Council to prioritise its spending for parks and open space development by identifying projects for prioritisation through the local board plan, long-term plan and annual plan processes.

Open Space Provision Policy - This policy sits below the Parks and Open Space Strategic Action Plan and provides direction on the provision of open space at a network scale (across multiple open spaces rather than an individual site). It informs the council's investment, asset and acquisition activities in open space, and guides spatial planning by both the council and the private sector.

Totara Park Masterplan – This masterplan was completed and approved in 2017 and sets in process a series of steps or actions that may be taken to achieve the outcomes as required to protect the unique character of the park and create great experiences for all users into the future. It is a case study of 'developing a park' within the Auckland Design Manual.

Te Rautaki Ngahere ā-Tāone o Tāmaki Makaurau - Auckland's Urban Ngahere (Forest) strategy - The strategy outlines a strategic approach, including the identification of targets and high-level actions, to knowing, growing, and protecting Auckland's urban ngahere. It recognises the social, environmental, economic, and cultural benefits of our urban ngahere.

Te Tāruke-a-Tāwhiri: Auckland's Climate Plan – The plan is Auckland's blueprint for halving emissions by 2030, reaching net zero emissions by 2050 and preparing for the impacts of climate change. It sets out eight strategic priorities for climate action.

Te Whakaoranga o Te Puhinui: Te Rautaki | Document structure and logic

This diagram illustrates how the strategy has been structured utilising a whakapapa logic. This approach ensures the integration and interdependency between each of the strategy stages, ensuring a clear line of sight between the purpose, principles, design and outcomes of Te Whakaoranga o Te Puhinui.

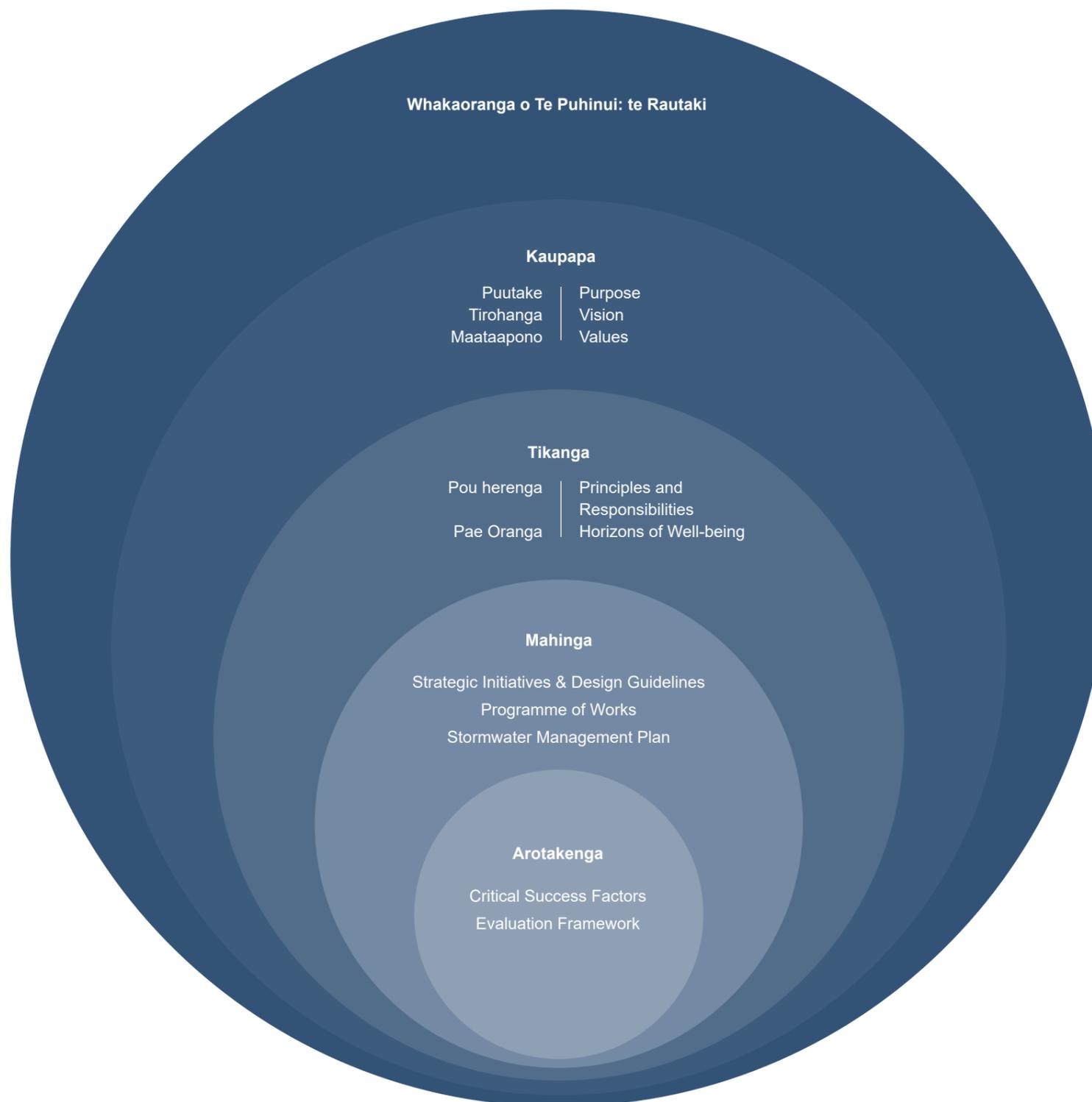
The kaupapa/platform or agenda, laid down by Te Waiohūa with support from Ngāa mana whenua o Te Taamaki Makaurau, articulates the purpose, vision and values for the regeneration of Te Puhinui.

Tikanga/customary system of practices, informed by kaupapa, encompasses the principles, responsibilities and pathways that underpin the implementation of the regeneration of Te Puhinui.

Mahinga/areas of work includes the strategic initiatives, design guidelines and programme of works and describes and informs initiatives and projects that will collectively implement the regeneration of Te Puhinui. Mahinga also includes the Stormwater Management Plan.

Arotakenga represents the monitoring and evaluation framework that will ensure Te Whakaoranga o Te Puhinui is effective in regenerating Te Puhinui and responds to feedback and learning over time.

Each section builds on the previous, collectively contributory to the ongoing regeneration of Te Puhinui.



How to use the document

This strategy document has been designed to be used by a range of users: decision makers, agencies, operators and practitioners working in the catchment area. As such, there are different ways in which to approach and use this document to support work in Te Puhinui.

In summary, the **Introduction** provides an overview of Te Puhinui and its regeneration. The **Kaupapa + Tikanga** section explains the conceptual and cultural foundations underpinning the regeneration of Te Puhinui as well as describing the pathway to well-being. The **Strategic Initiatives** describe discrete but interrelated initiatives that will contribute directly to the regeneration of Te Puhinui. The **Design Guidelines** describe how best to achieve the desired state shifts and outcomes sought through the regeneration process. **Grounding the Strategies** provides visualisations and details of how the strategic initiatives and design guidelines can be woven together to achieve aspirational outcomes in specific locations across the catchment. The **Programme of Works** details specific projects that constitute a short-term programme of projects for delivery within the stream corridor and Transform Manukau area.

Some may find it most useful to use the document to explore or work with a **particular theme**. The strategic initiatives and design guidelines are organised by the threads **Taiao/Nature, Tangata/People and Whenua/Place**. While these threads are all interconnected, if your work is primarily focused on one of these threads, you will most likely want to start with the theme most relevant to your work before exploring how to integrate other themes into your work. For example, if you are looking at urban development start with the Whenua

strategic initiatives and guidelines such as Urban Restructuring before exploring how your work can support and be enhanced by the other strategic initiatives and guidelines from other threads such as te Puungao o Te Puhinui / Te Puhinui Energy strategy and te Mana Whakahaere o Te Puhinui / Te Puhinui Governance. For more detailed information about Te Puhinui reference Te Puhinui Stormwater Management Plan (SMP) 2021 and Te Whakaoranga o Te Puhinui: Te Puhinui regeneration Discovery Document.

Others may be working at a **specific location** within the catchment and will need to understand how the strategic initiatives and design guidelines contribute to, guide and influence their work. Working with different communities in the upper, middle and lower catchments will require different considerations and might involve contributing to strategic initiatives most relevant for that place/location within the wider catchment area.

Some people will use the strategy as part of working on a **particular project**. In this case start with the Kaupapa + Tikanga section to ground yourself in the conceptual framing of the regeneration before reviewing the strategic initiatives that have most relevance to your project.

The strategy can also be used to support business cases or rationale for working in the catchment or integrating specific methodologies or outcomes into project deliverables. For example this document can help shape appropriate engagement and research methodologies; the identification and/or alignment of project drivers and outcomes in business case development etc.

If you are interested in a particular project, start with the Kaupapa + Tikanga section to ground yourself in the conceptual framing of the regeneration strategy before reviewing the strategic initiatives that have most relevance to your project.

If you are interested in a specific location, start with the strategic initiatives and design guidelines to understand how they contribute to, guide and influence your work. Working with different communities in the upper, middle and lower catchments might involve contributing to strategic initiatives most relevant to that place / location within the wider catchment area.

Te Whakaoranga o Te Puhinui: Te Rautaki Te Puhinui Regeneration Strategy Document



Introduction
Overview of Te Puhinui and its regeneration



Kaupapa + Tikanga
Conceptual and Cultural Foundations



Strategic Initiatives
Initiatives that contribute directly to Te Puhinui regeneration



Design Guidelines
Practical principles and advice which contributes directly to strategic initiatives and the regeneration of Te Puhinui.

If you are interested in a particular theme, start with the strategic initiatives and design guidelines, which are organised by the threads Taiao/Nature, Tangata/People and Whenua/Place. While these threads are all interconnected, you will most likely want to start with the theme most relevant to your work before exploring how to integrate other themes into your work.

2. Kaupapa + tikanga

*The kaupapa + tikanga section aligns with and draws inspiration directly from **He Kaupapa Whakaoranga o Te Puhinui/The Regeneration of the Puhinui Source Document** and provides the conceptual and cultural foundations underpinning this strategy.*

*This section articulates the **puutake/purpose** and **te tirohanga/vision** of Te Whakaoranga o Te Puhinui, as well as **ngaa kawa e wha/the four underpinning anchors** that influence and shape Te Puhinui. It identifies the importance of re-establishing the connection and relationships between **nga aho/the three threads of taiao/nature, tangata/people and whenua/place** as the key lashings which underpin **te ora o Te Puhinui/the well-being of Te Puhinui**.*

*This section describes **ngaa maataapono/values** and **ngaa pou herenga/principles** and **activity areas** fundamental to the regeneration of Te Puhinui. **Te Whakaoranga o Te Puhinui** is the distillation of these values and principles into a shared commitment and description of responsibilities by decision makers, agencies, organisations and individuals in Te Puhinui.*

***Nga pae oranga o Te Puhinui/horizons of well-being** maps the journey over time of Te Puhinui back to a future state of health and prosperity.*

Te puutake | Purpose

*We seek to realise Te Whakaoranga o Te Puhinui
In a way that acknowledges, through whakapapa, the interconnectivity of people, place and nature,
So that through indigenous, place based knowledge we learn how to inhabit and evolve our urban environments towards a
flourishing future.*

Te tirohanga | Vision

*Te Whakaoranga o Te Puhinui
He waka eke noa
Kia Eke Panuku, Kia Eke Tangaroa
Haumi e
Hui e
Taiki e*

*Intergenerational well-being of Te Puhinui and its people
Unity in a shared purpose
With our collective effort,
We will succeed*

Ngaa kawa e wha | *Underpinning anchors*

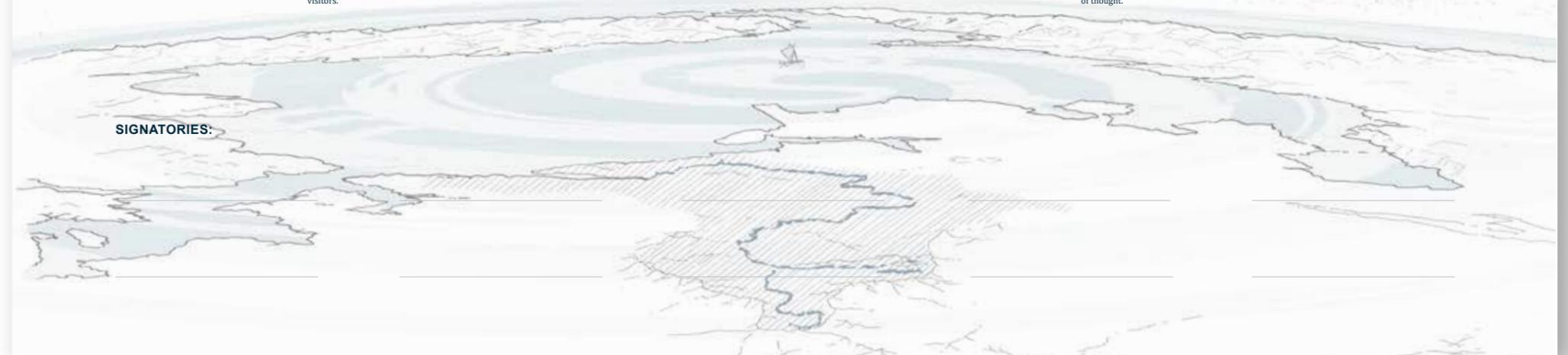
There are four underpinning anchors that influence and shape Te Puhinui. These anchors represent different ways of seeing, understanding and acting in the world and the customs and practices that arise from them. All four of these underpinning anchors need to be understood and navigated individually and together to effectively regenerate Te Puhinui.



Te Puhinui regeneration charter

The charter for Te Puhinui encapsulates te puutake/purpose, te tirohanga/vision, maataapono/values, responsibilities and obligations underpinning the regeneration of Te Puhinui. It represents an agreement and acknowledgement of the collaboration and mutual respect of all signatories, including between Te Waiohuria iwi, mana whenua, local communities, the council and the Crown, towards the regeneration of Te Puhinui.

Te Whakaoranga o Te Puhinui Charter Te Puhinui Regeneration Charter

<p>PUUTAKE/PURPOSE</p> <p>We seek to realise te whakaoranga o Te Puhinui in a way that acknowledges, through whakapapa, the interconnectivity of people, place and nature; so that through indigenous, place-based knowledge we learn how to inhabit and evolve our urban environments towards a flourishing future</p>			<p>TE TIROHANGA/VISION</p> <p>Te whakaoranga o Te Puhinui He waka eke noa Kia Eke Panuku, Kia Eke Tangaroa Haumi e Hui e Talki e</p> <p>Intergenerational wellbeing of Te Puhinui and its peoples Unity in a shared purpose With our collective effort, We will succeed</p>			
<p>NGAA AHO/THE THREADS : TAIAO, TANGATA, WHENUA/HEALTHY ENVIRONMENTS, EMPOWERED COMMUNITIES, RESILIENT AND INTEGRATED SYSTEMS</p>						
<p>Ko te mana rangatira he tapu, manaakitia te mauri tangata</p> <p><i>Human dignity is fundamental – nurture the human spirit</i></p> <p>RANGATIRATANGA</p> <p>WE BELIEVE: MAATAAPONO/VALUES</p> <p>Listening to the voices and according mana, authority and value to the people of Te Puhinui will enable mana whenua and whaanau/community resilience, leadership and oranga/wellbeing.</p> <p>WE COMMIT TO: POU HERENGA/ PRINCIPLES AND RESPONSIBILITIES</p> <p>Giving effect to and fulfilling the mutual Te Tiriti o Waitangi obligations and responsibilities through the partnership between Te Waiohuria iwi, the council and the Crown.</p> <p>An empowered communities approach throughout our projects – acknowledging the key role of both rangatira and rangatahi.</p> <p>Raising pride, sense of identity and connection to Te Puhinui to promote common value, understanding and spiritual connection.</p>	<p>Tuu mai e moko, he whakaata noo maatua, te moko o oo tuupuna</p> <p><i>Stand tall oh moko, the reflection of your parents, the blueprint of your ancestor</i></p> <p>KAITIAKITANGA</p> <p>Te Puhinui is a cherished tupuna/ancestor, teacher and guardian, of whom mana whenua are direct descendents. Mana whenua hold fundamental kaitiakitanga obligations and responsibilities on behalf of tuupuna and mokopuna.</p> <p>Te Waiohuria having a unique role as kaitiaki involving mutual responsibilities and obligations for customary care, protection and development of the nature, place and people of Te Puhinui.</p> <p>Recognising the mana and expressions of self-determination of each iwi of Waiohuria and ensuring that they will play a lead role in the whakaoranga/regeneration of Te Puhinui.</p> <p>Te Waiohuria holding manaakitanga obligations and responsibilities to the wider whaanau, community and manuwhiri/visitors.</p>	<p>Kia whakatoomuri te haere whakamua</p> <p><i>To walk into the future, we must be guided by the past</i></p> <p>MAATAURANGA</p> <p>Whakaoranga/regeneration is achieved through knowledge and understanding of the whakapapa connections between people, place and nature. This requires learning from the past to move into the future.</p> <p>Pursuing maatauranga – drawing from mana whenua and western knowledge systems and generating a new dual knowledge system.</p> <p>Recognising maaramatanga and mana whenua wisdom enabling intergenerational transfer of customary wisdom and understanding.</p> <p>Embedding resilience and adaptability in our planning and development, while acknowledging that this an evolving and dynamic space.</p>	<p>Ko te wai te ora o ngaa mea katoa</p> <p><i>Water is the life giver of all things</i></p> <p>MAANAAKITANGA</p> <p>Wai/water is the source of all life, and through manaakitanga is the primary enabler of whakaoranga/regeneration, contributing to our collective and individual identities and prosperity.</p> <p>Starting with wai/water and taking a mai i ngaa maunga ki te moana/whole of catchment approach to regenerating Te Puhinui, extending out toward the whole living system of Te Maanuka / the Manukau Harbour.</p> <p>Supporting integral and intact awa and whenua ecosystems and not compromising intergenerational success for short-term gain.</p> <p>Protecting and enhancing the life supporting capacity of Auckland's waters – te mauri o te wai o Taamaki Makaurau.</p>	<p>Poipoi te kakano, kia puawai</p> <p><i>Nurture the seed and it will blossom</i></p> <p>TAURITETANGA</p> <p>Resilience, equity, and social and ecological justice is fostered through taurite/balance and harmony of nature, place and people.</p> <p>Reconnecting and seeking balance and resilience in our ecological, social, cultural and economic systems.</p> <p>Supporting a prosperous community, job creation and economic development through the whakaoranga/regeneration of Te Puhinui.</p> <p>Supporting appropriate and healthy growth, access and recreation, while acknowledging that people are part of the living system of Te Puhinui.</p>	<p>E kore au e ngaro, he kaakano i ruia mai i Rangiaatea</p> <p><i>I will never be lost, for I am a seed sown in Rangiaatea</i></p> <p>WHANAUNGATANGA</p> <p>Oranga/wellbeing of Te Puhinui requires strong, collaborative and reciprocal relationships between nature, place and people.</p> <p>Employing whakapapa-centred design to enable spiritual, physical and mental wellbeing between people, place and nature.</p> <p>Mahi tahi/working together to foster and strengthen relationships between Te Waiohuria iwi, communities, the council and the Crown and seeking to reduce disparities across the communities of Te Puhinui.</p> <p>Collaborating in design through mutual respect and adaptive decision-making processes that work across disciplines, skill sets and communities to ensure diversity of thought.</p>	<p>He pookekee Uenuku i tuu ai</p> <p><i>A rainbow stands out against the dark clouds</i></p> <p>TIAKITANGA</p> <p>We all have a mutual responsibility for the oranga/wellbeing of the nature, place and people of Te Puhinui through generosity, respect and care.</p> <p>Caring for the nature, place and people of Te Puhinui in order to regenerate the collective mauri/vitality of its ecosystems.</p> <p>Honour and cherish Te Puhinui in our actions and actively support communities role in tiakitanga/stewardship of Te Puhinui.</p> <p>Our approach is anchored deeply in this place – we will listen deeply and learn from Te Puhinui.</p>
<p>SIGNATORIES:</p> 						

Maatapono + pou herenga | *Values + principles*

Ngaa Maatapono/Values and Pou Herenga/Principles make up the navigational compass and framework for the regeneration strategy of Te Puhinui. Please refer to Te Whakaoranga o Te Puhinui Charter for associated values and responsibilities.

Rangatiratanga

Growing and supporting leadership talent.

Giving effect to and fulfilling the mutual Te Tiriti o Waitangi obligations and responsibilities through the partnership between Te Waiohuria iwi, the council and the Crown.

An empowered communities approach throughout our projects - acknowledging the key role of both rangatira and rangatahi.

Raising pride, sense of identity and connection to Te Puhinui to promote common values, understanding and spiritual connection.

Kaitiakitanga

Mana whenua customary care, protection and development.

Te Waiohuria having a unique role as kaitiaki involving mutual responsibilities and obligations for customary care, protection and development of the nature, place and people of Te Puhinui.

Recognising the mana and expressions of self-determination of each iwi of Te Waiohuria

and ensuring that they will play a lead role in the whakaoranga/regeneration of Te Puhinui.

Te Waiohuria holding manaakitanga obligations and responsibilities to the wider whaanau, community and manuwhiri/visitors.

Maatauranga

Knowledge, skills, learning and innovation.

Pursuing maatauranga - drawing from mana whenua and western knowledge systems and generating a new dual knowledge system.

Recognising maaramatanga, mana whenua wisdom, and enabling intergenerational transfer of customary wisdom and understanding.

Embedding resilience and adaptability in our planning and development, acknowledging that this an evolving and dynamic space.

Manaakitanga

Water has the life giving capacity to manaaki.

Starting with wai/water and taking a mai i ngaa maunga ki te moana/whole of catchment approach to regenerating Te Puhinui extending out toward the whole living system of Te Maanuka / the Manukau Harbour.

Supporting integral and intact awa and whenua ecosystems and not compromising intergenerational success for short-term gain.

Protecting and enhancing the life supporting capacity of Auckland's waters - Te mauri o te wai o Taamaki Makaurau.

Tauritanga

Harmony, balance, equity, social and ecological justice/prosperity.

Reconnecting and seeking balance and resilience in our ecological, social, cultural and economic systems.

Supporting a prosperous community, job creation and economic development through the whakaoranga/regeneration of Te Puhinui.

Supporting appropriate and healthy growth, access and recreation, acknowledging that people are part of the living system of Te Puhinui.

Whanaungatanga

Fostering and strengthening relationships across communities and sectors - collaboration and interconnectivity.

Employing whakapapa-centred design to enable spiritual, physical, and mental well-being between people, place and nature.

Mahi tahi/working together to foster and strengthen relationships between Te Waiohuria iwi, communities, the council and the Crown and seeking to reduce disparities across the communities of Te Puhinui.

Collaborating in design through mutual respect and adaptive decision-making processes that work across disciplines, skill sets, and communities to ensure diversity of thought.

Tiakitanga

Care, support and hospitality.

Caring for the nature, place and people of Te Puhinui in order to regenerate the collective mauri/vitality of its ecosystems.

Honour and cherish Te Puhinui in our actions and actively support communities role in tiakitanga/stewardship of Te Puhinui.

Our approach is anchored deeply in this place - we will listen deeply and learn from Te Puhinui.

Ngaa pae oranga acknowledges the whakapapa foundations of place and the cultural narratives through time which have brought Te Puhinui to its current state. It also expresses tactical and strategic scenarios that are envisioned to navigate Te Puhinui back to health and prosperity.

The Horizons of Well-being are:

Te pae tawhito/past states

Te pae waatuu/present state

Te pae tata/near horizon (short term)

Te pae tawhiti/distant horizon (medium term)

Te pae rangi/beyond the horizon

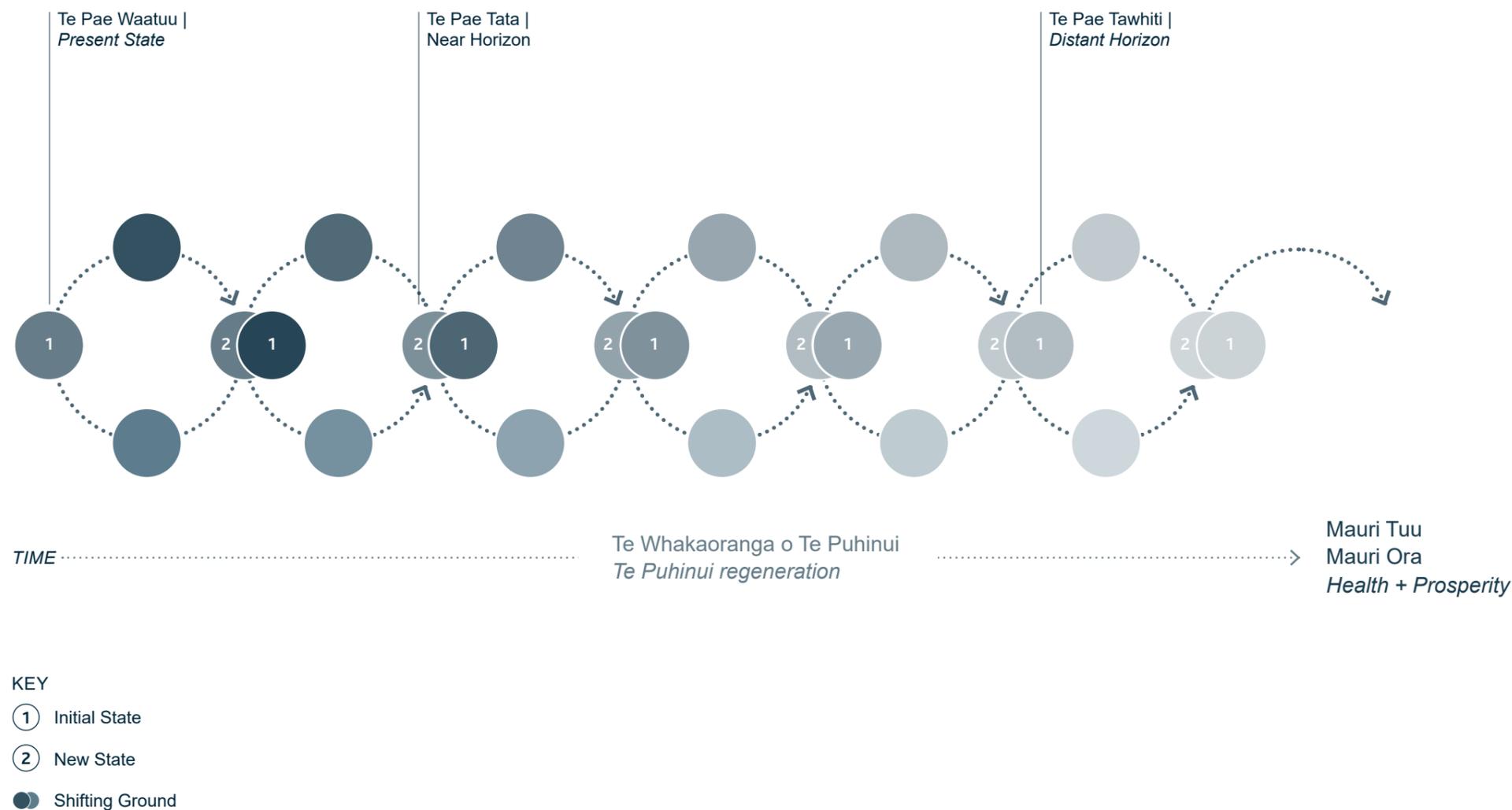
The horizons of well-being recognise:

- the importance of value-based decision making;*
- the necessary journey and associated challenges of bringing together multiple sets of cultural compasses/worldviews; and*
- the need to align obligations and responsibilities to enable a sense of belonging and working together towards a common vision which **focuses on impact and benefit rather than outcomes and success factors.***

Pae whakaterere | *Shifting ground*

Ngaa pae oranga includes future scenarios (pae whakaterere) which can help navigate state changes and shifting ground as Te Puhinui moves towards its potential. The state changes outline a narrative pathway from the past towards the future which include future actions and activities supporting the regeneration of Te Puhinui. The strategic initiatives, design guidelines and programme of works all contribute to shifting ground in Te Puhinui from the present state, te pae waatuu, to a more capable, vibrant, connected, and increasingly place-sourced near future scenario, te pae tata. Te pae tata in turn, creates the foundations for further regeneration leading towards te Pae Tawhiti characterised by mauriTuu/mauri ora - a transformed state of well-being which is self-sustaining and self-regenerating.

Te Whakaoranga o Te Puhinui, guided by the stars beyond the horizon and anchored by kaupapa is focused on shifting Te Puhinui towards mauri tuu/mauri ora. This will be achieved through a series of state changes in Te Puhinui over time, each change providing more capability and capacity within the wider system to regenerate itself.



Ngaa pae oranga o Te Puhinui | *Horizons and shifting states back to well-being*



Te Pae Rangi | *Beyond the Horizon*

Navigational Stars:
Tirohanga/vision
Puutake/purpose
Kaupapa/source document
Te Puhinui regeneration charter

Te Pae Tawhito | *Past States*

Pre-human occupation

Healthy, vibrant catchment.
Abundant estuary and shoreline.

First people

Ecologically, culturally and functionally integrated part of Te Maanuka.
Ngaa Matukuturua ‘twin’ maunga and surrounding areas are ideal for permanent settlement/paa.

Colonisation – dislocation, conversion of catchment to extraction and consumption paradigm.
Congregation/resettlement of displaced people.
Te Puhinui becomes dumping ground.
Urban form and land use fragment and disconnect.
Te Puhinui is forgotten and neglected.

Te Pae Waatuu | *Present State*

Crying for recognition and healing.
State of neglect/ill-being.
Diminished mauri-tapu-mana.
Te Puhinui is neglected, burdened, fragmented and disconnected. It is still a dumping ground.
Displaced/disconnected whaanau.
Stream is seriously degraded with sedimentation, flooding, stream health and water quality issues.
Partner agencies are kaupapa ready for regeneration.
Multiple entities and agencies in catchment are active and interested in Te Puhinui and its regeneration.
Emerging collaborative governance, planning and practice across treaty partners, entities, agencies and disciplines.
Multiple projects underway in the catchment to restore ora, but not always connected or coordinated.

Te Pae Tata | *Near Horizon*

Te Puhinui pride of place is emerging and fosters bonds of connection and affection for Te Puhinui.
Te Waiohuria’s positive presence and manaaki in catchment is felt.
Agencies and organisations in catchment are visible and working in alignment with the regeneration strategy.
Te Puhinui regeneration Charter is activated and honoured.
Te Puhinui regeneration continues to attract and maintain investment, as well as conservation and restoration initiatives in alignment with the regeneration strategy.
Puhinui Catchment focused events, celebrations and hui are common.
Local maramatanga is embodied, influencing and directing regeneration and adaptive resilience of Te Puhinui.
Local economic development is making tangible improvements to local well-being. Local people are employed in local environmental and other regeneration initiatives, including rangatahi.
Mauri and mana of Puhinui Stream and estuary are increasing.
Conservation and restoration mentoring programmes and initiatives, including urban ngahere planting programmes and water quality testing using maatauranga Maaori, are running.
Measurable increases in water quality, biodiversity and presence of indicator species within catchment.
Reduction in illegal dumping.
Places within the catchment of cultural significance are valued and celebrated.
Greenways, shared paths and a network of streets for people connect communities and places across the catchment.
Water sensitive design is integrated into new developments and infrastructure renewals.

Te Pae Tawhiti | *Distant Horizon*

Te Puhinui is celebrated and cherished.
Mana of stream is restored.
Te Puhinui is connected and functioning as healthy integrated living system, including ecological and human systems.
Te Puhinui is a source of healing and inspiration for others.
Te Puhinui and its communities experience fluid occupation and ongoing adaptive resilience.
Measurable environmental health indicators, including water quality and biodiversity within Te Puhinui and Te Maanuka, continues to increase.
Te Whakaoranga o Te Puhinui is considered an exemplary flagship project.
Vibrant local food (eco)system and economy continues to develop.
Strong catchment identity and pride of place amongst Puhinui communities with visible cultural identify.
Fish can migrate full length of stream.
Green corridors throughout the catchment connect maunga to moana.
Environmental stewardship and climate action are celebrated and shared cultural values.
Water sensitive design is business as usual in all developments throughout catchment.

Mauri Tuu
Mauri Ora
Health + Prosperity



Mauri Noho
Mauri Mate
Stagnation + Degradation



Te Whakaoranga o Te Puhinui
Te Puhinui regeneration



Mauri Tuu
Mauri Ora
Health + Prosperity

3. Mahinga | Areas of work

*This section translates values and principles into tools and methods for action in the form of **strategic initiatives**, **design guidelines** and a **programme of works**. Brought together at the right time, in the right sequence and in the right relationship, they are intended to enable government departments, public and private agencies, stakeholders and community groups to shift Te Puhinui from the existing ground toward its full potential and ultimately achieve te ora o Te Puhinui.*

*The strategies have been aligned with *ngaa aho* - the three threads of well-being - *taiao/nature*, *tangata/people* and *whenua/place*.*

Collectively the strategies provide top-down guidance from the strategic governance and decision making level through management; and bottom up, practical actions and ways of working that lead to regenerative outcomes on the ground. The strength of connectivity/relationships between the strategies are identified to highlight dependencies, synergies and opportunities to catalyse regeneration and amplify positive impacts.

Overview of the strategic initiatives

The strategic initiatives describe discrete but interconnected initiatives that relate to the regeneration of Te Puhinui.

The strategic initiatives are organised by the *ngaa aho*/three threads:

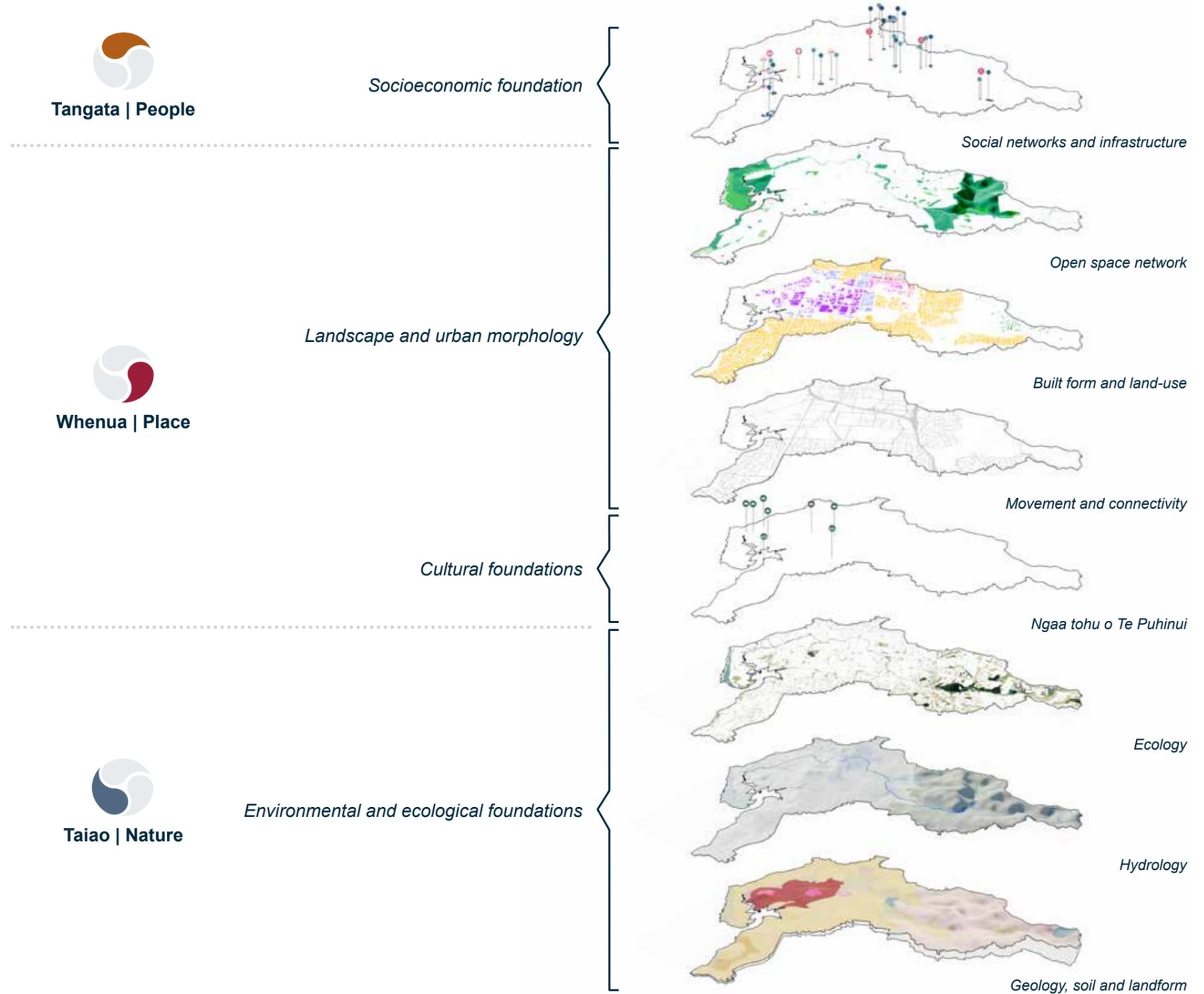


Te Puhinui has developed, evolved and transformed over time, from ancient times to the present. The patterns that have been laid down in the past provide foundational and essential information necessary to understanding a place, how it functions, why it is the way it is and how it might change in the future.

Interconnected systems change over different timescales - the layers, described here using the threads of *taiao/nature*, *whenua/place* and *tangata/people*, represent significantly different timescales through which change processes emerge and evolve.

The layers of *taiao* and *whenua* provide a sustainable and stable foundation for the development and ongoing evolution of *tangata*. Understanding these historic patterns, laid down from ancient times to more contemporary events, also provides insights, inspiration and direction that we can work with and harness to support Te Puhinui evolution towards a vibrant, healthy and flourishing future state.

See appendix A for Strategic Initiatives Overview.



Relationships between strategic initiatives

The initiatives described in the following pages aim to align, strengthen and build on existing relationships and projects within Te Puhinui and Te Maanuka. This is achieved by providing frameworks and methods, which brought together at the right time, in the right sequence and in the right relationship, will help move Te Puhinui from its current state to realising its full potential and ultimately achieving te ora o Te Puhinui - a healthy and prosperous Puhinui.

Each strategic initiative is connected to other initiatives in different ways. Understanding the nature of the relationships between different initiatives is important to ensure that challenges are addressed holistically and key opportunities are not missed. Some types of relationships to consider include:

Synergy – strategic initiatives complement and strengthen each other. For example te Wai o te Puhinui, Urban Ngahere and Living Lab.

Amplification and leverage – one initiative positively contributes to or increases the impact on another initiative. For example Te Puhinui Identity and Puhinui Living Lab amplify multiple other initiatives.

Keystone initiatives – in ecology, keystone species are those species that have an extremely high impact on the integrity and function of an ecosystem. The keystone initiatives that currently have an extremely high impact on the functioning and well-being of Te Puhinui ecosystem are Te Kaitiakitanga me Te Tiakitanga, Te Mana Whakahaere, and Restructuring Te Puhinui Built Environment.

Dependency – some strategic initiatives are dependent or contingent on other projects either to initiate or to be effective. For example Te Puungao o Te Puhinui / Te Puhinui Energy Strategy is largely dependent on Te Mana Whakahaere o Te Puhinui / Te Puhinui Governance as the scale of the energy initiative will require political will and financial investment to realise.

The diagram on this page maps the connections between strategic initiatives with the thickness of the line identifying the strength of the relation.



Strategic initiatives

-  **Taiao | Nature**
-  Te Wai o te Puhinui | Waters of Te Puhinui
-  Te Ngahere o Te Puhinui | Te Puhinui Forest
-  Te Kaitiakitanga me te Tiakitanga o Te Puhinui | Te Puhinui Stewardship
-  Te Maaramatanga o Te Puhinui | Te Puhinui Innate Wisdom
-  Te Puungao o Te Puhinui | Te Puhinui Energy strategy
-  **Tangata | People**
-  Te Mana Whakahaere o Te Puhinui | Te Puhinui Governance
-  Te Puhinui Identity
-  Te Puhinui Living Lab
-  Te Puhinui Empowered Communities
-  Te Whanaketanga Oohanga o Te Puhinui | Te Puhinui Economic Development
-  **Whenua | Place**
-  Ngaa Tohu o Te Puhinui | Symbols of Te Puhinui
-  Te Puhinui Food Sovereignty
-  Te Para Kore i Te Puhinui | Te Puhinui Zero Waste Systems
-  Restructuring Te Puhinui Built Environment
-  Ngaa Ara o Te Puhinui | Te Puhinui Pathways

Taiao | Nature



Taiao/nature refers to the environmental and ecological foundations of Te Puhinui. It recognises the ability and capacity of nature to sustain and maintain whole living systems and regenerate its own mauri, while contributing to the mauri of people and land.



Te Wai o Te Puhinui Waters of Te Puhinui

Create a whole-of-catchment integrated design and management approach to wai/water which regenerates the mauri/life force of Te Puhinui and accommodates and maintains the natural drainage patterns of the area, reduces run-off, improves water quality and supports and restores the hydrological function of the awa/stream and associated ecosystems, extending out toward the whole living system of Te Maanuka / Manukau Harbour.

SUB-INITIATIVES

- Catchment-wide Stream Restoration
- Daylight and Naturalise Overland Flow Paths
- Permeable Areas and Infiltration
- Reinstate Floodplains
- Strategic Infrastructure Renewal
- Blue Green Industry



Te Ngahere o Te Puhinui Te Puhinui Forest

Develop a ngahere/forest made up of corridors and patches to provide a minimum of 30 per cent vegetation cover across Puhinui Catchment including wetlands, waterways and tall woody vegetation in streets, parks and open spaces to protect and maintain existing healthy ecosystems and restore historic environmental degradation.

SUB-INITIATIVES

- Healthy Stream Corridors
- Forest Patches
- Canopy Cover in Urban Areas
- Coastal Forest Enhancement
- Te Puhinui Nursery
- Pest-free Te Puhinui



Te Kaitiakitanga me te Tiakitanga o Te Puhinui Te Puhinui Guardianship and Stewardship

Support the people of Te Puhinui to play an active role in the care, protection, restoration and regeneration of their environment, recognising the role of mana whenua as direct descendants and kaitiaki of Te Puhinui and ensuring intergenerational transfer of customary wisdom and understanding.

SUB-INITIATIVES

- Te Waiohua Kaitiakitanga
- Te Roopuu Tiaki i Te Puhinui | Friends of Puhinui
- Te Puhinui Business Responsibility Initiative



Te Maaramatanga o Te Puhinui Te Puhinui Innate Wisdom

Acknowledge and work with the natural world and Te Puhinui as holders of place sourced knowledge and wisdom to reinvigorate, celebrate and affirm Te Puhinui as a living organism and actively apply this knowledge to its regeneration.

SUB-INITIATIVES

- Te Maramataka o Te Waiohua | Te Waiohua Lunar Cycles
- Te Reo Waiohua Strategy | Te Waiohua Language Strategy



Te Puungao o Te Puhinui Te Puhinui Energy Strategy

Promote and support Te Puhinui energy transition from a non-renewable carbon intensive energy network towards a renewable energy network.

SUB-INITIATIVES

- Warm Healthy Homes
- Te Puhinui Energy Use and Efficiency Strategy
- Te Puhinui Energy Production and Storage
- Low-carbon Transport

Environmental foundations

Puhinui Catchment and Stream

Puhinui Catchment covers approximately 2,964 hectares. Topographically, it is characterised by low lying, gently rolling terrain in the lower catchment and steeper incised gullies in the upper catchment where it drops steeply down through Tootara Park and the Auckland Botanic Gardens before flattening out to a broad middle and lower catchment. The top of Puhinui Catchment is located 170m above sea level and 10km east of the coastal edge and mouth of Puhinui Stream.

The topography of the Puhinui Catchment and stream, including natural channels and floodplains, has been modified significantly by urbanisation. In particular, the construction of two state highways and the leveling of land for the urban and industrial areas through the middle of the catchment. Significant areas of the catchment are now paved and piped causing significant loss of ecological, recreational and amenity values¹. Until recently the stream was renowned for its poor water quality - a neglected space used predominantly as a place to discard waste and contaminants from stormwater run-off².

Geology

The oldest areas of the Manukau Harbour catchment are located in the foothills east of Papakura and date back to the origins of the New Zealand land mass over 100 million years ago. Approximately 22 million years ago, Auckland began to subside into the Waitemata Basin and sediment eroding from the landmass was deposited on the seafloor. At the same time, volcanism to the west of

the subsiding basin began and remnants of these old volcanoes now form the Waitaakere Ranges at the northern headland of the Manukau Harbour.

As the subduction zone migrated south, so too did the volcanism which began on the Coromandel Peninsula approximately 18 million years ago. Subduction then ceased and by about 16 million years ago the Waitemata Basin had been uplifted to form the cliffs along the northern edge of the Manukau Harbour and the land in the upper Puhinui Catchment. From about 2 million years ago, sediment from the Taupoo Volcanic Zone flowed through the ancestral Waipa River to be deposited to the west coast and onto the Manukau lowlands, creating the highly fertile soils over the lower catchment of Te Puhinui. At the coast, currents transported sand northwards to form the Awhitu Peninsula which encloses Manukau Harbour from the sea.

Approximately 35,000 years ago the Auckland Volcanic Field became active and is a defining characteristic of the Auckland Isthmus and surrounding areas. The volcanic field includes over 50 volcanoes, three of which are located in Puhinui Catchment - Matukutuururu, Matukutuureia and Ash Hill. Matukutuururu and Matukutuureia, collectively known as Ngaa Matukurua, erupted approximately 30,000 to 35,000 years ago. Matukutuururu once had a scoria cone 80m high before being quarried to its current height of 45m. The lava flows from its formation created Wiri Lava Cave, Auckland's longest known lava cave. Matukutuureia's original peak was 73m but has been quarried to a small pyramid-shaped mound. The eastern side of the

cone and large area of lava flow to the south remain un-quarried and form the foundations of the culturally significant Matukuturua Stonefields gardens. Ash Hill was first recognised as a volcano in 1961 and has no known Maaori name. Prior to the eruption of the volcanic cones, it is likely that Puhinui Stream would have been more like an estuary than a stream.

Climate

Te Puhinui has a subtropical climate, with warm humid summers and mild winters with few frosts. It receives approximately 2000 sunshine hours per year and has an average temperature range of 12 to 19°. The prevailing winds come from the southwest, particularly in winter and spring. Southwesterlies during the winter produce cloudy, showery weather whereas southwesterlies in summer are frequently fine. Sea breezes on fine days are frequent between November and March. Strong gusty westerlies which may be accompanied by thunderstorms are most likely to occur in winter and spring.

The median annual rainfall is approximately 1200mm. Rainfall in Auckland ranges from 1000mm to 2200mm. Rainfall is relatively consistent through the year with around 32 per cent of annual rainfall expected from June to August and around 20 per cent of rain in the summer months from December to February. While Puhinui experiences flooding infrequently and there are some properties at risk of flooding during larger rain events.

As a result of a changing climate, Puhinui will get drier overall, but when it does rain it will be heavier. It will be warmer, particularly in built-

up and paved areas, which will be subject to the urban heat island effect. Depending on the extent of inundation, approximately 90ha of low lying land in Te Puhinui Reserve along the coastal edge and around the mouth of Puhinui Stream and estuary is at risk of coastal inundation over the next 100 years.

Soils

Puhinui Catchment is composed of three different types of soil. Waitemata residual soils are the oldest, and are located in the upper catchment. They were developed on the sedimentary rocks that were deposited into what is now the Manukau Harbour as run-off from the Waitakere Arc, the origins of the Waitakere ranges, and are made up of sandstone and mudstone with variable volcanic content and interbedded volcanoclastic grits. The Alluvial soils are a highly fertile soil mantle located in the middle and lower catchment of Te Puhinui. They are made up of fine-grained fertile soil deposited by the Waikato River when it flowed through the Manukau lowlands toward the Kaipara Harbour. The Isthmus Volcanic Soils correspond to the lava, scoria and lithic tuff geology of the three volcanic cones of Puhinui Catchment and Ash Hill. This soil is often rich in nutrients and holds water well because of the volcanic ash content. This is a relatively young soil, building on the 30,000 to 35,000 years old volcanic activity and is likely to be acidic as a result.

Puhinui Catchment has some of the country's most productive soils suitable for a wide range of uses including cultivated cropping, vineyards and berry fields, pasture, tree crops or production forestry.

1. <https://www.health.govt.nz/system/files/documents/pages/manukau-hia-2009-report-part5.pdf>
2. Krpo, Ana. GIS model for assessment of land use and urban development effects on stormwater runoff: Puhinui Catchment case study. AUT, 2004

Environmental foundations

The Waitemataa residual and Alluvial soils, which make up the majority of soils in Puhinui Catchment, have limited drainage capacity and are not suitable for stormwater soakage. Stormwater management practices where disposal by soakage is not available require above ground or piped conveyance systems with water sensitive design treatment devices, integrating vegetation where possible and other measures such as hydrology mitigation, stream bank shaping and strengthening to reduce the risk of stream-bank erosion. While soakage systems will not typically dispose of all stormwater for a 1 in 10 year event, infiltration of stormwater to ground is generally possible in Auckland soils, even where infiltration rates are low, to reduce stormwater volumes, contribute to contaminant removal, and recharge ground water, base flow and inter flow of streams and waterways.

While the underlying soil of Te Puhinui was once highly fertile, the reality is that a majority of the soils in the catchment are now highly modified and much of it has been paved over. The Waitemataa residual soils in the upper catchment, which are characterised by fine clays are highly vulnerable to degradation through compaction, are challenging to rehabilitate, and take many years to recover naturally. The fine clays are susceptible to erosion and contribute to the sedimentation of wetland and estuarine environments³.

Water

There are three streams in Puhinui Catchment - Puhinui Stream, Homai Stream and Blackgate Reserve Stream. They are all heavily modified, either channelised, straightened for conveyance and lined with

concrete to prevent erosion or constrained significantly by commercial and industrial developments. Several erosion ‘hotspots’ have been identified near stormwater pipe outlets draining commercial and industrial land as well as in bush fragments with poor bank vegetation in the upper catchment.

Puhinui Stream is typically soft-bottomed, made up of gravel, sand and mud. Prior to deforestation, the stream would have meandered across the land. Once tree coverage was removed the stream became more incised and the alignment became more fixed. This process contributed significantly to sedimentation of Te Puhinui Estuary and Manukau Harbour.

In a typical catchment, an overall reduction of stream and wetland health - as measured by criteria such as pollutant loads, habitat quality and aquatic species abundance and diversity - begins when 10 per cent of a water catchment is covered with impervious surfaces. With impervious coverage of more than 30 per cent of a water catchment, impacts become severe and degradation is almost unavoidable. Currently 29 per cent of Puhinui Catchment is impervious and this is expected to increase to approximately 44 per cent once the development outcomes sought in the Auckland Unitary Plan and Manukau Framework Plan are achieved.

Approximately 20 per cent of Puhinui Catchment is subject to flooding and represents a significant health and safety risk to people and property, particularly access issues for residents with reduced mobility. There are over 2000 buildings in Puhinui Catchment located within the floodplain. While

the majority of these have their floor levels above predicted flood levels, approximately 123 residential and commercial properties in the catchment are predicted to be under water during large storm events (1 in 100 year storm). It is estimated that this number will increase to 203 with continued urbanisation and the ongoing effects of a changing climate.

Water quality can be measured by the contaminant loads present in water flowing in the stream and in the estuarine sediments. These include sedimentation, nutrients, heavy metals, hydrocarbons and petrochemicals, pesticides, temperature and organic contaminants. Sedimentation alters estuarine muddiness, which at very subtle levels, impacts nutrient availability and habitat for the entire food chain, including fish nurseries. Contaminants such as zinc and microplastics accumulate in the estuarine mud and are known to reduce species resilience. Aquatic ecosystems are very sensitive to water quality changes. In 2016, Land, Air, Water, Aotearoa assessed Puhinui Stream as ‘poor - making it unsuitable for contact recreation’. The report also indicates the Macroinvertebrate Community Index (MCI) has a ‘likely improving’ trend.

A significant portion of the catchment, approximately 1370 ha or 46 per cent of the catchment, currently drains via a network of publicly and privately owned constructed ponds and wetlands, providing treatment and/or detention to run-off entering the stream. The performance of these devices will be included in a region-wide initiative to model contaminant loads and optimal devices in the lead up to full implementation of the National Policy Statement for Freshwater

Management.

Ecology

Puhinui Catchment was once home to six distinct ecosystems. These can be described as three broad ecosystem types: inland forests, coastal ecosystems and stream and aquatic habitats.

The ecosystems of Puhinui have been significantly modified. With an average canopy cover of between 9 to 15 per cent, Puhinui Catchment has some of the lowest canopy cover in the region. The remaining forest cover remains fragmented and isolated and is mainly composed of exotic species.

Mangrove forests are the only ecosystem type in Te Puhinui that are not endangered or critically endangered.

With the exception of the patches of forest in the Botanic Gardens, Tootara Park, David Nathan Park and along the coastal edge and inner harbour around Puhinui Reserve, Puhinui is an urban ecology. The remaining patches of indigenous ecosystems are under threat due to the pressures of urbanisation and the associated stresses of habitat loss, mammalian pests, competition from noxious plants and kauri dieback. These stresses are likely to be exacerbated by intensification of the catchment and a changing climate.

Notwithstanding, Puhinui is still home to a variety of coastal and forest birds as well as a wide range of insects, spiders and other invertebrates, frogs, skinks and geckos, fish and eels and even bats native to the area. Due to the significant urbanisation of Te

Environmental foundations

Puhinui, it is also home to a wide range of introduced plant and animal species. Exotic plants include easily recognisable species such as pine, macrocarpa, eucalyptus, pampas grass, blue convolvulus, japanese honeysuckle, jasmine, mothplant, onion weed and tradescantia. Exotic animals include dogs, cats, and pest species such as rats, feral cats, stoats, rabbits, hedgehogs, possums and wasps.

As much as we may wish to do so, we can not re-create the ecosystems of the past. As well as being an urban ecology, Te Puhinui is a ‘novel ecosystem’ composed of a unique collection of species that include both exotic and native species that result from human activity and influence but are often not directly or consciously managed by people.

Taamaki Makaurau is a temperate rainforest and the tendency of Puhinui Catchment is to ‘succeed’ from the current state toward a forested landscape - this is nature’s response to disturbance. Whether it is planned or not, as Te Puhinui continues to revert to a forested landscape, new and novel ecosystems will emerge that will create communities of plants and animals that have never coexisted before. These new communities will provide the genetic material for the ecosystems of the future. While the catchment cannot be revegetated to replicate an historic ecosystem; patches of native vegetation and natural stormwater devices in parks and opens spaces, reserves, streets, roads, schools and backyards provide opportunities for ‘novel urban ecologies’ to emerge throughout the catchment and integrate with the built fabric in a way that reflects the older and deeper patterns of Te Puhinui.

New Zealand greenhouse gases⁴

In 2018 New Zealand generated 78.9 million tonnes of greenhouse gases. This was 24 per cent more than 1990 and 1 per cent lower than 2017. During 2018, gross emissions were primarily made up of carbon dioxide, 44.5 per cent; methane, 43.5 per cent and nitrous oxide 6.6 per cent.

Emissions from transport were up 2.3 per cent from 2017 and up 89.7 per cent from 1990. Transport emissions were mainly made up by road vehicle emissions, 90.7 per cent; and domestic aviation, 6.7 per cent. Transport also produces the majority of carbon dioxide emissions, producing 47 per cent of New Zealand’s total carbon dioxide emissions and manufacturing industries and construction made up 17.9 per cent and public electricity and heat production generated 9.4 per cent. The net uptake of carbon dioxide from the atmosphere by land use, land-use change and forestry was 17.6 per cent lower than 1990 due to higher harvesting rates of planted forests.

While road transport only accounts for approximately 20 per cent of New Zealand’s total greenhouse gas emissions, Te Puhinui is primarily an urban catchment with limited agriculture activity. The proportion of greenhouse gases produced from transport in Te Puhinui is therefore likely to be higher than the national average.

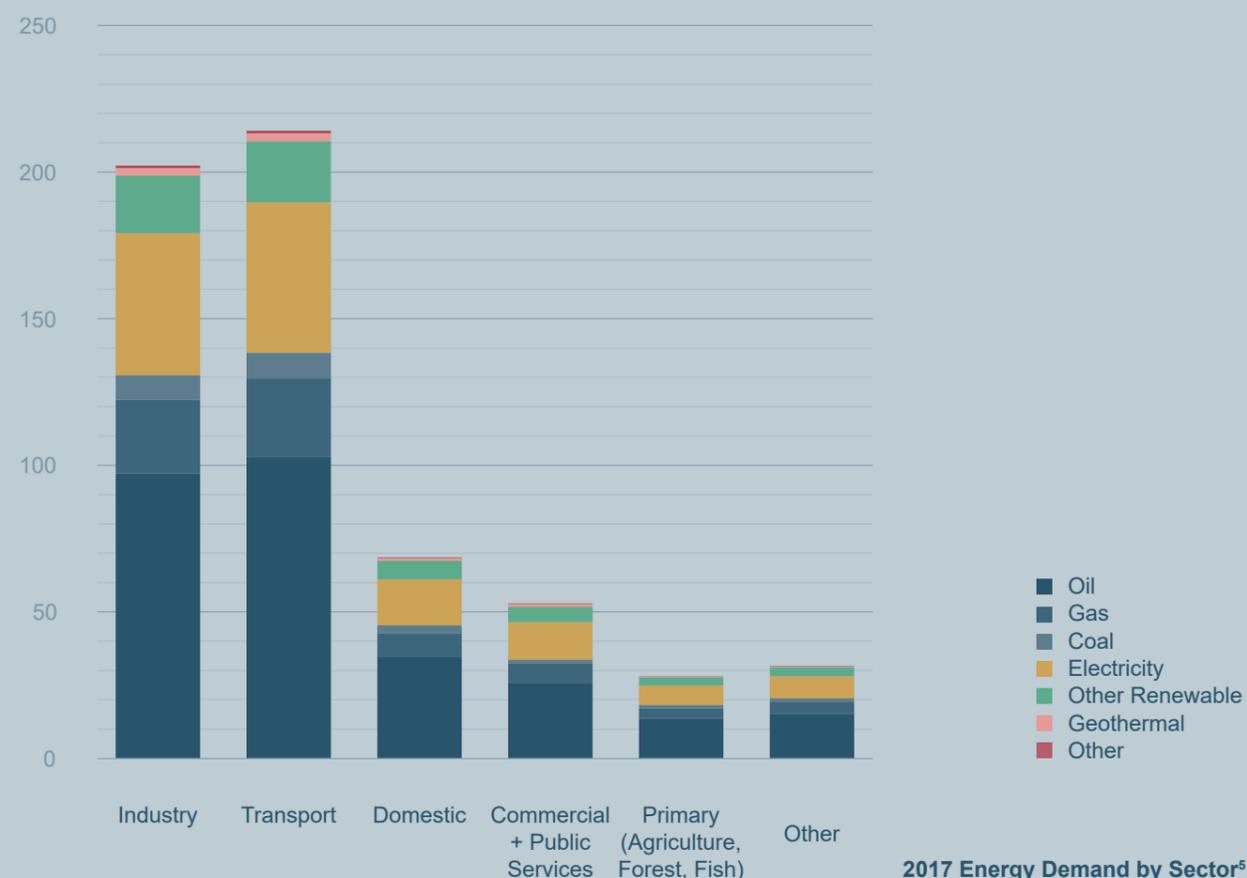
Energy

While there is a significant amount of data available for energy demand by sector and type at a national level, there is limited data available for local energy use. While this

information can not be extrapolated down to represent the energy use in Te Puhinui specifically, it does provide a high-level overview of the energy mix.

New Zealand is a net energy importer with approximately 60 per cent of New Zealand’s energy coming from fossil hydrocarbons and 40 per cent was from renewable sources. Energy dependency on non-renewable sources of energy leaves the economy and its communities vulnerable to changing market conditions and the inevitable reduction in availability once stocks of non-renewable resources start to dwindle.

Residential buildings account for approximately one-third of all of New Zealand’s electricity use. Cold, damp homes also contribute significantly toward respiratory issues and other preventable health conditions including rheumatic fever and skin infections. Improving the energy efficiency of residential buildings presents a significant opportunity for reducing New Zealand’s overall energy demand and there is strong evidence, nationally and internationally, of improved health outcomes resulting from warmer and drier homes.



4. <https://www.stats.govt.nz/indicators/new-zealands-greenhouse-gas-emissions>
 5. <https://www.mbie.govt.nz/dmsdocument/11679-energy-in-new-zealand-2018>

Environmental foundations



Environmental constraints and challenges

Constraints and challenges are not ‘bad’ in and of themselves, but represent characteristics intrinsic to Te Puhinui that need to be acknowledged, understood and reframed as parameters and/or opportunities that help to determine the scope and scale of any proposal for Te Puhinui.

A constraint typically represents a non-negotiable condition that can not be ‘solved’ and must be worked with, whereas a challenge is a parameter that can be managed or overcome and, in some instances, reconciling forces can reframe problems into solutions.



Poor water quality

- In 2010, Puhinui Stream was considered the dirtiest of all 31 streams monitored by Auckland Regional Council.
- The water quality is degraded by run-off from streets and car parks, illegal outfalls and dumping directly into the stream and rubbish from surrounding properties that regularly ends up in the stream.
- The catchment suffers from acute industrial pollution, contributing to diminishing fish populations.
- Sedimentation, contaminants, pollutants and nitrification are ongoing issues.



Flooding

- Urbanisation in floodplains has encroached on natural hydrological processes.
- Urban development within floodplains results in flooding of urban areas during large rain events. About 20 per cent of the catchment is subjected to flooding, mainly in the industrial and urban areas.
- Urbanisation accentuates flooding during large rain events.
- Flooding represents a significant health and safety risk to people and property, particularly access for vulnerable residents.
- There are over 2000 buildings in Puhinui Catchment located within the floodplain. Approximately 123 of these are predicted to be under water during large storm events (1 in 100 year storm) and it estimated that this number would increase to 203 with continued urbanisation and the ongoing effects of a changing climate.
- Large flooding events re-suspends toxins from historic urban and industrial activities.
- Currently 29 per cent of the catchment is impervious and this is expected to increase to approximately 44 per cent once the development outcomes sought in the Auckland Unitary Plan and Manukau Framework Plan are achieved.



Degraded stream environment

- Long sections of Puhinui Stream and most of Blackgate Reserve Stream are concreted (over 1.5 km of Puhinui and 770 m of Blackgate Reserve Stream), resulting in low friction stream channels.
- There are extensive areas of high erosion.
- Several properties adjacent to the stream are not maintained, impacting on the stream environment, particularly in residential and industrial areas.
- Unless mitigated, current and future urban development will continue to have a negative impact on the stream, through increased run-off and contaminant loads.
- The health of the stream impacts the physical and spiritual health of people.



Degraded aquatic environment

- Limited vegetation along the stream, especially in the urban area, provide limited shade, and increase water temperature and intermittent connectivity.
- Sedimentation, contaminants, pollutants and nitrification are ongoing issues.
- Reduction of base flows in headwaters through imperviousness.
- Concrete channels limit range and types for habitats within the streams.



Fragmented ecology and threatened and at risk biodiversity

- Areas of ecological habitat are fragmented throughout the catchment and provide limited ecological connectivity/wildlife corridors and patches between the top and bottom of the catchment and to adjacent areas.
- There is limited habitat for threatened and at risk species.
- Ongoing urbanisation threatens areas of ecological value.
- The catchment consists of low native biodiversity and is dominated by exotic plant and animal species which can outcompete indigenous species.



Climate change

- Puhinui Reserve and estuary environments face coastal inundation due to sea level rise.
- Increased frequency and intensity of storm events is likely to increase flooding in the catchment.
- The urbanisation of the catchment provides very little shade and relief against urban heat island effect.
- Puhinui is likely to experience less rainfall overall and more acute droughts.



Inefficient energy use

- The urban form of the catchment and the lack of efficient public transport encourages the use of private cars and creates a fossil fuel dependency.
- Approximately 60 per cent of energy supply in New Zealand is fossil fuel¹.
- There is no coordinated energy production or storage within the catchment area for local supply².
- The buildings of Puhinui Catchment are not designed to be energy efficient.
- Transport contributes to 39 per cent of the greenhouse gas emissions³.

1. https://en.m.wikipedia.org/wiki/Energy_in_New_Zealand#/media/File%3ANZPrimaryEnergy2014

2. Wiri Oil Depot functions as a regional and national storage facility, not a local one.

3. <http://www.aucklandcouncil.govt.nz/>

Environmental opportunities

An opportunity can serve as a catalyst for a project or may help to leverage other related projects. An opportunity may be inherent to the existing condition, or manifested by reframing a challenge as an opportunity for action.



Integrate water systems through the urban environment

- Reduce sedimentation, contaminants, pollutants and nitrification loads on stream through implementation of water sensitive design in streets, parks and buildings.
- Go beyond best practice standards for water sensitive design.



Reinstate the catchment's natural hydrological processes and function

- Where possible, reinstate flood plains.
- Remove/consolidate excessive impervious surfaces throughout the catchment.
- Remove concrete channel lining from stream and daylight and naturalise overland flow paths.
- Go beyond best practice in development to retain streams and maintain base flow.



Stream restoration

- Re-naturalise stream and integrate erosion mitigation.
- Plant riparian networks and create a continuous green corridor along the lengths of all streams.
- Increase canopy cover and shade over the stream.



Maintain and enhance habitat and threatened and at-risk biodiversity

- Create ecological corridors along waterways and streets.
- Reinstate endemic ecosystems.
- Maintain and enhance existing habitat for threatened and at-risk species.
- Celebrate endemic wildlife.
- Implement a network of patches and corridors of native vegetation and tall woody species to create a self-sustaining network of indigenous vegetation and habitat.
- Extend and establish areas of native vegetation to provide an ecological corridor and stepping stones to reconnect the upper and lower catchment and improve species' movement through the catchment.



Maximise extensive areas of publicly owned land

- Majority of land in and around Manukau Central, and greenfield areas in the lower catchment are owned by Auckland Council (95ha) and crown agencies (100ha).
- Significant opportunities to improve urban form through integrated land use, human-scale community development and repurposing of land for ecological, socio-cultural and economic well-being outcomes through wider Kāinga Ora and Eke Panuku urban regeneration programmes.

Te Wai o Te Puhinui

Waters of Te Puhinui



Create a whole-of-catchment integrated design and management approach to wai/water which regenerates the mauri/life force of Te Puhinui and accommodates and maintains the natural drainage patterns of the area, reduces run-off, improves water quality and supports and restores the hydrological function of the awa/stream and associated ecosystems, extending out toward the whole living system of Te Maanuka / Manukau Harbour.

**This initiative aligns with and supports Te Puhinui Stormwater Management Plan (SMP) 2021.*

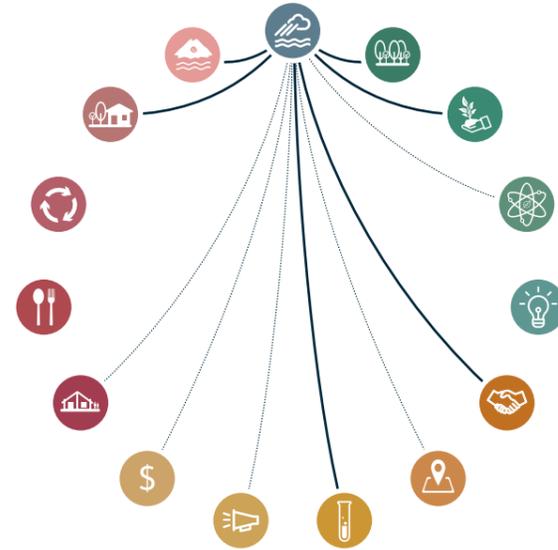
SUB-INITIATIVES

1. Catchment-wide Stream Restoration
2. Daylight and Naturalise Overland Flow Paths
3. Permeable Areas and Infiltration
4. Reinstate Floodplains
5. Strategic Infrastructure Renewal
6. Blue Green Industry

Relationship to other documents

- Te Puhinui Stormwater Management Plan (SMP) 2021
- Healthy Waters Strategic Direction and Healthy Waters Our Water Future
- The National Policy Statement for Freshwater Management 2020
- Water Sensitive Design for Stormwater - Guideline Document 2015/004
- Auckland Design Manual
- Te Tāruke-a-Tāwhiri: Auckland's Climate Plan

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership** and decision-making sub-initiative as political will and financial investment are required to realise this initiative.

 This initiative has a strong synergistic relationship with **te Ngahere o Te Puhinui / Te Puhinui Forest**. This coupling is often referred to as the blue and green networks of place. Given the interconnectedness of terrestrial and freshwater ecologies a healthy functional Te Puhinui environment requires restoration and regeneration of both systems. Reducing erosion and stabilising stream edges involves riparian planting and the reshaping of the stream bed needs to occur in parallel with riparian planting.

 Restructure **Te Puhinui Built Environment** is synergistic with this initiative and as much as possible many of these sub-initiatives should be considered and delivered in parallel with many of the Restructure sub-initiatives. Align new streets with natural drainage patterns to allow for easy integration of water sensitive design features into the street network.

 **Te Kaitiakitanga me te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** is synergistic and amplified by this initiative. Local participation in restoration efforts and environmental action will maximise investments made by agencies and developers towards

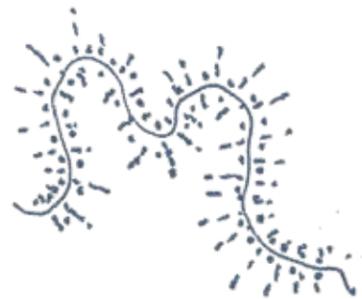
stream upgrades and freshwater outcomes by supporting on-the-ground stewardship including planting, monitoring and maintenance.

 **Te Puhinui Living Lab** amplifies this initiative by providing the structure, platform and operational means to monitor and evaluate improvements in ecosystem health, hydrological functions and water quality over time. It provides quality data to support ongoing learning and adaptive management to ensure the best possible outcomes for the waters of Te Puhinui and its people.

 **Ngaa Ara o Te Puhinui / Te Puhinui Pathways** is a synergistic initiative and both of these initiatives have the ability to leverage off each other. For example, creating a contiguous pathway for people from the top of the catchment to the Manukau Harbour should be developed in parallel with major stream restoration and infrastructure projects. Improvements in the stream environment for water quality outcomes will also encourage people to want to access it and enjoy the increased connectedness created through pathways to the stream and within the catchment.

Te Wai o Te Puhinui | *Waters of Te Puhinui*

1. Catchment-wide Stream Restoration



Protect and enhance permanent and intermittent streams within the catchment to improve bank stability and habitat.

Design Guidelines

- Embed a place sourced ecological design approach within all local projects, ensuring that a deep understanding of Te Puhinui is reflected in our actions, designs and resulting infrastructure.
- Reinstate and expand riparian corridors with extensive native riparian planting to stabilise banks, shade streams and to create continuous ecological corridors. See Appendix B for Plants for Regenerating Te Puhinui.
- Reshape and stabilise banks for those sections of the stream that still have unaltered profiles.
- 'Dechannelize' streams by removing concrete lining and reinstating naturalised streams and reinstate naturalised water courses in a way that also responds to and integrates with adjacent development patterns and forms.
- Daylight outlets to existing streams to create small tributaries or vegetated swales to reduce water velocities below erosion thresholds.
- Do not reduce or remove existing naturalised stream sections.
- Remove fish passage barriers and enhance fish passage where opportunities exist.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Aho/Thread



Taiao | Nature

Parent Initiative



Te Wai o Te Puhinui
Waters of Te Puhinui

Next steps

Investigation Required:

- * fieldwork and modelling is required to determine extent and scale of physical work. Refer to Watercourse Assessment Report 2017 and Stormwater Management Plan 2021.
- Technical guidance TP148 is currently under review and does not as yet address channel re-shaping. National guidance for stream naturalisation is in the early stage of development.
- Establish immediate riparian planting opportunities and seek funding partnerships to realise (ie Million Metres, Vector Sponsorship).
- Seek de-channelisation opportunities and funding through proposed development programmes.

Te Wai o Te Puhinui | *Waters of Te Puhinui*

2. Daylight and Naturalise Overland Flow Paths



Identify and restore overland flow paths and the natural flow regime of the hydrological network to improve ground water recharge, reduce peak stormwater run-off and flood risk, and create opportunities for ecological enhancement.

Design Guidelines

- Embed a place sourced ecological design approach within all local projects, ensuring that a deep understanding of Te Puhinui is reflected in our actions, designs and resulting infrastructure.
- Reinstate overland flow paths and daylight the pipe network wherever practicable as part of a water sensitive design approach.
- Identify, enhance and protect existing overland flow paths.
- Align new streets with natural drainage patterns to allow for easy integration of water sensitive design features into the street network.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Next steps

- Ongoing coordination with Healthy Waters, Auckland Transport and development partners to advocate and implement as and where development occurs, as guided by the Stormwater Management Plan.
- Explore opportunities within Kāinga Ora land holdings.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Wai o Te Puhinui
Waters of Te Puhinui

Te Wai o Te Puhinui | *Waters of Te Puhinui*

3. Permeable Areas and Infiltration



As urban development continues, where possible maximise permeable areas and infiltration of stormwater to increase ground water recharge and improve the base flow of streams.

Design Guidelines

- Where possible reduce existing impervious surface through water sensitive development layout and redevelopment.
- All new development to accommodate areas of natural ground for infiltration.
- Apply 'at source' bio-infiltration measures in well drained volcanic field soils, unless site specific testing demonstrates this is not practicable.
- Where reduction of impervious surfaces is not practical, disconnect impervious surfaces from the receiving environment and direct the run-off into bio-infiltration and bio-filtration devices.
- Use and upgrade existing communal infiltration devices and implement new communal devices to manage existing and proposed development areas.
- Explore opportunities to remove redundant or excessive impermeable surfaces in the catchment.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Next steps

- Infiltration testing within parts of the catchment being redeveloped to determine the ability to achieve Stormwater volume loss (retention) as a part of hydrological mitigation.
- Work with Healthy Waters and Kāinga Ora in alignment with the Stormwater Management Plan to seek ways to promote, enforce and monitor the reduction of impervious surfaces.

Aho/Thread



Taiao | *Nature*

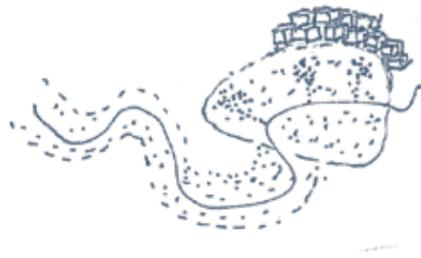
Parent Initiative



Te Wai o Te Puhinui
Waters of Te Puhinui

Te Wai o Te Puhinui | *Waters of Te Puhinui*

4. Reinstatement Floodplains



Where possible reinstate and enhance natural drainage patterns to improve ground water recharge, reduce peak stormwater run-off and flood risk and create opportunities for ecological enhancement.

Design Guidelines

- Ensure natural drainage patterns of the area are maintained and protected as part of all development proposals.
- Locate all new residential and commercial buildings outside of the floodplain and coastal inundation areas in accordance with the Auckland Unitary Plan.
- Identify natural low points and utilise these areas for water sensitive design devices.
- Where practical, utilise public spaces with flood resilient activities such as parkland open space, walkways and sports fields to act as temporary detention basins in flood events.
- Ensure that the number, location and design of stream crossings minimise potential impact on natural flooding processes.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Next steps

- Further flood modelling to investigate mitigation options and determine a preferred solution.
- Site investigations at the District Health Board site to determine the potential to construct a water quality wetland.
- Ongoing coordination with Healthy Waters to ensure future developments comply.

Aho/Thread



Taiao | *Nature*

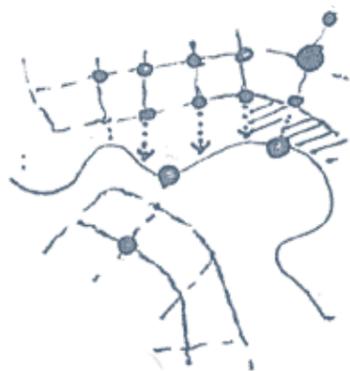
Parent Initiative



Te Wai o Te Puhinui
Waters of Te Puhinui

Te Wai o Te Puhinui | Waters of Te Puhinui

5. Strategic Infrastructure Renewal



Assess, prioritise and target upgrades and renewals of existing stream and stormwater assets to increase capacity of the network, improve water quality, enhance ecosystem health, and reduce the fossil carbon intensity of maintenance practices.

Design Guidelines

- Continue to prioritise the assessment of higher risk pipes in order to prioritise stream daylighting and naturalisation.
- Seek opportunities through existing, proposed and future projects to enhance existing assets to achieve better water quality outcome. For example, streetscapes, open spaces, carparks to become part of an integrated water sensitive design network.
- Match treatment regime to contaminant profile to ensure the 'right device in right place'.
- Work with Ootara-Papatoetoe Local Board to incorporate the principles and strategies outlined in the Neat Streets Project.
- Where possible, integrate water sensitive design features into existing and new development including but not limited to:
 - Paint roofs to reduce zinc leachate,
 - Integrate rain gardens into parking lots and large paved areas,
 - Install proprietary treatment devices on down pipes, and
 - Living roofs.
- Work towards the elimination of fertilisers, herbicides, pesticides and fungicides derived from petro-chemicals for ongoing maintenance.
- Where practicable, reduce dependency and use of fossil fuel powered tools and equipment for ongoing maintenance.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Next steps

- Determine network capacity and constraints in accordance with the requirements set out in Schedule 4 of the Regional Stormwater Network Discharge Consent and the Auckland Council Codes of Practice.
- More detailed investigation of the existing private assets in the middle and lower catchment is required.

Aho/Thread



Taiao | Nature

Parent Initiative



Te Wai o Te Puhinui
Waters of Te Puhinui

Te Wai o Te Puhinui | *Waters of Te Puhinui*

6. Blue Green Industry



Integrate water sensitive design throughout existing industrial areas to filter contaminants, reduce run-off, improve amenity and create habitat.

Design Guidelines

- Encourage living roofs for areas with extensive roof coverage and high volumes and stormwater run-off.
- Integrate bio-filtration and water quality devices to intercept run-off from impervious surfaces before entering receiving environments.
- Install gross pollutant traps for run-off from commercial/industrial waste storage/handling or loading/unloading treatment areas.
- Integrate rainwater harvesting devices for use and reuse of water inside buildings and to irrigate gardens and landscapes.
- Seek opportunities for raising industry awareness and education around the catchment and water cycle.
- Install water-efficient devices and appliances including low-flow toilets, showerheads and faucets to assist with the efficient use of water.
- Refer to Te Puhinui Stormwater Management Plan (SMP) 2021 for further design guidance.

Next steps

- Advocate for water sensitive design and green roofs through the Business Responsibility Initiative.
- Map areas of existing/ proposed industrial rooftops in the catchment.
- Obtain modelled contaminant load outputs from the Freshwater Management Tool and compare them to the National Bottom Lines set out in the National Policy Statement for Freshwater Management.

Aho/Thread



Taiao | *Nature*

Parent Initiative



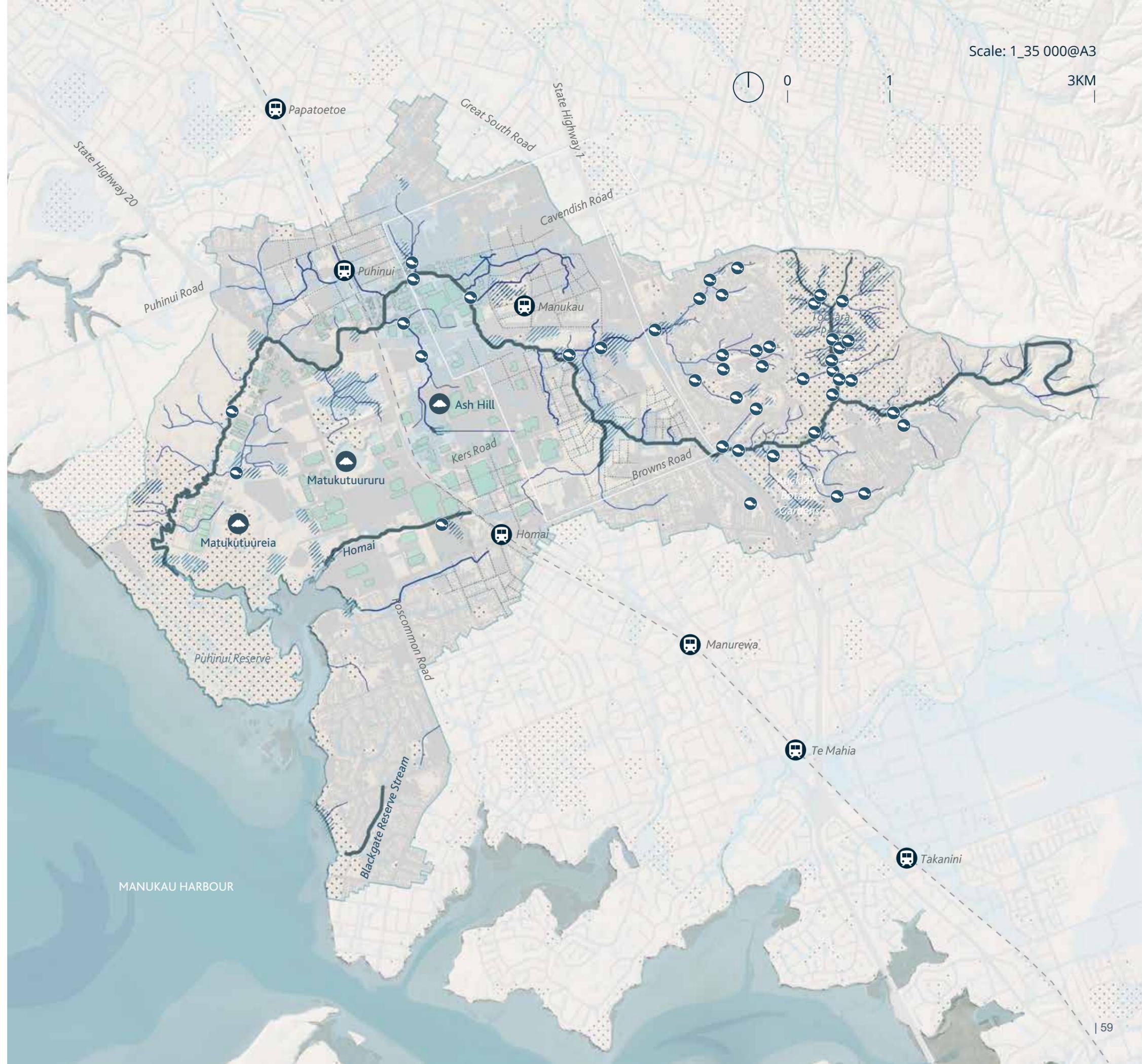
Te Wai o Te Puhinui
Waters of Te Puhinui

Te Wai o Te Puhinui Waters of Te Puhinui



KEY

- Catchment boundary
- Transform Manukau
- 1. Catchment-wide Stream Restoration**
 - Protect and enhance streams within the catchment to improve bank stability and habitat
 - Existing barriers to fish passage to be removed
- 2. Daylight and Naturalise Overland Flow Paths**
 - Identify and restore the natural flow regime of the stream network
- 3. Maximise Permeable Areas and Infiltration**
 - Existing impervious surfaces
- 4. Reinststate Floodplains and Allow for Flooding**
 - Wetland integration opportunities (*Further investigation required*)
 - Existing floodplains
- 5. Strategic Infrastructure Renewal**
 - Open space network
 - Streetscapes within areas undergoing significant transformation (*Further investigation required*)
- 6. Blue Green Industry**
 - Potential green roofs (*Further investigation required*)



Te Ngahere o Te Puhinui

Te Puhinui Forest



Develop a ngahere/forest made up of corridors and patches to provide a minimum of 30 per cent vegetation cover across Puhinui Catchment including wetlands, waterways and tall woody vegetation in streets, parks and open spaces to protect and maintain existing healthy ecosystems and restore historic environmental degradation.

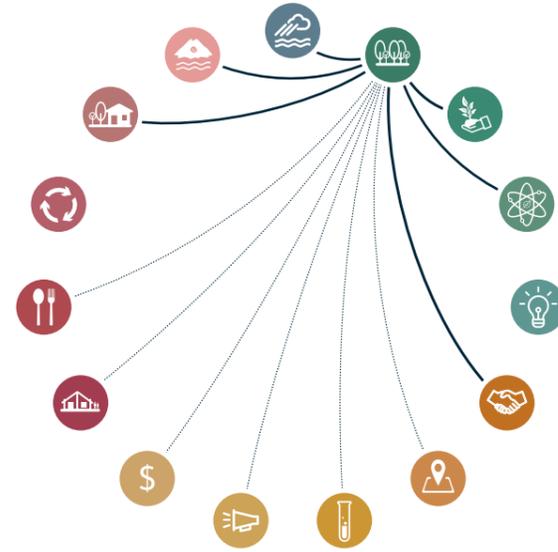
SUB-INITIATIVES

1. *Healthy Stream Corridors*
2. *Forest Patches*
3. *Canopy Cover in Urban Areas*
4. *Coastal Forest Enhancement*
5. *Te Puhinui Nursery*
6. *Pest-free Te Puhinui*

Relationship to other documents

- *Draft National Policy Statement for Indigenous Biodiversity 2019*
- *Auckland's Urban Ngahere (Forest) strategy*
- *Auckland Design Manual*
- *Tree Management Plan, Auckland Transport*
- *Auckland Council's Indigenous Biodiversity strategy*
- *Regional Pest Management Plan 2020 - 2030*
- *Te Puhinui Stormwater Management Plan (SMP) 2021*

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as the scale of this initiative and access to public land require political will and financial investment to realise.

 This initiative has a strong synergistic relationship with **Te Wai o Te Puhinui / Waters of Puhinui**. This coupling is often referred to as the blue and green networks of place. Given the interconnectedness of terrestrial and freshwater ecologies a healthy functional Te Puhinui environment requires restoration and regeneration of both systems. Reducing erosion and stabilising stream edges involves riparian planting and the reshaping of the stream bed needs to occur in parallel with riparian planting.

 **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** is synergistic and amplified by this initiative. Local participation in restoration efforts and environmental action will maximise investments made by agencies and developers towards ecological and biodiversity outcomes by supporting on-the-ground stewardship including planting, monitoring and maintenance.

 This initiative can be amplified by **Te Whanaketanga Oohanga o Te Puhinui / Te Puhinui Economic Development** through the training and employment of locals in environmental

 management, monitoring and evaluation, arborcare and plant propagation.

Te Puhinui Living Lab amplifies this initiative by providing the structure, platform and operational means to monitor and evaluate improvements in biodiversity gains, ecosystem health and mitigate some climate effects over time. It provides quality data to support ongoing learning and adaptive management to ensure the best possible outcomes for Te Puhinui environment and its people.

 This initiative can amplify **Te Puhinui Activation, Te Puhinui Empowered Communities** by providing a rich context for engaging locals and providing local opportunities for learning and sharing about the revegetation of the catchment.

 This initiative is synergistic with **Ngaa Ara o Te Puhinui / Te Puhinui Pathways** as the creation of continuous pathways along the stream corridor and through the catchment provides clear opportunities for wildlife corridors through revegetation along the path which also provides access and connection to nature making them more attractive and desirable for path users .

Te Ngahere o Te Puhinui | *Te Puhinui forest*

1. Healthy Stream Corridors



Protect and enhance the riparian networks to restore the ecological function of the streams, improve landscape connectivity and improve the biodiversity of Te Puhinui.

Design Guidelines

- Create ecological corridors along streams and roads to link areas of ecological significance, to enhance biodiversity and to create connections between green spaces.
- Riparian planting should consist of stratified layering of indigenous trees, shrubs and groundcovers and a minimum corridor width of 10m either side of the stream and an ideal of 20m either side of the stream. See Appendix B for Plants for Regenerating Te Puhinui.
- Encourage people and organisations adjacent to streams to turn their backyards and lots into sanctuaries for wildlife.
- Encourage the selection of culturally significant plant species for planting and harvesting where appropriate (seek guidance from mana whenua/review archaeological reports from within the harbour watershed to identify key flora and fauna).
- Select plant species that support and encourage the return of endemic fauna (ie manu/birds, inanga/whitebait). See Appendix B for Plants for Regenerating Te Puhinui.
- Work with and support the Auckland Botanic Gardens to continue research into conservation and biodiversity, the collection of seed and the cultivation of threatened and endangered plants.

Next steps

- Undertake a full ecological assessment of Puhinui Catchment with support from mana whenua ecological specialists.
- Establish immediate riparian planting opportunities and seek funding partnerships to realise (ie Sustainable Business Network Million Metres, Vector Sponsorship).
- Continue to support existing planting programmes within the catchment such as Tootara Park and Puhinui Reserve.

Aho/Thread



Taiao | Nature

Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui | *Te Puhinui Forest*

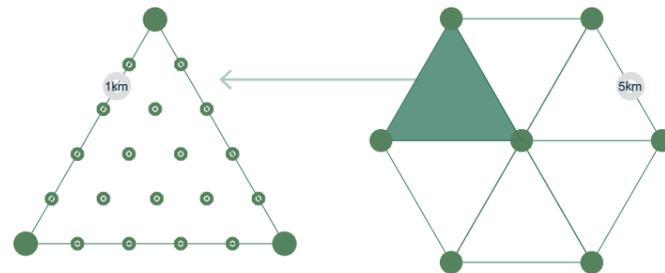
2. Forest Patches



Re-establish a matrix of dense, multilayered forest patches large enough to support a range of habitats for native wildlife that are distributed in a way that creates stepping stones for wildlife moving through the catchment and to improve landscape connectivity and ecological integrity.

Design Guidelines

- Maintain, enhance and protect existing vegetation and areas of ecological significance.
- At a minimum, Forest Patches and Stream Corridors should cover 10 per cent of the catchment. In combination with Canopy Cover in Urban Areas (minimum 20 per cent), Te Puhinui should have a minimum canopy coverage of 30 per cent by tall woody vegetation.
- Where practical, provide safe physical access to patches of urban ngahere.
- Encourage people and organisations to turn their backyards and lots into sanctuaries for wildlife.
- Encourage selection of culturally significant plant species for planting and harvesting where appropriate (seek guidance from mana whenua/review archaeological reports from within the harbour watershed to identify key flora and fauna).
- Select plant species that support and encourage the return of endemic fauna (ie manu/birds). See Appendix B for Plants for Regenerating Te Puhinui.
- Work with and support the Auckland Botanic Gardens to continue research into conservation and biodiversity, collection of seed and the cultivation of threatened and endangered plants.



Forest Patches

- Primary Forest Patch (6.25 ha)
- Secondary Forest Patch (1.6 ha)

Establish a patchwork matrix of forest patches of 6.25ha patches for core sanctuaries 5km apart; 1.6ha patches for stepping stones 1km apart; and 0.01ha patches for stepping stone and feeding stations approximately 0.2km apart to ensure the generalised dispersal of seeds and pollen by birds and wind. See Appendix B for Plants for Regenerating Te Puhinui.

Next steps

- Ongoing coordination with the wider AC Urban Ngahere programme to seek funding and opportunities to increase canopy cover in catchment.
- Ensure that any improvements within the Open Space Network incorporate appropriate planting species and locations.

Aho/Thread



Taiao | Nature

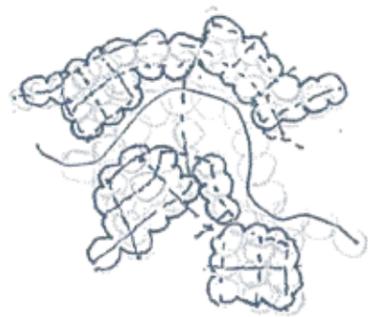
Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui | *Te Puhinui Forest*

3. Canopy Cover in Urban Areas



Integrate a canopy cover of tall woody vegetation into road corridors, private lots and public land to improve amenity, micro climates, air quality, habitat, water quality and reduce stormwater run-off.

Design Guidelines

- At a minimum, Canopy Cover in Urban Areas should cover 20 per cent of the catchment. In combination with Forest Patches and Stream Corridors (minimum 10 per cent), Te Puhinui should have a minimum canopy coverage of 30 per cent by tall woody vegetation. See Appendix B for Plants for Regenerating Te Puhinui.
- Develop a street and specimen tree strategy for Te Puhinui that builds on detailed plant lists outlined in Appendix B to include guidance on the distribution, composition and legibility of different street typologies and open spaces and the care and integration of existing large trees into streets, parks and yards.
- Encourage people and organisations to turn their backyards and lots into sanctuaries for wildlife.
- Select plant species that support and encourage the return of endemic fauna (ie manu/birds). See Appendix B for Plants for Regenerating Te Puhinui.

Next steps

- Review and seek to improve current controls to manage urban ngahere provision on private land.
- Coordinate with Kāinga Ora Urban Ngahere programme to advocate for an increase in Canopy cover in their landholdings within the catchment.
- Seek support from Auckland Transport as a partner in the increase of urban tree cover within the street network.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui | *Te Puhinui Forest*

4. Coastal Forest Enhancement



Protect and maintain areas of significant conservation value and reinstate endemic ecosystems to support coastal habitats and wildlife and improve resilience of the coastline against the ongoing effects of coastal inundation and a changing climate.

Design Guidelines

- Maintain, enhance, extend and protect existing vegetation and areas of ecological significance in Puhinui Reserve, estuary and along the coastal edge in Clendon Park and Weymouth.
- Encourage people and organisations to turn their backyards and lots into sanctuaries for wildlife.
- Where possible, expand existing natural coastal buffers including mangroves and native coastal vegetation to buffer against storm surge and sea level rise.
- Encourage the selection of culturally significant plant species for planting and harvesting where appropriate (seek guidance from mana whenua/review archaeological reports from within the harbour watershed to identify key flora and fauna)
- Select plant species that support and encourage the return of endemic fauna (ie manu/birds, inanga/whitebait). See Appendix B for Plants for Regenerating Te Puhinui.

Next steps

- Provide ongoing support for existing planting programmes within Puhinui Reserve, including highlighting the importance and significance of this ecological area.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui | *Te Puhinui Forest*

5. Te Puhinui Nursery



Explore and support the development of an iwi, hapuu and/or community nursery in Te Puhinui to provide plant stock for catchment revegetation and local employment and training opportunities.

Design Guidelines

- Where possible use indigenous and social procurement in the sourcing of plants for local projects.
- Encourage and prioritise eco-sourced plant stock.
- Explore opportunities for local social enterprise nurseries to provide plant stock.
- Discuss with other agencies and developers working in revegetation projects in and around the catchment area and coordinate timeframes for advanced bulk purchases of locally grown plants for local projects.

Next steps

- Establish strategic partnerships with interested parties within the catchment, could include Te Whangai Trust, MIT, Kāinga Ora, mana whenua, Local Marae, Mahere Whakauka Org
- Approach landowners within Puhinui Catchment to explore establishment of a nursery on their property (Waka Kotahi NZ Transport Agency, Auckland Council, Kāinga Ora, mana whenua)
- Ensure that nurseries on public land have wind-p clauses ensuring the council is not responsible for decommissioning nurseries.

Aho/Thread



Taiao | *Nature*

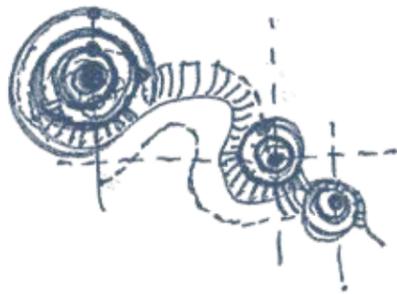
Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui | *Te Puhinui Forest*

6. Pest-free Te Puhinui



Protect and maintain healthy ecosystems, habitats and biodiversity through the management of pest species.

Design Guidelines

- Explore the establishment of a catchment-wide pest-free initiative
- Invest in pest management initiatives and support local efforts to protect and maintain healthy ecosystems and biodiversity by controlling pest species.
- Support ongoing efforts to remove pest plant species that negatively impact on native biodiversity and ecosystem health.
- Support ongoing efforts to trap pest animal species that negatively impact on native biodiversity and ecosystem health.
- Explore opportunities to develop cottage industries related to pest control. For example weeds for floristry and medicinal uses, natural fibres for weaving, and hides for leather and fur.
- Investigate, develop and implement matauranga Maaori to manage pests.

Next steps

- Commission a report identifying all current pest control activities in the catchment and a feasibility study for the establishment of a pest-free Te Puhinui.
- Explore funding opportunities through the Crown's Jobs for Nature fund.
- Ensure ongoing coordination with existing council and Local Board funded initiatives.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Ngahere o Te Puhinui
Te Puhinui Forest

Te Ngahere o Te Puhinui

Te Puhinui Forest

KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open space network

1. Protect and Enhance Stream Corridors

- Stream corridor | Browns Road | Roscommon Road

2. Forest Patches

- Significant ecosystem
- Extend significant ecosystem
- Existing primary patch
- Proposed primary patch
- Existing secondary patch
- Proposed secondary patch

3. Canopy Cover in Urban Areas

- Streetscape tree planting
- Open Spaces in Urban Areas

4. Coastal Forest Enhancement

- Coastal Forest Enhancement

5. Te Puhinui Nursery Social Enterprise

- TBC



Te Kaitiakitanga me Te Tiakitanga o Te Puhinui

Te Puhinui Guardianship and Stewardship



Support the people of Te Puhinui to play an active role in the care, protection, restoration and regeneration of their environment, recognising the role of mana whenua as direct descendants and kaitiaki of Te Puhinui and ensuring intergenerational transfer of customary wisdom and understanding.

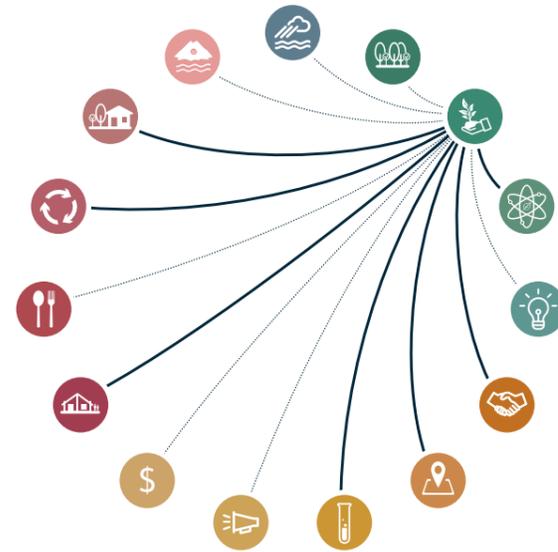
SUB-INITIATIVES

1. *Te Waiohua Kaitiakitanga*
2. *Te Roopuu Tiaki i Te Puhinui | Friends of Puhinui*
3. *Te Puhinui Business Responsibility Initiative*

Relationship to other documents

- *Te Tiriti o Waitangi*
- *The Manukau Report 1985*
- *Independent Māori Statutory Board - The Māori Plan 2017*
- *The Auckland Plan 2050 - Focus Area 5 - Māori Identity and Well-being*
- *Auckland Unitary Plan - B6 mana whenua*
- *Te Aranga Māori Cultural Landscape strategy 2006 + Auckland Council - Te Aranga Principles*
- *Te Tāruke-a-Tāwhiri: Auckland's Climate Plan*

Link to Other Initiatives



Primary Connection

This is a keystone initiative, one that has an extremely high impact on the functioning and well-being of the whole Te Puhinui living system. This initiative is values and culture driven representing bottom-up/grassroots actions that contribute to the restoration, renewal and maintenance of the ecological health and well-being of the catchment as well as to the social, cultural and spiritual well-being of its communities.

This initiative has the ability to amplify many other initiatives such as **Te Wai o Te Puhinui / Waters of Te Puhinui**, **Te Ngahere o Te Puhinui / Te Puhinui Forest** and **Te Puhinui Empowered Communities**. **Te Maaramatanga o Te Puhinui / Te Puhinui Innate Wisdom** amplifies the effectiveness of this initiative.

This initiative is synergistic with **Te Mana Whakahaere o Te Puhinui / Te Puhinui Governance** - the regeneration of Te Puhinui requires both top-down decision making by key agencies and actors in the catchment as well as bottom-up strategies like this that foster and empower on-the-ground environmental action and care.

This is also synergistic with **Te Puhinui Living Lab** and these two initiatives can leverage each other. For example, increasing active catchment stewardship will significantly contribute to people observing and learning from Te Puhinui, and actively seeking to

learn from Te Puhinui and sharing learning with others in the catchment will increase the effectiveness of environmental action.

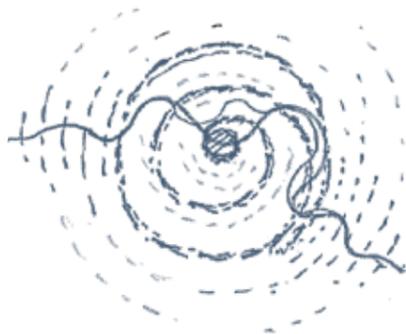
This initiative is synergistic with **Te Puhinui Identity** and these two initiatives can leverage each other. For example, increasing active catchment stewardship will contribute to people's connection to and pride of place, and the development of local pride will likely increase people's interest in participating in environmental stewardship.

Restructuring Te Puhinui Built Environment is another keystone initiative and can amplify this initiative by supporting the development of communities that provide more direct relationship with their surrounding environments increasing the likelihood that they will contribute to caring for these environments.

Te Kaitiakitanga me Te Tiakitanga o Te Puhinui

Te Puhinui Guardianship and Stewardship

1. Te Waiohua Kaitiakitanga



Ensure Te Waiohua play a lead role in fulfilling fundamental kaitiakitanga obligations on behalf of Te Puhinui, ensuring its material and spiritual well-being.

Design Guidelines

- Recognise and enable opportunities for the special role of Te Waiohua as kaitiaki/guardians.
- Create opportunities for mana whenua to led, participate and support active guardianship of the awa of Te Puhinui.
- Actively support mana whenua to build the capability and capacity to realise their role as kaitiaki.
- Continue to seek input into work programme from mandated mana whenua technical experts such as ecologists.
- Develop a catchment-wide adaptive management strategy for Te Puhinui.
- Recognise, celebrate and honour the role and place of te taiao/natural world as our Tuupuna.

Next steps

- Establish an ongoing funding application and business case for the Maaori Outcomes Steering Group fund to realise this initiative.
- Establish strategic partnerships with existing mana whenua groups to realise and support their role as kaitiaki, including groups such as Pu-A-Nga Maara, Whenua Warriors and Hapai Hauora.

Aho/Thread



Taiao | Nature

Parent Initiative

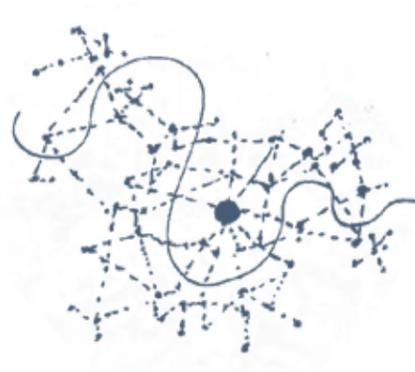


Te Kaitiakitanga me Te Tiakitanga o Te Puhinui |
Te Puhinui Guardianship and Stewardship

Te Kaitiakitanga me Te Tiakitanga o Te Puhinui

Te Puhinui Guardianship and Stewardship

2. Te Roopuu Tiaki i Te Puhinui / Friends of Puhinui



Establish a catchment-wide Roopuu Tiaki / Friends of Te Puhinui umbrella environmental organisation for wider members of the community to connect and coordinate, raise awareness and advocate for environmental action within Te Puhinui.

Design Guidelines

- Support existing environmental groups within the catchment such as Tootara Heights Bush Guardians and Friends of Tootara Park.
- Seed fund coordinator role to support, grow and establish new Te Puhinui Tiakitanga groups.
- Work with existing local community advocates, activators, environmental and community conservation initiatives to:
 - Seek interest in participating as members of the wider Te Puhinui roopuu.
 - Develop a brand and identity to help raise awareness of its existence, and relationship to Te Whakaoranga o Te Puhinui.
 - Build capability and capacity of the group to lead specific environmental initiatives and provide feedback and co-design input into future projects where appropriate.
 - Provide additional information and resources to existing environmental initiatives and groups.

Next steps

- Seek funding for coordinator role through Local Boards and/or Auckland Council. Also explore potential to fund through the Crown's Jobs for Nature programme.
- Build relationships/partnerships with existing environmental groups within the catchment - seeking to build on existing energy and knowledge.

Aho/Thread



Taiao | Nature

Parent Initiative

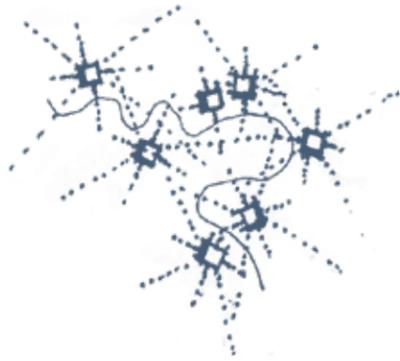


Te Kaitiakitanga me Te Tiakitanga o Te Puhinui |
Te Puhinui Guardianship and Stewardship

Te Kaitiakitanga me Te Tiakitanga o Te Puhinui

Te Puhinui Guardianship and Stewardship

3. Te Puhinui Business Responsibility Initiative



Develop a business responsibility and sustainability programme to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui to take responsibility for their actions and by extension the environmental well-being of Te Puhinui and its people.

Aho/Thread



Taiao | Nature

Parent Initiative



Te Kaitiakitanga me Te Tiakitanga o Te Puhinui |
Te Puhinui Guardianship and Stewardship

Design Guidelines

- Work with the Wiri and Manukau Business Improvement Districts and the Manukau Beautification Charitable Trust to lead and develop a specific programme of business responsibility, education and awareness raising within local industry/businesses. I.e. industrial/commercial contributors such as Downers, Spotlight and Nestle to promote Industrial Pollution Prevention and incentivise industry participation.
- Support broader corporate responsibility initiatives that target:
 - How a company operates - for example the reduction of waste and the promotion of staff walking and cycling; and
 - What a company does - for example the promotion of businesses and social enterprises that are dedicated to the ongoing regeneration of Te Puhinui.
- Seek partnership opportunities with the Sustainable Business Network Million Metres Programme to advocate and enable corporate sponsorship of stream restoration and create ongoing funding stream for this initiative.
- Seek ongoing opportunities for local businesses to take part and sponsor clean-up and planting events such as Adopt-a-Spot.
- Develop incentives that trigger behavioural change from existing businesses, industry and public agencies - including an awards programme.
- Ensure that existing regulatory programmes are appropriate and fit for purpose to regulate non-compliance in catchment.
- Develop a brand and identity to raise awareness and incentivise involvement in the Business Responsibility initiative.

Next steps

- Establish partnership with existing programmes and businesses which can support and complement this initiative such as the Sustainable Business Network Million Metres Programme, CityCare corporate responsibility and existing Auckland Council regulatory programme.
- Co-design 3-year action plan for initiative with interested parties.
- Stream Clean launch event to be followed up with regular education and advocacy and future clean up and planting events, building on the Place-Based Education Initiative.

Te Maaramatanga o Te Puhinui

Te Puhinui Innate Wisdom



Acknowledge and work with the natural world and Te Puhinui as holder of place sourced knowledge and wisdom to reinvigorate, celebrate and affirm Te Puhinui as a living organism and actively apply this knowledge to its regeneration.

SUB-INITIATIVES

1. *Te Maramataka o Te Waiohua | Te Waiohua Lunar Cycles*
2. *Te Reo Waiohua strategy | Te Waiohua Language strategy*

Relationship to other documents

- *The Auckland Plan 2050 - Focus Area 5 - Māori Identity and Well-being*
- *Auckland Unitary Plan - B6 mana whenua*
- *Te Aranga Māori Cultural Landscape Strategy 2006 + Auckland Council - Te Aranga Principles*
- *The Māori Language strategy 2003*

Link to Other Initiatives



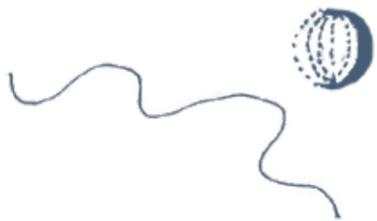
Primary Connection

This initiative amplifies most other initiatives by allowing Te Puhinui itself, and the natural world, as teacher, to guide the regeneration.

-  This initiative is amplified by **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as political will and support for this initiative as being intrinsic to the regeneration of Te Puhinui will increase its potential impact on other initiatives.
-  This initiative is synergistic with **Te Puhinui Identity** as local stories of place will reinforce our appreciation of Te Puhinui as teacher, and deeper local connections to the natural world will deepen locals' place based identity.
-  **Te Puhinui Living Lab** is synergistic with this initiative. It provides the platform and support infrastructure to embed local wisdom into the ongoing development of place based knowledge and provides a focus and indigenous framing for ongoing local research and knowledge development.

Te Maaramatanga o Te Puhinui | *Te Puhinui Innate Wisdom*

1. Te Maramataka o Te Waiohua / *Te Waiohua Lunar Calendar*



Reinvigorate, celebrate, and apply Te Waiohua lunar cycles to the planning, design, operations and delivery of a wide range of activities within Te Puhinui.

Design Guidelines

- Document and reinvigorate a Te Waiohua maramataka that can be applied to events, activations, and forms of reciprocity (give-back days), plantings and other management activities.
- Celebrate the Waiohua maramataka through our project designs and planting specifications.
- Work with schools and existing education initiatives such as enviroschools, STEM schools, kura Maaori and the Auckland Botanic Gardens to develop Te Waiohua Maramataka resources and programmes for Te Puhinui.
- Where appropriate develop celebrations and rituals unique to Te Puhinui.
- Work with the council family and crown agencies to integrate and apply Te Waiohua maramataka to their operations and practices in Te Puhinui.

Next steps

- Reclaim this maatauranga through research, waananga, spending time observing the tohu of the taiao and the moon phases to redevelop the maramataka systems in Te Waiohua Rohe.
- Integrate and embed maramataka into daily practices and delivery of project designs and activities within Te Puhinui through partnering closely with mana whenua experts and emerging local practitioners.
- Utilise the Hayman Park Wetlands as a trial project to embed Te Waiohua Maramataka in place.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Maaramatanga o Te Puhinui
Te Puhinui Innate Wisdom

Te Maaramatanga o Te Puhinui | *Te Puhinui Innate Wisdom*

2. Te Reo Waiohua strategy / *Te Waiohua Language strategy*



Promote, use and proactively teach Te Waiohua dialect and narratives within Te Puhinui. Reinstate the mana of te reo Waiohua within the catchment for the enrichment and benefit of Te Puhinui and all its communities.

Design Guidelines

- Develop a Te Waiohua naming strategy for Te Puhinui including:
 - Guidance for all project documentation, signage and design to embed and reflect Te Waiohua reo
 - Use of phonetics where appropriate to assist with pronunciation.
- Explore opportunities to integrate te reo Waiohua into education programmes within local schools.

Next steps

- Develop a strategy for effective integration of Te Waiohua dialect into the daily lives of people in Puhinui.
- Develop a strategy or framework for gathering existing te reo Waiohua narratives and place-sourced knowledge related to the area.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Maaramatanga o Te Puhinui
Te Puhinui Innate Wisdom

Te Puungao o Te Puhinui Te Puhinui Energy Strategy



Promote and support Te Puhinui energy transition from a non-renewable carbon intensive energy network towards a renewable energy network.

SUB-INITIATIVES

1. Warm Healthy Homes
2. Te Puhinui Energy Use and Efficiency strategy
3. Te Puhinui Energy Production and Storage
4. Low-carbon Transport

Relationship to other documents

- Ministry of Health Healthy Homes Initiatives
- Healthy Homes Initiative – Auckland, Co-design: making Auckland homes warmer and drier
- New Zealand Energy Efficiency and Conservation strategy 2017-2022
- New Zealand Energy strategy to 2050
- Low Carbon Auckland: Auckland's Energy Resilience and Low Carbon Action Plan - July 2014
- Te Tāruke-a-Tāwhiri: Auckland's Climate Plan
- Kainga Strategic Action Plan 2018 - Independent Māori Statutory Board

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as the scale of this initiative will require political will and financial investment to realise.

 This initiative is synergistic with **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** as they both encourage transport agencies and local businesses to reduce their ecological footprint through reducing their energy demand and use and transitioning to more sustainable energy sources.

 **Te Whanaketanga Oohanga o Te Puhinui / Te Puhinui Economic Development** is synergistic with this initiative. It can provide the skills and job training, local employment and innovation for upgrading local housing stock, supporting businesses to reduce energy demand and use, developing local energy generation and storage and decarbonising transport. Conversely this initiative provides the impetus for energy related economic development and a pipeline of energy sector initiatives.

 This initiative is synergistic with **te Para Kore i Te Puhinui / Te Puhinui Zero Waste Systems** as these two initiatives focus on the efficient use of energy and materials within the catchment - more efficient and local use and re-use of materials will

decrease energy, reduce transport needs and developing local energy generation will require more efficient and creative use and re-use of local resources.

 This initiative is largely dependent on **Te Puhinui Living Lab** to develop Te Puhinui specific knowledge and quality data as our current understanding of energy use and production and storage potential within Te Puhinui is very limited.

Te Puungao o Te Puhinui | *Te Puhinui Energy Strategy*

1. Warm Healthy Homes



Seek to ensure everyone who lives in Te Puhinui lives in a warm, dry and healthy home that reduces the risk of respiratory issues and other preventable health conditions.

Design Guidelines

- Work with programme partners to advocate for a catchment-wide programme to:
 - Ensure that all new homes are built to passive design standards to ensure they are warm and healthy.
 - Retrofit existing homes to meet passive design standards to ensure they are warm and healthy. Passive design buildings include the following features:
 - Living spaces including shared spaces and bedrooms are located on the north side of the building to ensure they have access to the sun for heating and light. Utility spaces including bathroom and laundry are located to the south.
 - The building envelope is insulated and uses double glazing to keep heat in during the winter and keep it out during the summer.
 - Glazing is focused to the north of the building, covering approximately 40 per cent of total external wall area.
 - Buildings incorporate thermal mass that stores heat during the day and releases the heat during the evening.
 - Buildings incorporate openings that allow the space to be ventilated naturally and without the need for mechanical devices.
- Use low-toxicity materials to reduce risk of personal illness, pollution and resulting habitat and species loss.

Next steps

- Identify what funds are available to housing providers and landlords to ensure warm healthy homes are built in the future.
- Undertake detailed assessment of existing building stock to determine which buildings need to be retrofitted to be warm and healthy.

Aho/Thread



Taiao | *Nature*

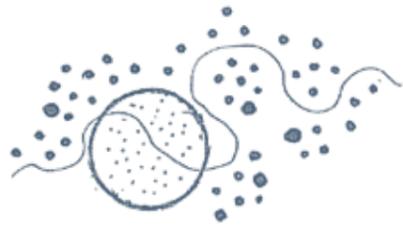
Parent Initiative



Te Puungao o Te Puhinui
Te Puhinui Energy Strategy

Te Puungao o Te Puhinui | *Te Puhinui Energy Strategy*

2. Te Puhinui Energy Use and Efficiency Strategy



Develop a strategy to reduce energy use and improve efficiency as part of a transition towards a renewable energy network targeting low energy lifestyle, the built environment, the food system, industry and health and well-being¹.

Aho/Thread



Taiao | Nature

Parent Initiative



Te Puungao o Te Puhinui
Te Puhinui Energy Strategy

Design Guidelines

- Encourage and where possible incentivise low-energy-use lifestyle to reduce overall energy use in Te Puhinui.

Built Environment

- Build new buildings and retrofit existing buildings to meet passive design standards to reduce energy usage - targeting net-zero or near-net-zero-energy performance.
- Use natural, locally available building materials where possible.
- Design for and promote low-energy modes of transport such as walking, cycling and public transport.

Food

- Reduce the use of fossil fuels in the growing, transporting, processing, packaging, preparing and storing of food.
- Replace petrochemical-based fertilisers, herbicides, and pesticides with agro-ecological farming methods that rely on crop rotation, intercropping, companion planting, mulching, composting, beneficial insects and the promotion of microbial activity in soils to maintain fertility.

Industry and Manufacturing

- Manufacture devices built to last, be repaired and fully recycled and remanufactured once absolutely needed.

- Replace materials and products that use fossil fuel as part of the extraction or manufacturing process (including feedstocks for plastics, petrochemical-based materials, most metals etc) with renewable materials.
- Where possible, use more labour-intensive extraction and construction methods - for example forestry and building.

Health and Well-being

- Identify low-energy sanitation and care options, and prioritise prevention and local disaster response preparedness.

Next steps

- Manukau Framework Plan (Integrated energy initiative).
- Investigate the energy use balance and profile for Te Puhinui including primary production, industrial and commercial activities, transport and residential and explore opportunities to reduce overall usage and to use energy more efficiently.
- Explore opportunities for existing industries to expand/shift focus to support local manufacturing and distribution in order to reduce / replace the need to import and export goods.
- Identify industrial processes that can be switched to electricity to power the processing and transport of goods and what incentives might be required to enable this.

Te Puungao o Te Puhinui | *Te Puhinui Energy Strategy*

3. Te Puhinui Energy Production and Storage



Develop a strategy for renewable local energy production and storage in support of the Te Puhinui energy use and efficiency strategy.

Design Guidelines

- Incentivise the purchase and use of electricity from renewable sources.
- Where possible, replace fossil-fuel-based energy usage with electricity generated from renewable energy sources - solar, wind, hydro and geothermal. For example - electric stoves replace gas-fired stove tops, electric vehicles replace petrol and diesel-powered vehicles.
- Develop systems to time our energy usage utilising electricity generated from renewable sources to coincide with the availability of sunlight and wind energy.
- Investigate the opportunity to develop an 'ecodistrict' - See page 151 for details.

Next steps

- Investigate the viability of renewable local energy sources - solar, wind, hydro, geothermal in Te Puhinui?

Aho/Thread



Taiao | *Nature*

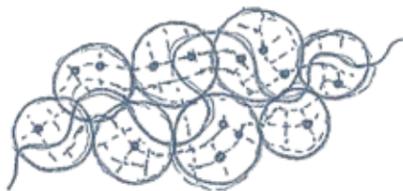
Parent Initiative



Te Puungao o Te Puhinui
Te Puhinui Energy Strategy

Te Puungao o Te Puhinui | *Te Puhinui Energy Strategy*

4. Low-carbon Transport



Develop a strategy to decarbonise the transport of people and goods to, from and within Te Puhinui.

Design Guidelines

- Create compact, mixed use, walkable forms of development.
 - Encourage infill development, multi-family buildings and compact, clustered forms of development.
 - Develop communities so that most essential services are within walking distance.
- Support low-carbon strategies to move people:
 - Promote walking, cycling and public transit for every day trips.
 - Develop infrastructure for walking, cycling and other modes of micro-mobility.
 - Electrify motorised transport by incentivising electric bikes and cars, and building more electrified public transit.
- Support low-carbon strategies to move freight and goods:
 - Relocalise manufacturing to reduce the need for shipping.
 - Minimise trucking by utilising cycling, electric-powered vehicles and where practical rail to move goods.
 - Explore opportunities to use shipping and sails to move goods around the Manukau Harbour.

Next steps

- Seek to influence future built form and transport strategies through the Steering Group.
- Seek to enlist Waka Kotahi NZ Transport Agency and Auckland Transport as signatories to Te Whakaoranga o Te Puhinui Charter.
- Actively collaborate and advocate for better walking and cycling outcomes along Te Puhinui as part of the Auckland Transport/Panuku Manukau Walking and Cycling Programme.

Aho/Thread



Taiao | *Nature*

Parent Initiative



Te Puungao o Te Puhinui
Te Puhinui Energy Strategy

Case study #1

Project Twin Streams

Location_ West Auckland

Size/Scale_ 56km of stream banks

Date_ Started 2003 - today

Who is involved_ Waitaakere Ranges and Henderson-Massey Local Boards, Parks, Sports and Recreation, Community Waitakere, EcoMatters, McLaren Park Henderson South Community Trust and Te Ukaipo and local community members.

Website Links_
<http://projecttwinstreams.com>

Summary of the project_

Project Twin Streams is a multi-faceted project focused on the long-term management and enhancement of the Henderson Creek and Huruhuru Creek catchments through a community development approach. Project Twin Streams is an excellent example of how a council organisation can inspire and collaborate with the community to achieve positive restorative outcomes for a shared environmental asset. This has been achieved by engaging, incentivising and teaching various community organisations, schools and businesses about sustainability through a hands-on approach to cleaning up, replanting and conserving local streams.

Project Twin Streams provides an excellent example of how to clean up a stream, and improve bank stability and ecological habitat. It additionally provides a well-established programme of how to engage with the community, through campaigns, planting days and placed-based education programmes and to galvanise a long-term tiaki role in the protection and enhancement of the catchment.

Relevance to Te Puhinui Strategic Initiatives



Case study #2

Te Auaunga Restoration Project

Location_ Te Auaunga Awa (Oakley Creek)

Size/Scale_ 1.3km section of the Te Auaunga Awa

Date_ 2015 - 2018

Who is involved_ Auckland Council, mana whenua, Local Boards, Wesley Intermediate School, Te Whangai Trust, Unitec, Global Hope Mission, the local community and artists

Website Links_

<https://static1.squarespace.com>

<https://ourauckland.aucklandcouncil.govt.nz>

Summary of the project_

Te Auaunga Awa restoration was an Auckland Council-led initiative to naturalise and restore the health of the awa and reduce flooding risks to surrounding residences. Te Auaunga is an excellent example of how maataurangi Maaori practices can be applied to a council project and produce results that address positive environmental outcomes and provide long-term social, cultural and economic benefits for the local community.

The Te Auaunga project integrated local economic development, long term income opportunities for local schools, rangatahi skill training and pathways to future employment, the use of cultural tohu as public art and traditional play spaces as nature playgrounds. Council's endeavours to work in partnership with mana whenua, develop governance systems to support the project, and demonstrate ways to engage a very diverse community in the overall regeneration and revitalisation of the stream, provide multiple lessons for the restoration of Puhinui Stream.

Relevance to Te Puhinui Strategic Initiatives



Case study #3 Evergreen Brickworks

Location_ Toronto, Canada

Size/Scale_ 40 acres

Date_ Built between 2006 and 2008

Who is involved_ Evergreen Trust, City of Toronto

Website Links_
<https://www.evergreen.ca/evergreen-brick-works/>

Summary of the project_

Evergreen Brick Works is a regional scale, community environmental centre based in a collection of retrofitted, deteriorating heritage brickwork buildings and encompassing the restoration of the surrounding stream and wetland ecosystems. The complex includes various spaces, both indoor and out, for private and public use and has become a popular business hub, venue and destination.

The purpose of the project is to inspire action to 'green' cities and is driven by the belief that people have the power to enact change and improve the health of their cities. Evergreen Brickworks is now a recognised global showcase for green design and an award-winning public space.

The Evergreen Brickworks is an outstanding example of how retrofitted existing assets and properties can provide opportunities and spaces to accommodate education facilities, community gardens, shared learning and creative spaces for rangatahi of all ages and also provide spaces and a hub for local businesses to lease or own.

Relevance to Te Puhinui Strategic Initiatives





Tangata/people refers to the cultural, socioeconomic and political foundations of Te Puhinui. It includes all organisations, communities and individuals who live, work, learn and play in Te Puhinui and recognises the ability and capacity of people to sustain and maintain their mauri and that of taiao and whenua. For mana whenua, this relates to their ability and capacity to maintain, sustain and regenerate their specific whakapapa relationships with nature and the people of Taamaki Makaurau.



Te Mana Whakahaere o Te Puhinui | *Te Puhinui Leadership and Decision Making*

Establish governance and operational structures and frameworks which support and enable appropriate forms of leadership, agency and decision making, as required for the regeneration of Te Puhinui.



Te Puhinui Identity

Revive and celebrate local identity by reconnecting those who live, work, learn and play in Te Puhinui with the stream, and its many places of significance and communities in order to foster a sense of meaning, belonging, connection and pride of place.



Te Puhinui Living Lab

Establish an applied research initiative within Te Puhinui to amplify and optimise its regeneration. The living lab will enable practical, on-the-ground learning opportunities for the communities of Te Puhinui, in a way that fosters collaboration, community engagement and participation, real-time monitoring and evaluation and the development of new knowledge.



Te Puhinui Empowered Communities

Develop a catchment-wide communications, activation and engagement campaign for community and private and public sectors to raise awareness and empower the people of Te Puhinui to participate in its regeneration.



Te Whanaketanga Oohanga o Te Puhinui | *Te Puhinui Economic Development*

Develop an economic strategy that focuses on the well-being of the communities of Te Puhinui, place-based livelihoods and long-term local careers through creating a pipeline of work and developing pathways to employment opportunities.

SUB-INITIATIVES

- *Te Whakaoranga o Te Puhinui Charter*
- *Steering Group*
- *Te Puhinui Ancestral Naming Policy*
- *Te Puhinui Regeneration Agency*
- *Manukau Harbour Forum*
- *Policy, Planning and Strategy Alignment*
- *Environmental Compliance*

SUB-INITIATIVES

- *Te Waiohau Puuraakau | Te Waiohau Iwi Origin Narratives*
- *Mana whenua Puukoorero | Mana whenua Migration and Occupation Narratives*
- *Hapori Puukoorero | Puhinui Community Narratives*

SUB-INITIATIVES

- *Te Arotakenga o Te Puhinui | Te Puhinui Monitoring and Evaluation Framework*
- *Te Puhinui Hub*
- *Te Puhinui Citizen Science*

SUB-INITIATIVES

- *Te Puhinui Activation and Engagement Approach*
- *Te Puhinui Place Based Education*
- *Te Puhinui Communications Campaign*

SUB-INITIATIVES

- *Skills, Innovation, Employment and Enterprise Hub*
- *Indigenous and Social Procurement*
- *Rangatahi Tuu Kaha | Te Puhinui Youth Development Programme*
- *Te Puhinui Displacement and Resettlement Manaaki Strategy*
- *Te Puhinui Philanthropy*

Socio-cultural foundations

Socio-cultural foundations refers to the stores of wealth built, stored and incrementally added to by a culture over multiple generations and includes things like language, customs, technologies, laws, decision-making processes, art, literature and music as well as the rich social tapestry present today.

Landscape values - Puhinui Catchment

The cultural foundations for the regeneration of Te Puhinui need to be developed by mana whenua, led by Te Waiohūa iwi, in partnership with Te Puhinui regeneration partners.

More work is still required to identify and articulate the landscape values and cultural narratives for the catchment. These will be critical to developing a strong sense of place and ensuring the regeneration strategy for Te Puhinui is place sourced and culture led.

The Cultural Heritage Inventory is a database identifying the locations of sites and other places of known heritage interest in the Auckland region. The database contains records of historic sites and structures, and historic botanical sites, and over 80 archaeological sites within the catchment.

It is acknowledged that the Cultural Heritage Inventory is not in itself a complete record of the history of Te Puhinui and additional sites and locations of heritage value will continue to be identified through the ongoing regeneration of Te Puhinui. Notwithstanding, the inventory provides key information about

a selection of important cultural and historical assets that record the history of the site and historic land-use patterns and practices.

The people of Te Puhinui

Te Waiohūa are acknowledged by iwi of Taamaki Makaurau as having primary mana whenua interest in Te Puhinui and their origin stories reflect their unique relationship with Te Puhinui. Te Waiohūa are comprised of Ngaati Te Ata, Te Ākitai Waiohūa, and Ngaati Tamaoho.

Puhinui Catchment is made up of people, whānau, groups, communities, organisations and cultures that have important roles to play in the regeneration of Te Puhinui. Working with the people, communities, organisations, groups and whānau who live, work, learn and play in Puhinui and activating their inherent strengths and enabling their potential is critical.

In order to better understand the perspectives, wants, needs, aspirations and challenges of the people of Puhinui, interviews were conducted with community connectors and key stakeholders within the catchment area. This included representatives from Local Board Services, Manurewa Marae, Manukau Beautification Charitable Trust, Wiri and Manukau Business Associations, Sisters of Mercy, Manutahi, and Auckland Council's Sustainable Schools, Parks, and Wai Ora/Healthy Waters. This local knowledge was used to develop the regeneration strategy and specifically the Strategic Initiatives and Design Guidelines.

Puhinui Catchment deprivation

Te Puhinui is highly impacted by social deprivation, and the majority of Census Area Units in Puhinui Catchment are level 9 and 10, the most deprived on the New Zealand deprivation scale.

Māori and Pacific populations are particularly concerned with deprivation in South Auckland as they are more represented in this area than anywhere else in the Auckland region. In 2018, Pacific and Māori represented respectively 38 per cent and 21 per cent of the population of Ootara-Papatoetoe and Manurewa local boards combined. In 2006 and 2013, a vast majority of the Māori (74 per cent and 72 per cent) and Pacific (83 per cent and 82 per cent) population were resident in the most deprived areas of South Auckland¹.

Indicators of deprivation include the employment rate and the average incomes of households. In Puhinui, median incomes are below the regional average and unemployment rates are very high. In this case again, the Māori and Pacific population are the most impacted with a higher rate of unemployment compared to adults from Asian, European or other ethnic groups. They also have a lower proportion of adults with personal income of \$30,000 or more per annum compared to other ethnicities as well as a lower proportion of adults with a Bachelor degree or higher².

As a result, levels of home ownership are low, and this affects Te Puhinui area particularly. In Ootara-Papatoetoe (46

per cent) and Manurewa (55 per cent) local boards, the home ownership is low compared to the regional average (61 per cent). Housing affordability is a significant issue in these communities and contributes to the transient communities phenomenon with a high proportion of renters³.

Deprived neighbourhood areas are most likely to experience higher exposure to unhealthy food outlets. Puhinui Catchment presents a very limited amount of locally grown and healthy products and a large amount of unhealthy food outlets, with five supermarket and healthy food providers within the catchment compared to over 44 unhealthy food outlets with over 24 in Manukau Central. Māori and Pacific population are once again most impacted by food insecurity as 20 per cent of Pacific and 17 per cent of Māori children are considered obese in New Zealand. Those living in deprived areas suffer from higher rates of food-related ill-health and are also less likely to meet the daily recommended intakes of fruits and vegetables.

There are two environments that can lead to food insecurity: food deserts and food swamps. A food desert is the lack of affordable and nutritious food and a prevalence of convenience stores, dairies and small independent stores over full-services supermarkets which leads to higher food prices, lower food quality and less variety. A food swamp is the abundance of fast food and junk outlets that outnumber healthy food outlets. In the most deprived Census Area Units, there is a 14 per cent higher potential of food swamps.

1. <https://www.waipareira.com/wp-content/uploads/2017/11/TPM6.-Locality-Population-Snapshot-SOUTH-Auckland.pdf>
 2. <https://do6qmrbufqcd2.cloudfront.net/1001/18-fn-investing-for-impact-in-south-auckland-report-full-%C6%923.pdf>
 3. <https://do6qmrbufqcd2.cloudfront.net/1001/18-fn-investing-for-impact-in-south-auckland-report-full-%C6%923.pdf>

Socio-cultural foundations

Puhinui Catchment is managed by two different local boards.

Ootara - Papatoetoe Local Board

85,122 people in 2018



46.0% identified as Pacific People
35.1% identified as Asian ethnicity
16.6% identified as European
15.7% identified as Maaori

Manurewa Local Board

95,680 people in 2018



36.3% identified as Pacific People
29.2% identified as European
26.0% identified as Maaori
25.4% identified as Asian ethnicity

Te Waiohua iwi have primary mana whenua interest in the Puhinui Catchment area. Te Waiohua are comprised of Ngaati Te Ata, Te Akitai Waiohua, and Ngaati Tamaoho.

Manurewa Marae is the only urban community marae in the catchment and is a place of cultural and social significance for Te Puhinui community.

The unemployment rate in Manukau Central is 9.2 per cent for people aged 15 years and over, compared with 8.1 per cent for all of Auckland. The most common occupational group in Manukau Central is 'professionals', and 'professionals' is the most common occupational group in Auckland.



Several existing active entities within the catchment include, but may not be limited to:

- Manurewa Marae
- Manukau Beautification Charitable Trust
- Clendon Pride
- Community Guardians
- Protectors of Te Puhinui
- Friends of Tootara Park
- Te Pu-A-Nga Maara

The South Auckland region has the highest proportion of Maaori (19 per cent) and Pacific (33 per cent) population. Around 8 per cent of the total New Zealand Maaori descent population are resident in the South Auckland District.

Around 5 per cent of the South Auckland District population speaks te reo Maaori compared with 2 per cent in the Auckland region and 4 per cent for the total New Zealand population.

Te Puhinui is highly impacted by social deprivation, and the majority of Census Area Units in Puhinui Catchment are level 9 and 10, the most deprived on the New Zealand deprivation scale.

Manukau East: 10 Homai: 10
Manukau Central: 9 Clendon Park: 10
Wiri: 10

In 2015, Manukau contributed \$16 billion to the economy or about 20 per cent of Auckland's GDP.

20% of Auckland's GDP

Socio-cultural constraints and challenges

Constraints and challenges are not ‘bad’ in and of themselves, but represent characteristics intrinsic to Te Puhinui that need to be acknowledged, understood and reframed as parameters and/or opportunities that help to determine the scope and scale of any proposal for Te Puhinui.

A constraint typically represents a non-negotiable condition that can not be ‘solved’ and must be worked with, whereas a challenge is a parameter that can be managed or overcome and, in some instances, reconciling forces can reframe problems into solutions.



High levels of social deprivation

- Puhinui is one of the highest areas of social deprivation in the Auckland region.
- Poor quality environment and open space contributes to a lack of use and compounds social deprivation.
- Social deprivation results in the lack of care and interest from the people of Puhinui in their environment.



Historic lack of investment and service in Puhinui

- Significant areas of infrastructure are degraded or outdated (E.g. wastewater).
- There is a perception of neglect and second-rate services in many communities in Puhinui.
- Lack of quality public realm and maintenance result in less people using public spaces, which often exacerbates further neglect and safety issues.
- The idea of regenerating Te Puhinui does not resonate with the community and does not align with their day-to-day experience of the area.
- There is a lack of buy-in from businesses adjacent to many sections of Puhinui Stream.



Transient resident community

- There is a high percentage of state housing in Puhinui and a high percentage of short-term renters.
- Renters often have limited sense of place and ownership resulting in limited investment in place, environment and community.
- Transient worker populations, who leave the catchment to work elsewhere or visit the catchment to work typically have limited investment and a low sense of ownership of Puhinui Catchment.



Low pride of place in Puhinui Catchment

- There is a general lack of local identity and sense of place in Puhinui Catchment. Most people of Puhinui don't know they are part of Puhinui Catchment.
- The stream, open spaces and the urban area more generally are often neglected, trashed and vandalised.
- The low percentage of home ownership diminishes experience of locals having a sense of ‘roots’ in place and secure land tenure.
- Puhinui suffers from a negative stigma, mainly created from outside of South Auckland.
- There is a perception of neglect and second-rate services in many communities in Puhinui.



Disconnected and disengaged community

- People are disconnected from local streams and the natural environment.
- The lack of access to activities and quality open space along the stream contribute to Nature-Deficit Disorder.
- Urban form limits walking and cycling and doesn't encourage engagement with the stream.
- The poor condition of the stream doesn't promote health and well-being.
- Communities are locked out of meaningful participation in dialogue and/or decision making about environments and infrastructure that shape and impact on their daily lives.
- The lack of coordinated action on the ground limits community interest in the catchment and its regeneration.
- Historic and current engagement practices reduce and limit community interest and commitment to public participation and collaboration.
- Community engagement is challenged by the diverse population living and working in the catchment.



Prospect of dislocation through gentrification

- There is a significant risk that existing community members will be dislocated through gentrification as the catchment is developed.



Food insecurity

- 20.1 per cent of New Zealand households experience food insecurity.
- A significant number of Counties Manukau residents live in houses with seven or more people. This demographic is more likely to experience food insecurity than households with less people. The 2013 Census data shows that 15 per cent of Counties Manukau residents live in houses with seven or more people.
- Te Puhinui area has limited access to affordable and nutritious food.
- Despite having fertile soils, there is very limited food production within the catchment.



Coordinating multiple agency collaboration

- Multiple live and planned projects run by different agencies can make coordination, alignment, collaboration and effective engagement difficult.
- Discrete budgets, objectives, work programmes, and drivers.
- Projects within catchment are often uncoordinated.
- Agencies involved in Te Puhinui have different agendas and have limited obligation to work collaboratively or cohesively.
- No shared vision, collective will, purpose and direction for Puhinui Catchment.
- It is difficult to align different land users (public and private) to work together to rebuild the health of the stream and catchment.
- Coordination of investment and service delivery with different agencies is difficult.
- Private owners and governmental agencies have competing interests and priorities and do not necessarily focus on communities' priorities.



Long-term catchment-wide governance

- There is no existing agency, steering committee or other governance body to oversee the long-term regeneration of the catchment.
- Puhinui Catchment is divided by two local boards.

Socio-cultural opportunities

An opportunity can serve as a catalyst for a project or may help to leverage other related projects. An opportunity may be inherent to the existing condition, or manifested by reframing a challenge as an opportunity for action.



Leverage the existing policy, planning, interest, investment and collaborative approach in Te Puhinui

- National public agency investment - E.g. Kāinga Ora, Waka Kotahi NZ Transport Agency, Ministry of Social Development, Ministry of Health, Ministry of Business, Innovation and Employment.
- Regional public agency investment - E.g. Auckland Council, Eke Panuku Development, Auckland Transport, Counties Manukau District Health Board.
- Manurewa and Ootara Papatoetoe local board prioritisation and investment - Local Board Plans and Priorities, Parks renewal and redevelopment programmes, Community development programmes etc.
- Eke Panuku Development endorses the Green Star Communities framework as a benchmark.
- Align and coordinate existing work programmes.



Develop place based knowledge

- Reinvigorate local maatauranga.
- Develop baseline data/knowledge and Te Puhinui specific monitoring and evaluation programme to evaluate change over time and learn through action research. For example Genuine Progress Indicators.
- Develop Puhinui citizen science programme.
- Work with existing education providers, cultural elders and knowledge keepers.
- Develop place based narratives and promote Puhinui-focused storytelling and knowledge sharing.
- Encourage business and industry to turn their attention to the awa.



Puhinui community development

- Use social procurement to employ locals as a core aspect of the regeneration of Te Puhinui.
- Provide local employment through regeneration programmes.
- Establish Puhinui-based education and training.
- Puhinui Placemaking - focus on tactical urbanism, small wins, demonstrating and celebrating pride of place to engender community participation, pride and support.
- Engage youth through schools to bring new ideas, thinking and ownership.
- Involve local companies and employees in regeneration projects as a core aspect of the regeneration of Te Puhinui.



Work with and enable existing active community groups and organisations

- Work with and enable existing active entities in the catchment including, but not limited to:
 - Manurewa Marae
 - Manukau Beautification Charitable Trust
 - Clendon Pride
 - Community Guardians
 - Protectors of Te Puhinui
 - Friends of Tootara Park
 - Te Pu-A-Nga Maara
 - Manutahi (Transform Manukau collective)
 - Manukau and Wiri Business Associations.



Where appropriate, reveal, explain, and celebrate Te Puhinui rich natural history and cultural heritage

- Puhinui contains one of New Zealand's oldest archaeological sites.
- Te Puhinui, and more generally South Auckland, has one of the highest percentage of Maaori population in Auckland, and the highest percentage of Pasifika population in the world.
- Develop and leverage the cultural pride narrative to support Puhinui regeneration - use it as a tool to reframe and craft a new story of place.
- Despite significant quarrying, the two maunga Matukutuureia and Matukutuururu (collectively known as Ngaa Matukuurua) are still visible from some areas in the lower catchment and are of deep cultural significance to mana whenua as cultural landmarks and historic settlements.



Engage and collaborate with businesses, industry and private landowners to build biodiversity

- Work with private landowners on initiatives to increase biodiversity outcomes in private spaces and gardens and improve ecological connectivity.
- Work with the two Business Improvement Districts in Puhinui to improve environmental best practice and compliance and actively participate in local stewardship.

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making



Establish governance and operational structures and frameworks which support and enable appropriate forms of leadership, agency and decision making, as required for the regeneration of Te Puhinui.

SUB-INITIATIVES

1. *Te Whakaoranga o Te Puhinui Charter*
2. *Steering Group*
3. *Te Puhinui Ancestral Naming Policy*
4. *Te Puhinui Regeneration Agency*
5. *Manukau Harbour Forum*
6. *Policy, Planning and Strategy Alignment*
7. *Environmental Compliance*

Relationship to other documents

- *Te Tiriti o Waitangi*
- *Independent Māori Statutory Board - The Māori Plan 2017*
- *The Auckland Plan 2050 - Focus Area 2, Invest in marae to be self sustaining and prosperous; and*
- *The Auckland Plan 2050 - Focus Area 5, Māori Identity and Well-being*
- *The Māori Responsiveness Plan - Auckland Council and Auckland Transport*
- *The Manukau Report 1985*
- *Te Tāruke-a-Tāwhiri: Auckland's Climate Plan*
- *Local Board Plans*
- *Marae Management Plans*

Link to Other Initiatives



Primary Connection

This is a keystone initiative, one that has an extremely high impact on the functioning and well-being of the whole Te Puhinui living system. Due to the top-down nature of this initiative, focused on effective governance and decision making for Te Puhinui, it has a particularly significant influence and directly impacts on what happens on the ground - Te Mana Whakahaere initiatives have the potential to amplify or hinder many of the other strategic initiatives.

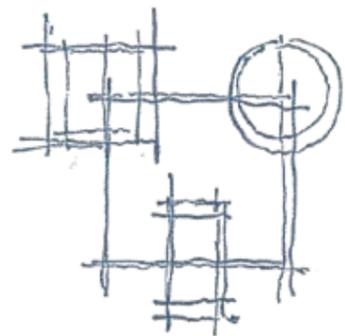
- 

At the same time synergistic and dependent, **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship**, represents bottom-up local action which can, like most other initiatives, be amplified by te Mana Whakahaere initiatives. It is synergistic in that on-the-ground action by many hands will create interest and care, which will likely ensure that decision makers are encouraged to support environmental action in the catchment.

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

1. Te Whakaoranga o Te Puhinui Charter



Create a charter that acknowledges the commitment of Te Waiohū iwi, local boards, the Auckland Council family, communities, and the Crown to work together to regenerate Te Puhinui.

Design Guidelines

- Align projects and initiatives within Te Puhinui to the values and principles of the charter.
- Support key decision makers and local and central government signatories to lead by example.
- Encourage the wider Te Puhinui community to become signatories to the charter.
- Support signatories to honour their commitment to the values and principles of the charter.

Next steps

- Finalise the charter and hold a signing event with key charter members.
- Promote charter and seek secondary support from the wider Puhinui community.

Aho/Thread



Tangata | People

Parent Initiative

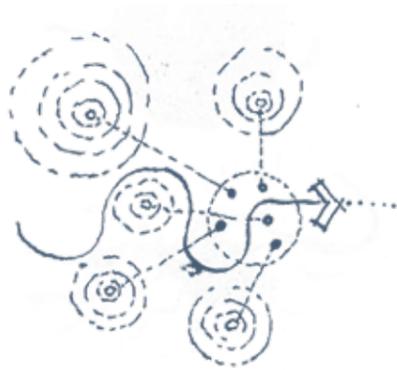


Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

2. Steering Group



Establish and maintain a steering group to provide strategic input, guidance and direction over the lifetime of Te Puhinui programme of works.

Design Guidelines

- Representatives of the steering group should include but not be limited to:
 - Te Waiohau representatives
 - Manurewa and Ootara Papatoetoe Local Boards
 - Eke Panuku Development
 - Healthy Waters
 - Parks, Sports and Recreation
 - Auckland Transport
 - Kāinga Ora
 - Other key project partners and sponsors.
- Use the collective influence and decision making power of the steering group to ensure alignment, coordination and collaboration, and the timely and effective delivery of Te Puhinui Programme of Works.
- Ensure long-term governance and political support is established for the intergenerational regeneration of Te Puhinui. I.e. Establish a legacy governance entity to replace the Steering Group. See Te Puhinui regeneration Agency.
- Ensure Te Whakaoranga o Te Puhinui is a live, fit-for-purpose strategy informing and supporting the work of agencies, decision makers and community organisations.
- Integrate Te Arotakenga o Te Puhinui into crown, council family, local board and iwi policies and strategies and give effect to on the ground operations.
- Actively advocate knowledge of, and respect for Te Puhinui through the Programme Steering Group.
- Recognise mana whenua aspirations for Te Maanuka / Manukau Harbour to attain legal personhood.
- Consider the health, well-being, wisdom and agency of Te Puhinui as a living system in decision making.

Next steps

- Seek Auckland Transport and Te Papa Atawhai membership on the Steering Group.
- Continue to facilitate regular Steering Group meetings as Te Puhinui Strategic Initiatives and Work Programme are realised.

Aho/Thread



Tangata | People

Parent Initiative



Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

3. Te Puhinui Ancestral Naming Policy



Ensure that formal naming in Te Puhinui recognises and celebrates the significance of mana whenua ancestral names including tuupuna, places, events, flora and fauna.

Design Guidelines

- Engage mana whenua/Te Waiohua to research and contribute to the use of correct and appropriate ancestral names.
- Recognise that traditional place names, events, endemic flora and fauna to the area are given priority.
- Use appropriate names to inform design processes, themes and storytelling.

Next steps

- Coordinate with Te Kete Rukuruku - existing Auckland Council naming programme.
- Establish where key naming opportunities exist now and in the future.
- Seek specialist mana whenua input into project naming not covered by Te Kete Rukuruku.

Aho/Thread



Tangata | People

Parent Initiative

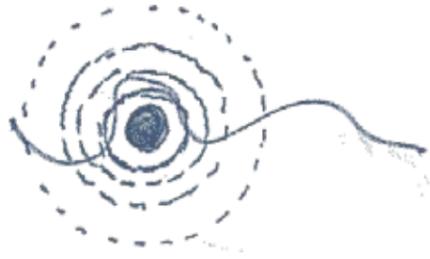


Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

4. Te Puhinui Regeneration Agency



Establish a dedicated Puhinui regeneration Agency entrusted with the governance, decision making, management and implementation authority to lead, coordinate and carry out the regeneration of Te Puhinui once the programme of works is complete.

Aho/Thread



Tangata | People

Parent Initiative



Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Design Guidelines

- Promote the establishment and long-term operations of a governance, decision making and coordination entity to support the ongoing regeneration of Te Puhinui – where and when possible led by Waiohua.
- Develop a business case for the long-term resourcing of a catchment-wide regeneration agency.
- Support and maintain a steering group to provide strategic input, guidance and direction in the ongoing regeneration of Te Puhinui.
- Ensure Te Whakaoranga o Te Puhinui is a live, fit-for-purpose strategy informing and supporting the work of agencies, decision makers and community organisations.
- Allocate project resource to monitor and evaluate project outcomes in line with Te Arotakenga o Te Puhinui.
- Integrate Te Arotakenga o Te Puhinui into crown, council family, local board and iwi policies and strategies and give effect to on-the-ground operations.
- Identify, document and communicate with stakeholders regarding challenges, shortcomings, or issues with the regeneration strategy and work proactively to improve the effectiveness of the strategy in supporting the regeneration of Te Puhinui.
- Consider the health, well-being, wisdom and agency of Te Puhinui as a living system in decision making.

Next steps

- Seek funding for business mentoring and support as required to enable Waiohua to collaborate on the creation of the regeneration Agency.
- Continue discussion with Te Waiohua iwi regarding the best timing and process to establish the regeneration Agency.

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

5. Manukau Harbour Forum



Support a collaborative response to improve conditions of Te Maanuka / Manukau Harbour composed of representatives of the nine Auckland local boards on the shores of the border.

Design Guidelines

- Support mana whenua representation and participation in the Manukau Harbour Forum.
- Leverage collective influence and decision making power of forum members and organisations to maximise coordination, collaboration and positive outcomes of both Te Whakaoranga o Te Puhinui and harbour-wide initiatives.
- Recognise mana whenua aspirations for Te Maanuka / Manukau Harbour to attain legal personhood.

Next steps

- Seek opportunities to present and promote Te Whakaoranga o Te Puhinui at future Manukau Harbour Forum events.

Aho/Thread



Tangata | People

Parent Initiative



Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

6. Policy, Planning and Strategy Alignment



Align existing central and local government agency policy, planning and strategy documents to Te Whakaoranga o Te Puhinui to ensure shared objectives and an integrated approach to regenerating Te Puhinui.

Design Guidelines

- Update and align all relevant crown and council family policy, planning and strategy documents to reference and enable Te Whakaoranga o Te Puhinui charter and work programme.
- Existing policy, planning and strategic documents include but may not be limited to:
 - Auckland Plan 2050
 - Te Tāruke-ā-Tāwhiri: Auckland Climate Plan
 - Panuku Transform Manukau Framework Plan
 - Auckland Unitary Plan
 - Core Strategies such as Parks and Open Spaces Strategic Action Plan, Sport and Recreation Strategic Action Plan, Biodiversity strategy, Historic Heritage Plan
 - Long-Term Plan - The council's 10-year plan and budget, and annual plans
 - Local Board Plans and Agreements including annual budgets
 - Crown Strategies, Plans and Legislation_ e.g. the Reserves Act 1977, the Conservation Act 1987, Conservation Management strategy (DoC), Resource Management Act 1991, National Policy Statements (e.g. National Water Policy Statement), National Environmental Standards, Kāinga Ora Simple Guide, Freshwater Management Plan.
 - Iwi Management Plans
 - Te Puhinui Stormwater Management Plan 2021
- Use indigenous and social procurement to engage local service providers in delivery of local services.
- Consider the health, well-being, wisdom and agency of Te Puhinui as a living system in decision making.

Next steps

- Seek support from Auckland Council's Healthy Waters and Plans and Places team to review and embed Te Whakaoranga o Te Puhinui throughout existing relevant plans and strategies.

Aho/Thread



Tangata | People

Parent Initiative

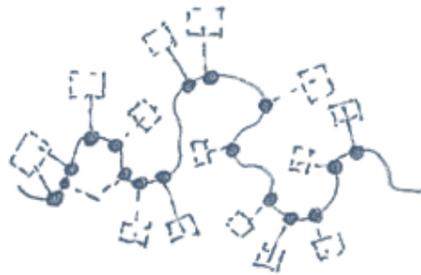


Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Te Mana Whakahaere o Te Puhinui

Te Puhinui Leadership and Decision Making

7. Environmental Compliance



Strengthen compliance of environmental issues in Te Puhinui, including but not limited to wastewater management and illegal discharges to cultivate responsibility for all land users and to ensure best practice environmental management is achieved.

Design Guidelines

- Work with Healthy Waters, Regulatory Compliance Unit, Waste Solutions and other related teams at Auckland Council to ensure a coordinated, best practice approach is maintained for environmental compliance.
- Work with Ootara-Papatoetoe Local Board to incorporate the principles and strategies outlined in the Neat Streets Project.
- Explore expanding the Neat Streets Project to the Manurewa Local Board.
- Fund community and business education to improve ownership of issues and solutions (see Business Responsibility Initiative).
- Ensure that performance standards of consented activities are being met.
- Investigate options for monitoring and policing non-compliant activities.
- Promote and support Industry Pollution Prevention initiatives.
- Create and maintain a map of illegal discharge locations in order to pinpoint specific non-compliant land users to target.

Aho/Thread



Tangata | People

Parent Initiative



Te Mana Whakahaere o Te Puhinui
Te Puhinui Leadership and Decision Making

Next steps

- Establish relationships with and awareness of Te Whakaoranga o Te Puhinui with existing compliance teams and agencies.
- Seek funding to create and maintain a map of illegal discharge locations in order to pinpoint specific non-compliant land users to target.

Te Puhinui Identity



Revive and celebrate local identity by reconnecting those who live, work, learn and play in Te Puhinui with the stream, and its many places of significance and communities in order to foster a sense of meaning, belonging, connection and pride of place.

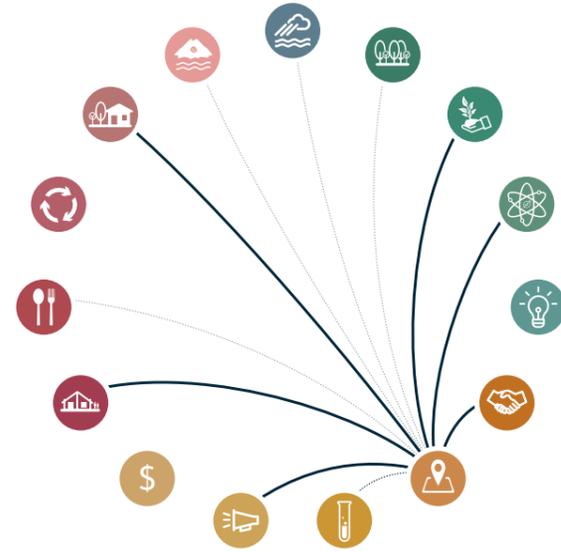
SUB-INITIATIVES

1. *Te Waiohua Puuraakau | Te Waiohua Iwi Origin Narratives*
2. *Mana whenua Puukoorero | Mana whenua Migration and Occupation Narratives*
3. *Hapori Puukoorero | Puhinui Community Narratives*

Relationship to other documents

- *Te Tiriti o Waitangi*
- *The Auckland Plan - Focus area 6: Celebrate Māori culture and support te reo Māori to flourish*
- *The Auckland Plan - Focus area 5: Recognise, value and celebrate Aucklanders' differences as a strength*
- *Te Aranga Māori Cultural Landscape strategy 2006 + Auckland Council - Te Aranga Principles*
- *Cultural Heritage Index - Auckland Council*

Link to Other Initiatives



Primary Connection

 This initiative is amplified by **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and decision making** as it will benefit from political will and some financial investment to realise.

This initiative has the potential to amplify many initiatives by recording, sharing and celebrating stories of place that contribute to locals' sense of connection to Te Puhinui which can encourage active engagement and participation in its regeneration.

 **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** is synergistic with this initiative and these two initiatives can leverage each other. For example, increasing active catchment stewardship will significantly contribute to people's connection to place, and the development of local pride will likely increase people's interest in participating in environmental stewardship.

 **Te Maaramatanga o Te Puhinui / Te Puhinui innate wisdom** is synergistic with this initiative as local stories of place will reinforce our appreciation of Te Puhinui as teacher and foster connections to the natural world in order to deepen local place based identity.

 **Ngaa Tohu o Te Puhinui / Symbols of Te Puhinui** is also synergistic with this initiative as both initiatives can leverage off each other. Local stories of place can be used to celebrate and

reveal Te Puhinui tohu and inform the creation of Te Puhinui public arts and cultural taonga. In turn, this celebration of sites of significance and cultural markers will create opportunities to share local stories of place.

 **Restructuring Te Puhinui Built Environment** amplifies this initiative by creating human-scale communities that provide opportunities to celebrate local place based identities.

Te Puhinui Identity

1. Te Waiohua Puuraakau / Te Waiohua Iwi Origin Narratives



Anchor, celebrate and spotlight Te Waiohua iwi origin narratives that acknowledge whakapapa connection between taiao/nature, tangata/people and whenua/place.

Design Guidelines

- Acknowledge the unique origin stories of Te Waiohua iwi to Te Puhinui and Te Maanuka / Manukau Harbour as living ancestors.
- Spotlight and integrate Te Waiohua iwi origin narratives into the built and natural context of Te Puhinui.
- Anchor Te Waiohua iwi narratives into educational programmes for schools, communities and businesses.
- Create events that spotlight and celebrate Te Waiohua iwi narratives.
- Create environments/settings which encourage the sharing of Te Waiohua origin narratives and acknowledge whakapapa connections between nature, people and place.
- Ensure that Intellectual Property and use of Waiohua Puuraakau remains under the control of iwi.

Next steps

- Work with the Waiohua iwi to gather existing Te Waiohua iwi narratives and place-sourced knowledge related to the area. Work with iwi to establish appropriate ways to record and represent these narratives ensuring that they are integrated into the programme of works.
- Seek further iwi input into how Te Waiohua narratives can be interwoven through all aspects of life in Te Puhinui.
- Seek ways to ensure that Te Waiohua narratives and understanding of place guide governance and future decision making.
- Explore the potential to link to the wider mana whenua and Puhinui Hapori narratives.

Aho/Thread



Tangata | People

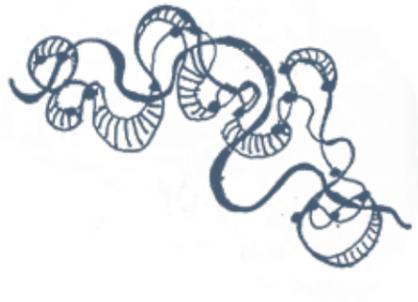
Parent Initiative



Te Puhinui Identity

Te Puhinui Identity

2. Mana whenua Puukoorero / *Mana Whenua Migration and Occupation Narratives*



Anchor, celebrate and spotlight mana whenua narratives that acknowledge connection and relationships to Te Puhinui.

Design Guidelines

- Spotlight and integrate mana whenua narratives into the built and natural context of Te Puhinui.
- Anchor mana whenua narratives into educational programmes for schools, communities and businesses.
- Create events that celebrate mana whenua narratives.
- Create environments and settings which encourage sharing of mana whenua narratives and acknowledge connections and relationships to Te Puhinui.
- Ensure that Intellectual Property and use of mana whenua Puukoorero remains under the control of iwi.

Next steps

- Work with the wider mana whenua group to gather further mana whenua narratives and place-sourced knowledge related to the area - explore potential to integrate into the programme of works as appropriate.
- Work with mana whenua to ensure that narratives and understanding of place guide governance and future decision making.
- Explore the potential to link to the Waiohau and Puhinui Hapori narratives.

Aho/Thread



Tangata | *People*

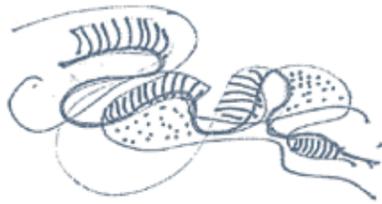
Parent Initiative



Te Puhinui Identity

Te Puhinui Identity

3. Hapori Puukoorero / Puhinui Community Narratives



Acknowledge, record and celebrate the stories of mataawaka, Pasifika, Paakehaa, and tau iwi communities and individuals to help create a contemporary narrative and sense of place for all people of Te Puhinui.

Design Guidelines

- Integrate and celebrate community narratives about Te Puhinui within the built and natural environment of Te Puhinui
- Create environments and settings which encourage the sharing of stories about connections and relationships to Te Puhinui.
- Create events that celebrate mataawaka, Pasifika, Paakehaa, and tau iwi community narratives and cultural practices.
- Connect with existing activations and integrate community narratives into local placemaking initiatives.

Next steps

- Gather existing Hapori narratives and place-sourced knowledge relating to the area - explore potential to integrate into programme of works as appropriate.
- Seek ways for Hapori narratives and understanding of place to inform governance and future decision making.
- Explore the potential to link to the Waiohua and wider mana whenua narratives.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Identity

Te Puhinui Living Lab



Establish an applied research initiative within Te Puhinui to amplify and optimise its regeneration. The living lab will enable practical, on-the-ground learning opportunities for the communities of Te Puhinui, in a way that fosters collaboration, community engagement and participation, real-time monitoring and evaluation and the development of new knowledge.

SUB-INITIATIVES

1. *Te Arotakenga o Te Puhinui | Te Puhinui Monitoring and Evaluation Framework*
2. *Te Puhinui Hub*
3. *Te Puhinui Citizen Science*

Relationship to other documents

- *Te Tāruke-a-Tāwhiri: Auckland's Climate Plan*
- *Mātauranga Whakauka Taiao - Environmental Education for Sustainability strategy and Action Plan - Department of Conservation.*

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership** and decision making as this initiative requires political will and financial investment to realise.

This initiative has the ability to amplify many other initiatives especially those that require the development of Te-Puhinui-specific knowledge and data to progress.

 **Te Wai o Te Puhinui / Waters of Puhinui** is amplified by this initiative - the living lab provides the structure, platform and operational means to monitor and evaluate improvements in ecosystem health, hydrological functions, and water quality over time and provides quality data to support ongoing learning and adaptive management to ensure the best possible outcomes for the waters of Te Puhinui and its people.

 This is synergistic with **te Kaititakitanga me te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** and these two initiatives can leverage each other. For example, increasing active catchment stewardship will contribute significantly to people observing and learning from Te Puhinui. Actively seeking to learn from Te Puhinui and sharing learning with others in the catchment will increase the effectiveness of environmental action.

 **Te Puhinui Activation, Communication + Engagement Campaign** is amplified by this initiative as new knowledge and understanding as well as known gaps in knowledge can translate into effective communication about Te Puhinui and provide powerful opportunities for engagement.

 **Te Puungao o Te Puhinui / Te Puhinui Energy strategy** and **te Para Kore i Te Puhinui / Te Puhinui Zero Waste Systems** is largely dependent on this initiative to develop Te Puhinui specific knowledge and quality data as our current understanding of energy use and material flows within Te Puhinui is very limited.

Te Puhinui Living Lab

1. Te Arotakenga o Te Puhinui / Te Puhinui Monitoring and Evaluation Framework



Develop and use a catchment-wide monitoring and evaluation framework to monitor, measure and evaluate changes over time and inform ongoing decision making towards the regeneration of Te Puhinui.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Living Lab

Design Guidelines

- Building on Te Whakaoranga o Te Puhinui Charter - support the development of a mana-whenua-led regenerative framework to monitor and evaluate the health of Te Puhinui over time which reflects Te Waiohua values and principles and integrates maatauranga Maaori with western science.
- Regularly review, refine and update Te Whakaoranga o Te Puhinui strategy to ensure it is contributing to the long-term regeneration of Te Puhinui. Independently audit and assess the effectiveness of the regeneration strategy, the strategic initiatives and design guidelines involving a wide range of participants.
- Allocate project resource to monitor and evaluate project outcomes in line with the Te Arotakenga o Te Puhinui.
- Use Te Arotakenga o Te Puhinui to monitor the critical success factors; using the shifting ground of Te Puhinui and Ngaa Pae Oranga/Horizons of well-being as waymarkers
- Proactively monitor, evaluate and document what is working and what is not working in relation to the regeneration of Te Puhinui and ensure the strategy is flexible, adaptive and responsive to new and emergent opportunities and changes.
- Where possible gather relevant data and information which contributes to monitoring and evaluating Te Puhinui journey back to well-being.
- Integrate Te Arotakenga o Te Puhinui into crown, council family, local board and iwi policies and strategies and give effect to on-the-ground operations.
- Wherever relevant, use the Te Arotakenga o Te Puhinui to improve the effectiveness of regeneration projects and initiatives.
- Proactively monitor, evaluate and document what is working and what is not working in relation to the regeneration of Te Puhinui. Share the lessons learnt throughout the process of regenerating Te Puhinui.
- Open source research findings, monitoring and evaluation data, and ongoing learnings from the regeneration of Te Puhinui, including potential to create scholarships for academic research on the regeneration of Te Puhinui.

Next steps

- Utilise Maaori Outcomes Steering Group funding to partner with Te Waiohua iwi to establish the framework.
- Build on Te Whakaoranga o Te Puhinui Charter as a foundation document, seeking learnings from similar frameworks (ie Take Mauri Take Hono).
- Undertake research of local and global, ecological, water quality and well-being monitoring tools, technologies and methods that could be applied in Te Puhinui.
- Establish partnership and potential funding support through Auckland Council's RIMU and Healthy Waters Unit (Wai Ora Monitoring Framework).
- Complete a stocktake of existing monitoring underway in the catchment.
- Appoint a project lead responsible for sharing learnings and adjusting the strategy as required.
- Actively seek academic partnerships to study and report on Te Whakaoranga o Te Puhinui.

Te Puhinui Living Lab

2. Te Puhinui Hub



Establish a physical and digital hub dedicated to deepening our collective understanding of Te Puhinui and promote local innovation and Te Puhinui as a living outdoor classroom.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Living Lab

Design Guidelines

- Where possible initiate or support educational opportunities along the stream corridor and throughout the catchment.
- Promote Te Puhinui as a living classroom/laboratory.
- Support the establishment and operations of a fit-for-purpose physical Puhinui Hub located in a suitable location with direct and easy access by the community. Currently reviewing potential location of customised containers within the catchment (ie Hayman Park and Wiri Reserve).
- Support the development and operations of a digital collaboration and innovation portal for the communities of Te Puhinui to share knowledge and information about Te Puhinui.
- Work with and support the Auckland Botanic Gardens to continue research and education into sustainable approaches to gardening, soil health, conservation and biodiversity, and the role plants play in improving water quality.
- Open source research findings, monitoring and evaluation data, and ongoing learnings from the regeneration of Te Puhinui.
- Create scholarships for academic research on the regeneration of Te Puhinui.
- Document and share the lessons learnt throughout the process of regenerating Te Puhinui.

Next steps

- Container hub to be established and relocated within the catchment to relevant project areas over time. Current proposal to site initially in Wiri Reserve (adjacent playground).
- To establish a brief for function, activities and collateral to be accommodated. Work with existing project partners to activate the hub (ie Waiora Team, Te Pu-A-Nгаа Maara, The Cause Collective)
- Investigate options for a long-term permanent location for Te Puhinui Hub.

Te Puhinui Living Lab

3. Te Puhinui Citizen Science



Enable community input and participation in a long-term, catchment-wide monitoring and evaluation programme, in order to create connection, build baseline knowledge and assess impacts and benefits over time.

Design Guidelines

- Build on and support existing Waicare Citizens Science programme including further testing stations and community involvement within the catchment.
- Once completed, utilise Te Arotakenga o Te Puhinui as a tool/foundation to track and report changes in Te Puhinui over time.
- Support the use of a digital portal for the communities of Te Puhinui to share knowledge and information about Te Puhinui (see Puhinui Hub initiative).
- Support an administrator/ coordinator to establish and coordinate Te Puhinui citizen science initiatives.
- Support a network of Te Puhinui individuals, groups and organisations to coordinate data collection, knowledge gathering and ongoing analysis and interpretation.
- Support schools to participate in citizen science programmes.
- Open source research findings, monitoring and evaluation data, and ongoing learnings from the regeneration of Te Puhinui.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Living Lab

Next steps

- Establish what other monitoring tools exist relative to ecological health, water quality, pest control/ mapping, well-being etc within the catchment.
- Review how these can be brought together under the Arotakenga model to create a single well-being monitoring and evaluation strategy/ framework/ toolkit for Te Puhinui.

Te Puhinui Empowered Communities



Develop a catchment-wide communications, activation and engagement campaign for community and private and public sectors to raise awareness and empower the people of Te Puhinui to participate in its regeneration.

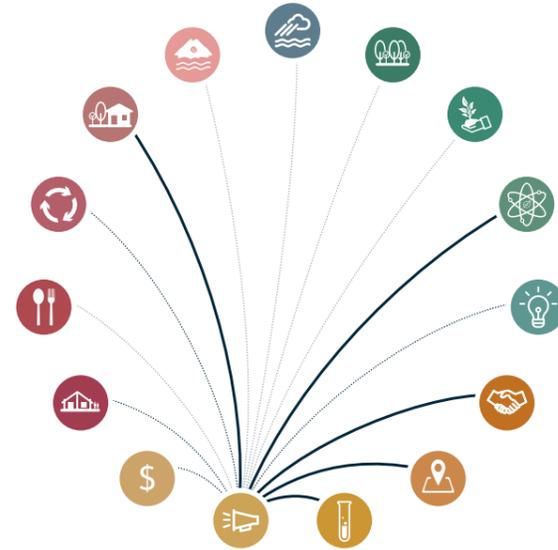
SUB-INITIATIVES

1. *Te Puhinui Activation and Engagement Approach*
2. *Te Puhinui Place Based Education*
3. *Te Puhinui Communications Campaign*

Relationship to other documents

- *Local Board Plans*
- *Empowered Communities, Enabling Council Framework*

Link to Other Initiatives



Primary Connection

This initiative is synergistic with and has the potential to amplify and be amplified by most other initiatives. Regeneration activities in the catchment provide opportunities to share what is happening in Te Puhinui and what is being learnt, encouraging everyone to do their part. This initiative promotes and supports locals to get actively involved in the regeneration of Te Puhinui for which there are many grassroots opportunities for those who live, work, learn and play in the catchment to contribute.

 **Te Ngahere o Te Puhinui / Te Puhinui Forest** can amplify this initiative by providing a rich context for engaging locals and providing local opportunities for learning and sharing about the revegetation of the catchment.

 **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship** is synergistic with and amplifies the effectiveness of this initiative by providing positive stories of locals actively engaged in environmental action and the regeneration of the catchment. This initiative supports communities to get actively involved in their communities and the regeneration of Te Puhinui, including environmental stewardship.

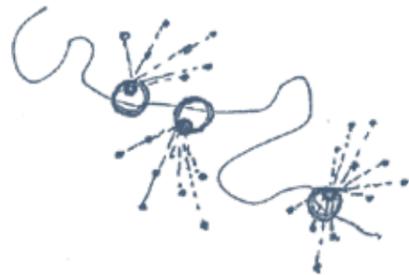
 **Te Puhinui Living Lab** amplifies this initiative as new knowledge and understanding as well as known gaps in knowledge can translate into effective communication about Te Puhinui and provide powerful opportunities for engagement.



Restructuring Te Puhinui Built Environment amplifies this initiative by creating human-scale communities that connect with the natural environment making it easier and more desirable for locals to participate in the regeneration of Te Puhinui.

Te Puhinui Empowered Communities

1. Te Puhinui Activation and Engagement Approach



Seek to ensure that those who live, work, learn and play in Te Puhinui are actively and meaningfully engaged in the regeneration of Te Puhinui.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Empowered Communities

Design Guidelines

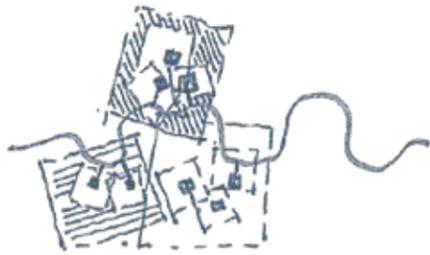
- Use social and indigenous procurement to work with locals to develop an Activation and Engagement strategy for effectively empowering and engaging Te Puhinui communities through Te Whakaoranga o Te Puhinui.
- Build capability and capacity of local providers to deliver engagement and placemaking activities in relation to Te Puhinui. Work with locals who have existing relationships with communities of Te Puhinui, are known by the community and know the community with whom you are engaging.
- Adopt culture-led engagement approaches when working with the communities of Te Puhinui and support culture-led approaches to community development and empowerment in all local projects.
- Explore opportunities to establish new community services including but not limited to multigenerational knowledge sharing, skills training, social enterprise, promotion of health and well-being, placemaking, innovation and entrepreneurship.
- Ensure that engagements and activations provide value and benefit to the people of Te Puhinui.
- Seek opportunities to activate Puhinui Catchment - trialling and prototyping new ideas and interventions where appropriate.
- Embed cross-council and community placemaking approaches into regeneration projects and initiatives to empower small groups of innovative and responsive operators to adapt business practices which protect and enhance Te Puhinui.
- Increase access to information and local decision making and seek to reduce barriers to participation.
- Provide authentic opportunities for locals to contribute to local conversations, influence decision making and take an active role in the regeneration of Te Puhinui.
- Seek ways to ensure that all voices are heard and engaged through Te Whakaoranga o Te Puhinui.
- Recognise, celebrate and honour the role and place of te taiao/natural world as our Tuupuna.

Next steps

- Engage local community practitioners to lead and/or participate in the creation of a local Activation and Engagement strategy.
- Seek partnership with The Southern Initiative Rangatahi/ Youth Lab to input into and realise the activation and engagement outcomes.

Te Puhinui Empowered Communities

2. Te Puhinui Place Based Education



Develop and deliver Te Puhinui educational programmes for schools, communities and businesses to improve ownership of local issues and challenges and empower local responses to these.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Empowered Communities

Design Guidelines

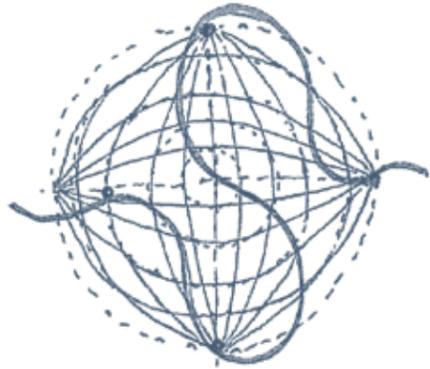
- Support the development and delivery of a local education programme for local schools enabling active learning and participation in the regeneration of Te Puhinui.
- Support a role dedicated to coordinating the delivery of Te Puhinui place based education programme.
- Develop and support a network of individuals, groups and organisations to work with Te Puhinui schools, communities and businesses to develop and deliver place-based educational programmes.
- Work with the Sustainable Schools team, the Auckland Botanic Gardens and local schools to explore place based education opportunities for young people in Te Puhinui.
- Learn from and build off the Wiri School Co-design programme when developing local place based education initiatives.
- Work with others to increase understanding, ownership and response to local issues as part of local learning initiatives.
- Support the local Business Improvement Districts to provide information and education resources to Local Businesses (see Corporate Responsibility)
- Support existing education institutions to provide and/or contribute to Te Puhinui place based education initiatives and interactive platforms. For example, a story map platform.
- Embed and promote the use of Waiohua te reo through place-based education initiatives.
- Partner with mana whenua to ensure their input into the resources and curricula for place-based education.
- Seek opportunities to learn, grow and heal through our relationship and understanding of Te Puhinui.
- Use indigenous and social procurement to engage local service providers in delivery of local services.
- Build relationships and programmes in collaboration with existing initiatives such as the Botanic Gardens Water Sensitive Design programme, Te Pu-A-Nga Maara and Waicare water testing.
- Identify individual and collective goals and aspirations and work to realise multiple mutually beneficial outcomes.
- Seek opportunities to partner with local tertiary providers, high schools and other education providers to embed Te Puhinui projects within their curriculum – e.g. Auckland University of Technology (AUT) and Manukau Institute of Technology (MIT) – and explore microcredentialling for the paid work experience and training.
- Work with other local and adjacent organisations and agencies interested in shared outcomes.
- Create scholarships for academic research on the regeneration of Te Puhinui.
- Share the lessons learnt throughout the process of regenerating Te Puhinui.

Next steps

- Work with the Sustainable Schools team to establish the key features and characteristics of a Te Puhinui place based education programme.
- Review how we can best integrate and utilise existing curricula, programmes and facilities (i.e. Botanic Gardens, Sustainable Schools Programme, Sustainable Business Network, Imagen8 programme, MIT/AUT programmes)
- Contact schools, tertiary institutions and local community and businesses to assess interest in collaborating in place based education.
- Contact schools and local practitioners and assess desirability for developing and prototyping regenerative concepts in the catchment.
- Distil information from the 'Discovery Document' into a place based education pack, relevant for interested collaborators.

Te Puhinui Empowered Communities

3. Te Puhinui Communications Campaign



Design and deliver an awareness campaign, including the development of a brand and key messaging, for the communities of Te Puhinui, in a way that supports engagement and showcases initiatives and early wins in order to encourage buy-in.

Design Guidelines

- Promote Te Puhinui and its regeneration through clear and coordinated communications across all delivery partners.
- Develop a brand strategy and key messaging focused around direct engagement with the community.
- Use Te Puhinui brand for initiatives within the catchment where applicable.
- Promote messages that encourage Te Puhinui community engagement and participation in Te Whakaoranga o Te Puhinui.
- Document and share the lessons learnt throughout the process of regenerating Te Puhinui.
- Ensure the te reo Waiohua is incorporated appropriately across all project communications (see Te Reo Waiohua initiative).
- Ensure that the 'Discovery Document' for Te Whakaoranga o Te Puhinui is widely known and accessible for projects happening within the catchment.

Next steps

- Work with local providers to design and deliver a communication campaign to effectively communicate with those who live, work, learn and play in Te Puhinui about the changes taking place in the catchment. Explore the potential to combine this with Te Puhinui Activation and Engagement Approach.
- Set up a communications working group across key delivery partners including Local Boards, Kāinga Ora, Healthy Waters and Panuku.
- Work with mana whenua to develop a brief and appoint an artist to develop a graphic identity for Te Whakaoranga o Te Puhinui.

Aho/Thread



Tangata | People

Parent Initiative



Te Puhinui Empowered Communities

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development



Develop an economic strategy that focuses on the well-being of the communities of Te Puhinui, place-based livelihoods and long-term local careers through the creation of a pipeline of work and by developing pathways to employment.

SUB-INITIATIVES

1. Skills, Innovation, Employment and Enterprise Hub
2. Indigenous and Social Procurement
3. Rangatahi Tuu Kaha | Te Puhinui Youth Development Programme
4. Te Puhinui Displacement and Resettlement Manaaki Strategy
5. Te Puhinui Philanthropy

Relationship to other documents

- Economic Development strategy - Auckland Council
- Māori Economic Development strategy - The Ministry of Business, Innovation and Employment NZ
- Transform Manukau 2017
- Auckland Council Sustainable Procurement strategy and Framework
- Whiria Te Muka Tangata - Māori Responsiveness Framework
- Local Board plans
- Māori Housing strategy 2014
- Housing Action Plan - Auckland Council
- Aotearoa Homeless Action Plan 2020 - 2023
- Te Tāruke-a-Tāwhiri: Auckland's Climate Plan

Link to Other Initiatives



Primary Connection



This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as the scale of this initiative requires political will and financial investment to realise. This initiative is synergistic with many other initiatives and can amplify several others by helping create pipelines of work and the local skills training to provide local employment opportunities to deliver that work. It also focuses on increasing local connection to place by increasing secure land tenure which in turn fosters increased participation in local and community actions. Conversely many other initiatives will contribute to financial investment in Te Puhinui increasing opportunities for local employment, skills training and innovation.



Te Puungao o Te Puhinui / Te Puhinui Energy strategy is synergistic with this initiative. This initiative provides the skills and job training, local employment and innovation for upgrading local housing stock, supporting businesses to reduce energy demand and use, developing local energy generation and storage and decarbonising transport. It also provides the impetus for energy-related economic development and a pipeline of energy sector initiatives.



This initiative is synergistic with **te Para Kore i Te Puhinui / Te Puhinui Zero Waste Systems**. This initiative can provide the skills and job training, local employment and innovation for local resource recovery, the development of circular material management systems within the catchment and supporting businesses to provide and/or procure local goods and services. It also provides the impetus for resource-and-materials-related economic development and a pipeline of resource management initiatives.

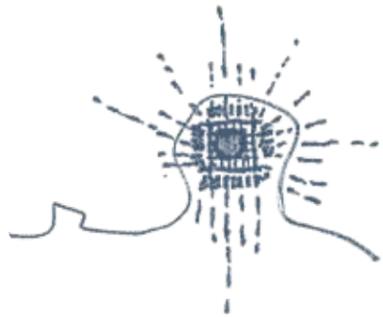


This initiative is synergistic with **Te Puhinui Food Sovereignty** with both initiatives contributing to the development of a localised food system and economy.

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development

1. Skills, Innovation, Employment and Enterprise Hub



Support social and economic development and innovation for Te Waiohau, local businesses and organisations as well as the wider community with skills training and employment and business development opportunities.

Aho/Thread



Tangata | People

Parent Initiative



Te Whanaketanga Oohanga o Te Puhinui
Te Puhinui Economic Development

Design Guidelines

- Work closely with existing local providers, practitioners and programmes to explore and integrate local enterprise and innovation opportunities including Amotai, Ministry of Social Development, The Southern Initiative and Two in a Ute.
- Support the facilitation and coordination of the existing skills, innovation, employment and enterprise sector initiatives to work more collaboratively and effectively to increase collective impact.
- Explore opportunities to establish new community services including but not limited to multigenerational knowledge sharing, skills training, social enterprise, promotion of health and well-being, placemaking, innovation and entrepreneurship.
- Work with agencies and employers within Te Puhinui to support the creation of a pipeline of work and develop employment opportunities for locals.
- Prioritise and advocate for higher value training and employment opportunities.
- Support a physical hub to enable the following opportunities:
 - Local innovation
 - Support Rangatahi Tuu Kaha / Puhinui Youth Development Programme (i.e. te Puanga Maara)
- Engage relevant local expertise to share skills and train local community members.
- Promote and support culture-led approaches to skills, employment and enterprise training.
- Cater training services to identify and meet local needs and opportunities.
- Create a kaimanaaki/support role to assist locals seeking and during employment.
- Seek crown funding opportunities for job creation through Te Whakaoranga o Te Puhinui.
- Seek opportunities to learn, grow and heal through our relationship and understanding of Te Puhinui.

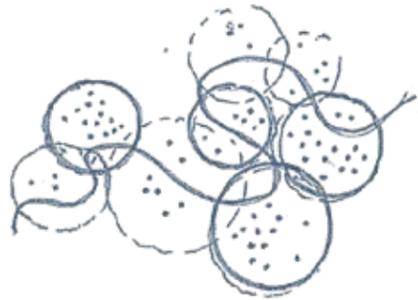
Next steps

- Work with existing local services and organisations (The Southern Initiative, Ministry of Social Development, Auckland Tourism, Events and Economic Development, Amotai etc.) to establish how Te Whakaoranga o Te Puhinui can support local innovation, employment and enterprise. Establish what functions and activities need to be accommodated to realise this.
- Establish whether the Innovation, Employment and Enterprise Hub should be integrated with other supporting land uses/ facilities or be a stand-alone facility, and who is best placed to help with the establishment and running of the hub.
- Establish a joint funding application for the Crown's Jobs For Nature programme with the wider Auckland Council and Sustainable Business Network working group.

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development

2. Indigenous and Social Procurement



Embed a procurement strategy that achieves positive social, economic, environmental and cultural outcomes across Te Puhinui including significantly lifting Maaori social and economic well-being.

Design Guidelines

- Use indigenous and social procurement to engage local service providers in delivery of local services.
- Work closely with existing programmes to integrate social procurement opportunities within Te Puhinui projects and initiatives including Amotai, Ministry of Social Development, The Southern Initiative and Two in a Ute.
- Where possible, influence the practices within the supply chain to be consistent with the goals of Te Puhinui indigenous and social procurement initiative.
- Promote and where possible enable Maaori well-being and use of maatauranga Maaori through social procurement practices.
- Support culture-led approaches to community development and empowerment.
- Encourage and support activities and actions which contribute to building capacity and capability of local Maaori (and other targetted groups) in Te Puhinui.
- Encourage activities and actions which contribute to community building and/or strengthening social capital.
- Seek opportunities to partner with or subcontract mana whenua authorities, Maaori businesses and social enterprises and mataawaka organisations.
- Engage local Maaori and other targeted groups in Te Puhinui in the design and/or delivery of local goods and services.

Next steps

- Work with Amotai to create a database of existing local organisations, businesses and social enterprises who can provide services in support of the regeneration of Te Puhinui.
- Conduct research to determine the skills required and the feasibility and viability of using social procurement to engage locals with these skills in the regeneration of Te Puhinui.

Aho/Thread



Tangata | People

Parent Initiative

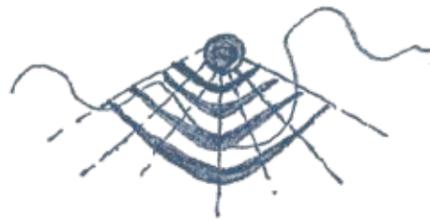


Te Whanaketanga Oohanga o Te Puhinui
Te Puhinui Economic Development

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development

3. Rangatahi Tuu Kaha / Te Puhinui Youth Development Programme



Support a Te-Puhinui-based initiative for rangatahi/youth connected to Te Puhinui in order to facilitate the development of life skills, and provide skills training and pathways to local employment.

Design Guidelines

- Work with The Southern Initiative to support a Te-Puhinui-based initiative for rangatahi/youth connected to Te Puhinui.
- Promote and support the development of life skills and provide skills training and pathways to local employment for local youth in Te Puhinui.
- Explore youth apprenticeship opportunities.
- Encourage and support activities and actions which contribute to building capacity and capability of local youth in Te Puhinui.
- Explore opportunities to partner with local institutions to provide scholarships to support and foster local creative talent.
- Seek to collaborate with local partners already delivering complementary programmes, i.e. existing or new rangatahi networks, local education providers and kura (formal and alternative).
- Prioritise and advocate for higher value training and employment opportunities.
- Seek opportunities for rangatahi to design and shape some of the other Puhinui initiatives including understanding how to engage meaningfully with Te Puhinui community.
- Seek opportunities to learn, grow and heal through our relationship and understanding of Te Puhinui.

Next steps

- Coordinate with The Southern Initiative regarding proposed youth development programme and opportunities within Te Whakaoranga o Te Puhinui programme.
- Seek partnership and/or support from existing youth development agencies and schools in the catchment including local iwi.

Aho/Thread



Tangata | People

Parent Initiative

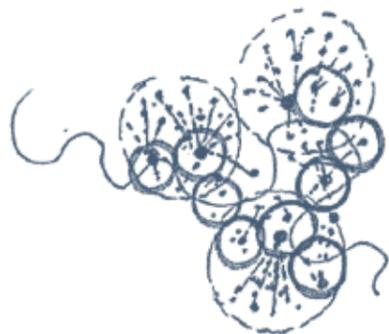


Te Whanaketanga Oohanga o Te Puhinui
Te Puhinui Economic Development

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development

4. Te Puhinui Displacement and Resettlement Manaaki Strategy



Promote and provide a sense of belonging, connection, and housing security to Te Puhinui residents most vulnerable to displacement as a result of urban restructuring in a way that enhances sense of place, health and well-being, and mitigates the negative effects of gentrification.

Design Guidelines

- Undertake assessment of potential and likely impacts on local residents resulting from development based on the Auckland Unitary Plan and the outcomes sought by the Manukau Framework Plan.
- Investigate the potential of the following strategies to mitigate the displacement of local communities:
 - Community investment trusts
 - Anchor institutions
 - Shared equity housing
 - Decommodifying housing
 - Inclusive financing
 - Limited equity housing
 - Tenant opportunity to purchase
 - Right to counsel and rent control
 - Papakaainga housing.
- Support the establishment and operations of Community Land Trusts in Te Puhinui enabling community residents to secure affordable access to land and housing and ensure the long-term affordability of housing.
- Support community land trusts to hold land, assets and/or infrastructure on behalf of Te Puhinui place based communities.

Next steps

- Commission an options assessment to determine the most viable and feasible strategies and institutions to support residents' long-term occupancy in Te Puhinui.
- Establish partnerships and support from local Agencies currently addressing this issue (such as The Cause Collective).
- Conduct feasibility study into a Te Puhinui Community Land Trust.

Aho/Thread



Tangata | People

Parent Initiative



Te Whanaketanga Oohanga o Te Puhinui
Te Puhinui Economic Development

Te Whanaketanga Oohanga o Te Puhinui

Te Puhinui Economic Development

5. Te Puhinui Philanthropy



Establish mechanisms to promote private investment in the regeneration of Te Puhinui.

Design Guidelines

- Identify opportunities and additional benefits that could result from philanthropic investment in regeneration efforts and build a business case for these.
- Explore opportunities to work with philanthropists to leverage and amplify regenerative outcomes from existing projects and programmes of work.

Next steps

- Establish strategic partnership, and seek support from existing philanthropic organisations.
- Raise profile and identity of Te Whakaoranga o Te Puhinui to increase likelihood of philanthropic investment.

Aho/Thread



Tangata | People

Parent Initiative



Te Whanaketanga Oohanga o Te Puhinui
Te Puhinui Economic Development

Case study #4 Dudley Neighbourhood Initiative

Location_ Boston, USA

Size/Scale_ 12ha

Date_ 1988 - ongoing

Who is involved_ Local Community, Sponsors, Partners and the Local City Council

Website Links_

dudleyneighbors
centerforneweconomics

Summary of the project_

A Community Land Trust is a legal, non-profit entity, established to own and manage multiple sections of land on behalf of a particular community. This land is then leased to the user and any asset, such as a house built on the land is owned by the land user. This is achieved by structuring ownership in several distinctive ways:

- Land is treated as a common heritage, not as an individual possession.
- Land is removed permanently from the market, never resold by the nonprofit owner.
- Land is put to use by leasing out individual parcels for the construction of housing, the production of food, the development of commercial enterprises, or the promotion of other activities that support individual livelihood or community life.
- All structural improvements are owned separately from the land - a ground lease lasting many years gives the owners of these structural improvements the exclusive use of the land beneath their buildings, securing their individual interests while protecting the interests of the larger community.

By reducing and potentially removing the cost of the land from the housing market, Community Land Trust make homes more affordable.

Relevance to Te Puhinui Strategic Initiatives



Case study #5

Common Unity Project

Aotearoa

Location_ Lower Hutt, Wellington

Size/Scale_ Across Lower Hutt

Date_ 2012 - ongoing

Who is involved_ Local community, schools and organisations

Website Links_
www.commonunityproject.org.nz

Summary of the project_

The Community Unity Project is a registered charity that works collaboratively with community, schools and organisations across Lower Hutt to help build a local food ecosystem to address the lack of accessible, affordable, healthy food in their community. The project has been developing a self-fertilising ecosystem by transforming borrowed lawns into organic, intensively productive micro-farms across the Hutt Valley. It is growing food while creating employment, feeding hungry school children and increasing accessibility of healthy food via a co-operative grocery.

The Common Unity project is an outstanding example of how a local initiative that initially focused on feeding children and low-income members of the community grew into a multi-branched series of programmes and social enterprises that teach lifetime skill training in farming, horticulture, business development, creativity, construction and transformation. The Common Unity project demonstrates how community collaboration, skill-training programmes can lead to pathways to employment and how local business development opportunities can grow from single ideas and can result in enhanced whaanau and community health and prosperity. Projects like this could be run through the marae, local community organisations and in collaboration with local schools.

Relevance to Te Puhinui Strategic Initiatives



Case study #6 Renaissance Block Challenge

Location_ Oswego, USA

Size/Scale_ Neighbourhoods

Date_ 2013 - ongoing

Who is involved_ Local Community, Banks, sponsors and philanthropy foundations, government agencies

Audience_ Local residents

Website Links_

<https://www.oswegonyonline.com/>

Summary of the project_

Oswego Renaissance Association is a non-profit organisation that was formed in 2013 with the purpose of restoring local neighbourhood and community quality of life in the inner city of Oswego. The mission of the association is to promote the restoration, beautification and preservation of healthy, vibrant neighborhoods.

This is done through the Renaissance Block Challenge Grant, which provides a matching grant encouraging groups of neighbours to collaborate on improvements to their properties. Grants are matched with participants available funds and are obtainable to groups of five or more houses. The grants have to be spent on exterior home improvements, landscaping or street improvements, so that it contributes to improved shared amenities and pride of place.

The Renaissance Block Challenge is an inspiring example of how a non-profit charity organisation can instigate the restoration and preservation of public and private neighbourhood spaces and facilities by empowering and partially financing the community to do it themselves. One of the key features of this initiative is that residents collaborate with each other to develop their own vision of how to improve their neighbourhoods.

Relevance to Te Puhinui Strategic Initiatives





Whenua/place refers to the landscape foundations and built form of Te Puhinui. It recognises the ability and capacity of places to weave together taiao and tangata in a way that sustains and maintains the whole living system, to regenerate mauri.



Ngaa Tohu o Te Puhinui
Symbols of Te Puhinui

Protect, reclaim and reveal areas of cultural significance in Te Puhinui in order to strengthen, and where appropriate, celebrate the relationships between whenua/place, kaitiaki and the wider communities of Te Puhinui.

SUB-INITIATIVES

- *Te Mana o Ngaa Matukurua*
- *Te Puhinui Cultural Tohu/Markers*
- *Te Puhinui Public Arts and Cultural Taonga Integration*



Te Puhinui Food Sovereignty

Support individuals, organisations and institutions of Te Puhinui to develop greater control of the mechanisms, infrastructure and policies of food production, distribution and consumption in order to increase the health and resilience of local communities.

SUB-INITIATIVES

- *Te Puhinui Local Food strategy*
- *Te Puhinui Food Commons*
- *Ngaa Mahinga Kai o Te Puhinui | Food Gathering Sites*



Te Para Kore i Te Puhinui
Te Puhinui Zero Waste Systems

Develop a circular resource and waste system for Te Puhinui that reduces material use and the ecological footprint of the local economy.

SUB-INITIATIVES

- *Te Puhinui Resource Recovery Centre*
- *Circular Material Management*
- *Te Puhinui Local Goods and Services*



Restructuring Te Puhinui
Built Environment

Restructure Te Puhinui built environment to reconnect nature, people and place and foster vibrant, safe and accessible communities.

SUB-INITIATIVES

- *Orientate Towards and Connect to the Waters of Te Puhinui*
- *Human-scale Communities*
- *Retrofitting the Built Environment*
- *Safe and Healthy Streets*
- *Te Puhinui Backyard Initiative*



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Reclaim Te Puhinui as the central spine and primary movement corridor for the catchment, providing a continuous publicly safe and accessible link between the maunga/mountains and the moana/sea, offering a space for social gathering, recreation, play, public art and cultural expression.

SUB-INITIATIVES

- *Te Puhinui Path*
- *Te Ara Huupara o Te Puhinui | Te Puhinui Play-scape*
- *Te Puhinui Fitness Trail*
- *Te Puhinui Signage and Wayfinding*

Place foundations

Cultural landscapes

Puhinui Catchment reveals a complex and unique cultural ecosystem of interrelated settlements, travel routes, fishing, gardening, food and resource gathering areas. These activities are all closely associated with a series of prominent natural features and waterways that together form an integral part of the whakapapa, mythology, stories and history of Te Waiohua.

Te Waiohua iwi have primary mana whenua interest in Te Maanuka / the Manukau Harbour and Puhinui Catchment. Te Puhinui Peninsula is notable for its continued occupation by Te Waiohua since pre-European times due to its proximity and access to the coast for collecting kaimoana, fertile soils for food growing, and maunga for defence purposes. Puhinui is inextricably linked to the history, stories, whakapapa and mythology of Te Waiohua, who have a strong Taha wairua/spiritual association with Puhinui, which gives its people a sense of meaning and purpose. Cultural values to be protected encompass the geological, the coastal landscape, archaeological and ecological features within the catchment¹.

Through the impacts of the Musket Wars and colonisation Ngaa Matukuturua became uninhabited and local iwi lost control of their traditional territories and resource base - a situation that continues to impact on the cultural well-being of Puhinui today. During and after the Land Wars, government policy treated local Maaori as rebels, and Te Ākitai, Ngaati Tamaoho, and Ngaati Te Ata lands on the Manukau were confiscated as punishment².

Ngaa Matukurua, a long-term settlement and site of immense cultural significance to Te Waiohua, has been seriously impacted by colonisation and urbanisation. Matukutuururu has been erased and Matukutuureia has been significantly debased through extensive quarrying. Other sites of cultural significance in the catchment including the awa and estuary have also been impacted through changes in land use and urban development. Collectively this has impacted on the cultural well-being of local iwi, as well as more recent arrivals who live, work, play and learn in Puhinui. Until recently there has been very little visibility or public recognition of mana whenua sites of cultural significance.

Matukuturua Stonefields gardens are one of the few pre-European culturally significant sites that are publicly accessible that have been protected. Today this site is managed by Auckland Council as Matukuturua Stonefields Historic Reserve.

The development of the landscape values needs to be generated as a separate process led by mana whenua. It is assumed that this will include landscape values for the nested wholes of Taamaki Makaurau, Te Maanuka / Manukau Harbour as well as Puhinui Catchment to ensure the wider landscape values are understood and reflected in the regeneration of Te Puhinui.

Sustainability

In 2016, New Zealand's ecological footprint was 4.8 global hectares per person and as a whole there was a bio-capacity (addition land capacity) of 4.6 hectares per person. While New Zealand has the advantage of having

large per person bio-capacity due to low population density, if everyone alive in 2016 lived the same lifestyle as a typical New Zealander we would need the equivalent of 3 earths to meet the demands of our ecological footprint. Improving and maintaining the well-being of Te Puhinui communities while changing lifestyles in a way that reduces their ecological footprint to sustainable levels that fit within the carrying capacity of the Auckland bio-region is one of the most profound challenges of the 21st century.

Food

Food is a prerequisite for all life and yet it is often taken for granted as a key contributor to well-being in our modern globalised food system. A food system includes all processes and infrastructure involved in feeding a population: production, processing, distribution, marketing, consumption, and disposal of organic and food-related items. While there is a wide range of data available relating to the different actors in New Zealand's food system such as agriculture and primary production, transport and environmental health and community health and well-being, there is limited information about how the system works as a whole and data available for local food systems is even more limited.

While Te Puhinui was once characterised by highly productive soils and rich kaimoana resources. Matukuturua Stonefields gardens is a significant cultural landmark reflecting this historic land use. Despite its history, the current Te Puhinui food system is heavily dependent on imported food including produce. With the exception of the rural

land uses in Tootara Park and Puhinui Reserve, there is limited productive land-use activities in the catchment today. One notable exception to this is the emerging Te Maara Kai o Wirihana. Existing production on the most fertile remaining soils in the lower catchment is zoned for industrial development under the Unitary Plan.

Whilst current food systems processes are convenient and economically efficient by western standards, they have created an environmentally unsustainable, and culturally insufficient food system for many within the catchment⁴.

Organic wastes makeup 40 per cent of Aucklanders' domestic waste by weight which typically end up in landfill. There are a number of initiatives across Auckland and within Te Puhinui that are seeking to address challenges relating to food waste.

Te Puhinui natural capital and land-use patterns mean that opportunities for production in Te Puhinui should be focused on intensive, small-scale productive gardens and orchards for fresh fruit and vegetables and some livestock. Small-scale intensive systems have larger energy input per square metre than extensive systems and typically have higher yields. Three intensive food production systems suitable for Te Puhinui include intensive gardens, orchards and perennial crops and food forests.

Land use and urban form

Te Puhinui consists of a mix of low-density land uses stretching across the landscape. The land-use pattern is characterised by

1. <https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20I%20Precincts/4.%20South/I1432%20Puhinui%20Precinct.pdf>
 2. <http://www.treaty2u.govt.nz/the-treaty-today/the-manukau-claim/index.htm>
 3. Obesity Action Coalition, 2009

Place foundations

large, single-use blocks serviced by large-scale vehicular corridors, major intersections and extensive areas of surface car parking. There are limited pedestrian and cycle connections through the catchment and those that do exist are often of poor quality, require maintenance and repair and are unsafe. Most of the catchment is used for industrial, commercial and residential purposes, with small areas of rural production in the upper catchment including Tootara Park and in the lower catchment along the coast as part of Puhinui Reserve.

Prior to the 1970s, the outer areas of Auckland were largely rural with small established villages such as Papatoetoe and Manurewa interspersed across the countryside. Post-war growth resulted in mass suburbanisation stretching into the rural landscape, with South Auckland being an especially favoured area for residential development. This was also an era of major road and motorway construction with civic centres such as Manukau Central being designed and built with a strong focus on the automobile. As a consequence, Manukau's urban form is defined by the arterial routes of Great South Road and Wiri Station Road, together with the State Highway 1, Puhinui Road, Kerrs Road, Druces Road and Browns Road, and later State Highway 20.

Manukau Central has experienced intensification with developments of varying scale and quality, particularly office buildings. Small pockets of high-density apartments are also now starting to contribute to the urban landscape and built form. Development to the north and south of Manukau Central has continued to consist of low-density housing,

light industrial and large-format retail areas.

The Transform Manukau project covers 6 square kilometres and is centred around Manukau Central and Wiri neighbourhood. The intention of the project is to regenerate Manukau by building high-quality, people-oriented urban environments that empower communities and lift local well-being. Changes focus on creating a new human-scale built form within the undeveloped blocks that are more accessible through improved street and block design. Building on undeveloped sites within easy walking distance to Manukau Central is planned to develop higher-density residential housing in the form of high-rise apartment buildings and terrace housing with quality communal open spaces for residents. The Puhinui Stream provides a significant landscape feature for the Transform Manukau area and presents a unique opportunity to maximise the role of the stream as a significant shaping, connecting and identity defining element between neighbourhoods.

Circulation and transport

Manukau was developed as a car-oriented centre in the 1970s. Today Puhinui Catchment is easily accessible from the wider region with three train stations and two main highways within the catchment. On a local level however, this infrastructure restricts connectivity and accessibility within the catchment. Much of the existing residential population live a distance from Manukau Central which makes walking impractical and generally unappealing. These distances are often compounded by the large block size and structure and

generally poor-quality urban environment throughout the catchment. Access to and along Puhinui Stream is restricted with few access points and several sections of the stream are fenced off or blocked by the motorway or large industrial buildings.

According to the 2018 Census, approximately 70 per cent of people living Manukau Central, Wiri East and Puhinui East travelled to work in a car and around 40 per cent of students travelled by car to educational facilities.

Cycling infrastructure within the catchment is also poor and is generally based on the edge of busy roads and does not provide a sufficiently safe infrastructure to attract new or younger users. This is despite the fact that there are a number of residential areas at distances to the centre that would be well suited to making trips by bicycle.

While the popularity of bicycles and electric bikes is increasing in some parts of Auckland, the uptake of cycling in South Auckland has not followed this trend. Notwithstanding, there are a range of opportunities to develop dedicated cycle paths throughout Te Puhinui. Some of the parklands and open spaces that run alongside Puhinui Stream present the opportunity to connect neighbourhoods and town centres within the catchment. Unfortunately there are several locations of the stream that are severed by the state highways, rail line and arterial roads such as Kerrs Road and Wiri Station Road, which means that a continuous, uninterrupted path along the length of Puhinui Stream is difficult if not impossible, for the foreseeable future.

In 2017, Eke Panuku Development commissioned the Manukau Central Walking and Cycling Area Plan. The main objective of the Manukau Central Walking and Cycling Plan was to provide better access to the civic centre. While the plan focused on walking and cycling, it emphasised the need for improvement of public transportation which is planned in order to support the development of the Plan.

Open space network

There are 56 open spaces within Puhinui Catchment. Puhinui's open space network is concentrated in the east and west of the catchment around three main reserves: Tootara Park and Auckland Botanic Gardens in the upper catchment in the east and Puhinui Reserve along the coastal edge in the west. Other significant open spaces include Hayman Park to the west of Manukau Central, Wiri Reserve, Laurie Gibbons Memorial Park, and Manukau Sports Bowl which is outside of the catchment but within the Transform Manukau Area. There is a significant lack of open space within the industrial area in the middle of the catchment. The remaining open spaces are of mixed condition and quality and fragmented across the catchment.

Urban metabolism

In 2010, Auckland produced 1.174 million tonnes of waste for landfill. On average, every Aucklander creates around 1 tonne of solid waste, processes 60 to 110 Kgs of recyclable materials and produces 100,000 litres of wastewater per year. This means that less than one-tenth of the materials

Place foundations

processed in Auckland is recycled into another product. The remaining material is managed as waste in a linear process from extraction through to production, use and disposal.

The Auckland region currently contains two operating landfill facilities for waste disposal - Redvale Landfill and Energy Park and Whitford Landfill. Both of Auckland's landfills are already partially full and are consented to collect waste up to 2028 with a replacement facility expected to be required between 2026 and 2028. A new landfill is currently being planned 70km north of Auckland city.

The Auckland Council has set the aspirational target of Auckland becoming zero waste by 2040 with the following key milestones along the way::

- 2015 onward: The provision of consistent domestic waste and recycling services and receptacles across the region, where practicable.
- 2020: reducing domestic kerbside refuse by 30 per cent.
- 2027: reduce the council and private sector influenced waste to landfill by 30 per cent working with the commercial sector and the private waste industry to achieve these targets.
- 2031: To achieve a 40 per cent reduction in human-generated greenhouse gas emissions.
- 2040: "Zero Waste, turning waste into resources".

While Auckland Council has set these aspirational targets, its Waste Management and Minimisation Plan also projects that the region's waste will grow through to 2060.

Place foundations



Over 25 per cent of the land use in the catchment is industrial. In 2013, there were 1209 businesses located in Manukau Central, an increase of 10.9 per cent from February 2006.



Manukau Central was identified as a focus area in the Auckland Cycling Programme Business Case. The main objective of the Manukau Central Walking & Cycling Plan is to provide better access to the city centre for all modes and all users. The plan focuses on facilitating and improving the walking and cycling network as the town centre shows great potential to increase the number of local journeys taken by bike or by foot.



Aucklanders left 376,000 tonnes of rubbish and recycling on kerbsides in 2016. More rubbish is sent to landfills than is recycled. Most of the rubbish is organic (136,700 tonnes per year) with over 80 per cent of that being food waste, much of which could be composted. This is the largest contributor of greenhouse gases of all materials sent to landfill¹.

Levels of home ownership are low in Te Puhinui. In Ootara-Papatoetoe (46 per cent) and Manurewa (55 per cent) local boards, the home ownership is low compared to the regional average (61 per cent). Housing affordability is a significant issue in these communities and contributes to the transient communities phenomenon with a high proportion of renters.



Puhinui Catchment presents an absence of locally grown and healthy products and a large amount of unhealthy food outlets, with five supermarket/healthy food providers within the catchment against more than 44 unhealthy food outlets (over 24 of which are in the city centre so more easily accessible).

Waikōwhai Park Landfill was established in 1963. Residential and industrial waste had a devastating impact on the park and also contributed to the contamination of Manukau Harbour.



There are three regionally significant open spaces in Puhinui Catchment: Tootara Park, Auckland Botanic Gardens and Puhinui Reserve.



Opening in 1982, the Auckland Botanic Gardens is still a young garden. It attracts more than 950,000 visitors each year and is a member of the New Zealand Gardens Trust.



Matukutuururu (also known as Te Manurewa o Tamapahore or Wiri Mountain) erupted approximately 30,000 to 35,000 years ago. It once had a scoria cone reaching 80m above sea level before being quarried to its current height of approximately 45m.

The lava flows from the formation of Matukutuururu created Wiri Lava Cave. At 290m long it is Auckland's longest known lava cave and considered to be New Zealand's best. Matukutuureia, also known as McLaughlin's Mountain, is of a similar age as Matukutuururu.

Place constraints and challenges

Constraints and challenges are not 'bad' in and of themselves, but represent characteristics intrinsic to Te Puhinui that need to be acknowledged, understood and reframed as parameters and/or opportunities that help to determine the scope and scale of any proposal for Te Puhinui.

A constraint typically represents a non-negotiable condition that can not be 'solved' and must be worked with, whereas a challenge is a parameter that can be managed or overcome and, in some instances, reconciling forces can reframe problems into solutions.



Cultural landscape has been erased

- Many sites of significance have been destroyed or have suffered extensive damage caused through deforestation, cultivation, urbanisation and sprawl, quarrying and coastal erosion.
- Large sections of natural and cultural landscapes are not easily accessible, making them largely invisible to the public including Ngaa Matukuturua, the stone fields, Wiri lava cave and Puhinui Stream.



Extensive areas of private ownership

- Private property ownership restricts public agencies' ability to change land uses directly and is limited to influencing land use outcomes through regulation, policy, advocacy, and incentives.
- Commercial and industrial operators may not have the discretion, financial resource or motivation to invest in environmental and social outcomes.
- Private owners and governmental agencies have competing interests and priorities and do not necessarily focus on communities' priorities.



Sterile, monotonous, disorientating built environment designed for cars

- The urban form of the catchment is car-oriented and discourages the use of active modes of transport.
- The catchment has large industrial zones with limited access and connectivity for pedestrians and cyclists.
- The catchment has developed quickly without an overall strategy, resulting in a poor-quality built environment.
- Many of the open spaces are neglected and under-utilised as recreational spaces.
- The state highways and railway line segregate the catchment and limit the movement of water, wildlife and people through the catchment.



Fragmented land use

- The catchment is primarily occupied by private land with limited public access.
- Private owners do not necessarily prioritise environmental and stream health or act in the interest of the environment.
- Large areas of the same land use (i.e. industrial, residential), are disconnected from each other and contribute to a vehicle-dominated environment with poor walkability.
- There are no continuous physical links between the upper catchment and the lower catchment.
- Infrastructure including motorways and main roads and large block sizes make walking and cycling in and around Puhinui difficult and unappealing.



Limited access to and along Puhinui Stream and a lack of stream-related activities

- There is limited and isolated public interaction or interest in Puhinui Stream.
- People are visually and physically disconnected from the stream.
- Walkways along the stream are discontinued and provide limited public access points.
- One of the three regionally significant open spaces in the catchment, Puhinui Reserve, is difficult to access and not well known.
- A large section of the stream runs through industrial areas and is severed by the state highway, with very little activity and surveillance outside of work hours.



Unsafe environments, both real and perceived

- There is limited surveillance over large sections of the stream and many open spaces are isolated.
- The open spaces along the stream are not used as places of gathering and are perceived as unsafe.
- The walkways along the stream provide limited choice of route and restricted access.
- Most fences along the stream are impervious and limit eyes overlooking the stream and casual surveillance.
- The poor quality of the stream and associated open space shows a limited sense of ownership and care which discourages further use and recreation in these areas.
- Off-leash dogs are often encountered in the few areas that provide public access along the stream which discourage locals, in particular children from visiting.
- Lighting along the stream is limited and of poor quality.
- Existing urban form, both commercial and residential, largely turns its back on the stream resulting in a lack of visual and physical connection to Te Puhinui.



Extensive area of industrial land

- The industrial area represents over 25 per cent of the land use of the catchment.
- Industrial land has a high percentage of impervious surface and its run-off often contains a high proportion of contaminants.
- Large areas of single land use contribute to a vehicle dominant environment and poor walkability.
- Industrial environments often have a poor interface with adjacent public spaces and do not contribute or help activate these spaces in any way, in particular the stream and streetscape.

Place opportunities

An opportunity can serve as a catalyst for a project or may help to leverage other related projects. An opportunity may be inherent to the existing condition, or manifested by reframing a challenge as an opportunity for action.



Connection to and along Puhinui Stream

- Mai te Maunga ki te Moana - Create a walkway and cyclepath connecting the upper catchment to the harbour and back along Puhinui Stream.
- Create walking and cycling connections for the daily living, working, playing and learning needs of communities
- Improve access to and opportunities for quality immersive interactions with the awa throughout the catchment.
- Promote people physically engaging with the stream for a range of activities.



Engage and collaborate with businesses, industry and private landowners to build biodiversity

- Work with private landowners on initiatives to increase biodiversity outcomes in private spaces and gardens and improve ecological connectivity.
- Work with the two Business Improvement Districts in Puhinui to improve environmental best practice and compliance and actively participate in local stewardship.



Reveal the cultural landscapes

- Make visible and reconnect Ngaa Matukutuurua and other sites of significance to the wider landscape that gives them context and cultural significance.
- Reclaim the footprint of where Matukutuururu stood for the benefit of the wider community.

Ngaa Tohu o Te Puhinui

Symbols of Te Puhinui



Protect, reclaim and reveal areas of cultural significance in Te Puhinui in order to strengthen, and where appropriate, celebrate the relationships between whenua/place, kaitiaki and the wider communities of Te Puhinui.

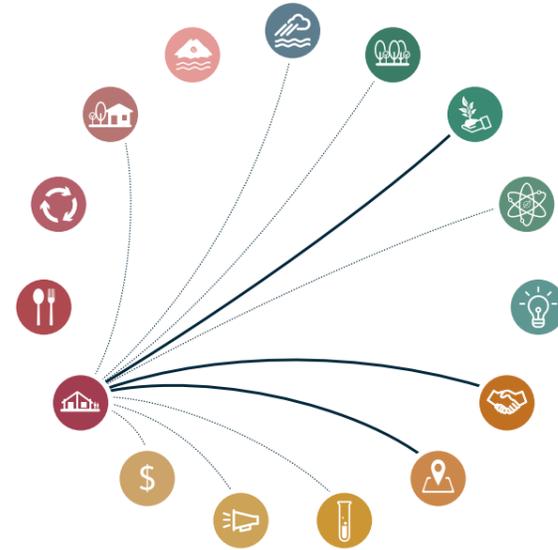
SUB-INITIATIVES

1. *Te Mana o Ngaa Matukurua*
2. *Te Puhinui Cultural Tohu/Markers*
3. *Te Puhinui Public Arts and Cultural Taonga Integration*

Relationship to other documents

- *The Auckland Plan - Focus Area 4, Protect Auckland's Significant Natural Environments.*
- *The Auckland Plan - Focus area 6: Celebrate Māori culture and support te reo Māori to flourish*
- *Tūpuna Maunga Integrated Management Plan*
- *Toi Whitiki Arts and Culture Strategic Action Plan*
- *Te Aranga Māori Cultural Landscape strategy 2006 + Auckland Council - Te Aranga Principles*

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as this initiative requires political will and financial investment to realise.

 **Te Wai o Te Puhinui / Waters of Te Puhinui** and **Te Ngahere o Te Puhinui / Te Puhinui Forest** are both synergistic with this initiative as they provide opportunities to create local cultural markers, taonga, and public arts which in turn will create opportunities to celebrate Te Puhinui and its natural environment.

 **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui/ Te Puhinui Guardianship and Stewardship** is synergistic with and can amplify this initiative. Te Waiohū and other mana whenua have a key role to play in restoring and enhancing Te Puhinui sites of significance and cultural markers and taonga fulfilling ancestral obligations and responsibilities. Additionally restoring, enhancing and celebrating local cultural sites will foster pride of place and local stewardship.

 **Te Puhinui Identity** is synergistic with this initiative as both initiatives can leverage off each other. Local stories of place can be used to celebrate and reveal Te Puhinui tohu and inform the creation of Te Puhinui public arts and cultural taonga. In turn, this celebration of sites of significance and cultural markers will create opportunities to share local stories of place.

 **Restructuring Te Puhinui Built Environment** can amplify this initiative by providing new neighbourhood and community spaces for the creation of local cultural markers, taonga and public arts.

 **Ngaa Ara o Te Puhinui / Te Puhinui Pathways** is synergistic with and amplifies this initiative. Pathways connecting the catchment and its communities provide multiple opportunities to create local cultural markers, taonga, and public arts which in turn will make these paths more attractive and desirable community spaces.

Ngaa Tohu o Te Puhinui | *Symbols of Te Puhinui*

1. Te Mana o Ngaa Matukurua



Protect, reclaim, reveal and strengthen the relationship between Ngaa Matukurua (Matukutuururu and Matukutuureia), Te Waiohau and the people of Te Puhinui to restore its mana and ensure protection into the future.

Design Guidelines

- Reclaim, reveal, protect and where appropriate provide public access to the unique geological formation of Ngaa Matukurua (Matukutuururu and Matukutuureia).
- Align with and support the Tuupuna Maunga Authority vision for Matukutuururu and recognise the spiritual, cultural and landscape value of the Maunga.

Next steps

- Continue to liaise with Tuupuna Maunga Authority to ensure coordination between the two programmes.

Aho/Thread



Whenua | *Place*

Parent Initiative



Ngaa Tohu o Te Puhinui
Symbols of Te Puhinui

Ngaa Tohu o Te Puhinui | *Symbols of Te Puhinui*

2. Te Puhinui Cultural Tohu / Markers



Identify, maintain, enhance and where appropriate, celebrate Te Puhinui unique natural, cultural and built heritage, whilst reinforcing physical and metaphysical connections to the awa and Te Puhinui distinctive identity and community.

Aho/Thread



Whenua | Place

Parent Initiative



Ngaa Tohu o Te Puhinui
Symbols of Te Puhinui

Design Guidelines

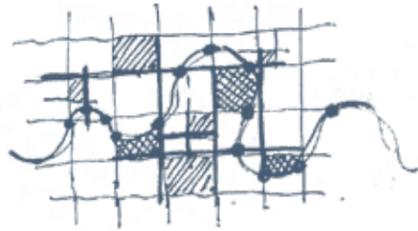
- Recognise and acknowledge Te Puhinui as a living ancestor in its own right which is an indivisible and living whole from the mountains to the sea, incorporating all of its physical and metaphysical elements.
- Recognise and support the fundamental right of Te Puhinui to be healthy, vibrant and expressive.
- Recognise the stream as an interconnected living system with its own life forces, agency and identity.
- Work with Te Waiohua and other mana whenua to identify and confirm Te Puhinui sites of cultural significance.
- Identify new places of significant natural, cultural and built heritage which have not been identified or mapped to date.
- Develop a framework to maintain, enhance and where appropriate, celebrate Te Puhinui cultural tohu and markers. Including guidelines to ensure future development is sympathetic and responsive to local landscape character and built heritage.
- Develop an interpretive signage strategy that reveals, explains and where appropriate celebrates the intrinsic value of the diverse geological, Maaori and colonial history of Te Puhinui. See also Te Puhinui Signage and Wayfinding.
- Where possible initiate and support interpretive opportunities along the stream corridor and throughout the catchment.

Next steps

- Work with Te Waiohua and the wider mana whenua project working group to identify sites of cultural significance.
- As part of the Signage and Wayfinding strategy establish opportunities for interpretive signage to mark sites of cultural significance.
- Explore potential for both physical and digital tohu.

Ngaa Tohu o Te Puhinui | *Symbols of Te Puhinui*

3. Te Puhinui Public Arts and Cultural Taonga Integration



Develop a strategy for public arts, taonga and culture design integration for Te Puhinui.

Design Guidelines

- Ensure a public arts strategy for Te Puhinui is incorporated as part of the wider Manukau Public Art strategy.
- Ensure funding is provided within project budgets to design and install public art, taonga and cultural design within Te Puhinui.
- Embed Te Waiohua ancestral names, local tohu and narratives creatively and appropriately through the landscape; and in civic spaces; architecture; interior design and public art.
- Ensure that Te Waiohua and their nominated artists and designers have a role in designing and creating taonga and cultural design integration within the catchment.

Next steps

- Liaise with Eke Panuku Auckland Council's Public Arts Team regarding the creation of a public arts strategy for Te Puhinui as part of the wider Manukau Public Art strategy.
- Seek opportunities within individual projects for the integration of cultural design, and where appropriate, public art.

Aho/Thread



Whenua | *Place*

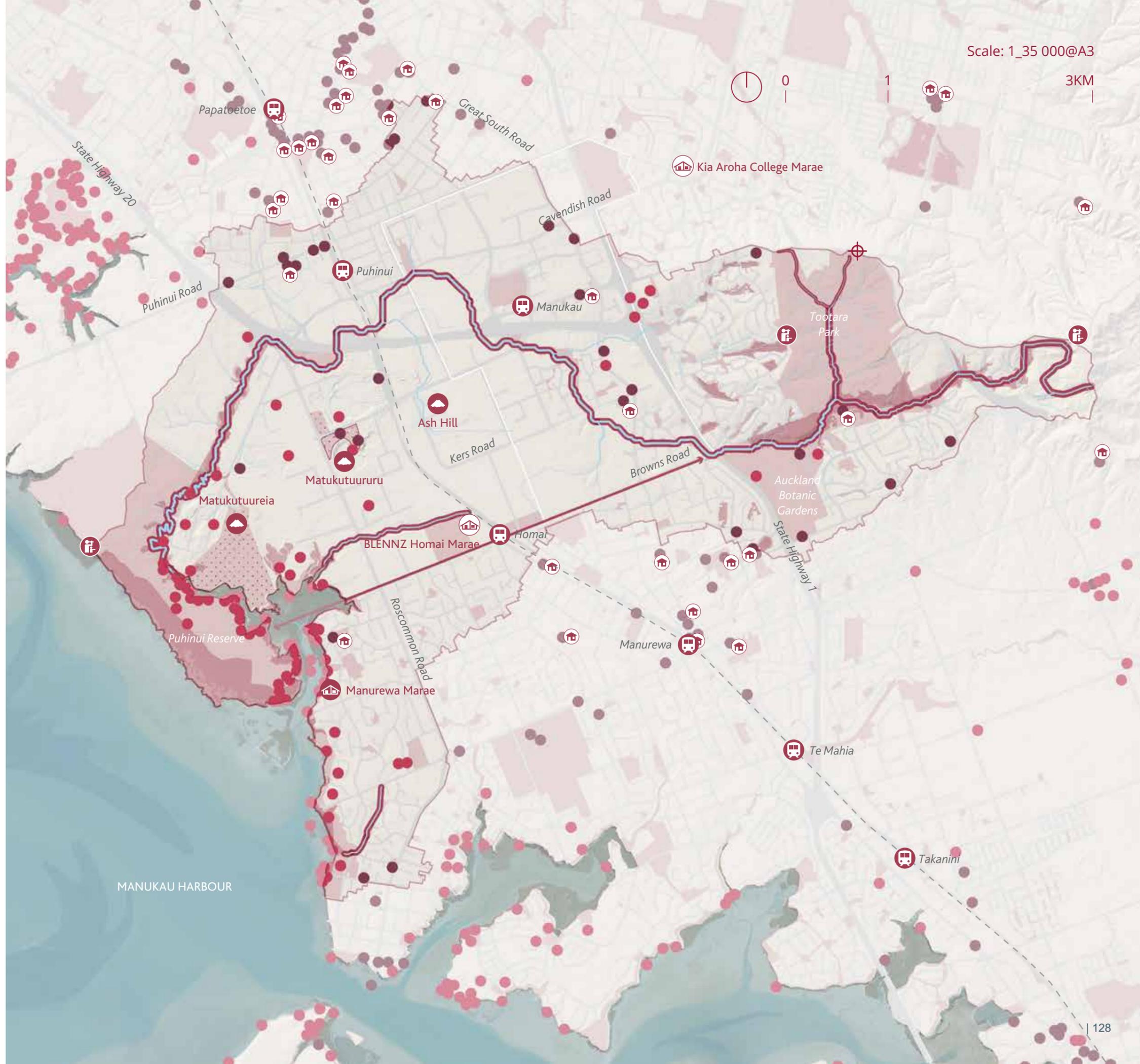
Parent Initiative



Ngaa Tohu o Te Puhinui
Symbols of Te Puhinui

Ngaa Tohu o Te Puhinui

Symbols of Te Puhinui



KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open space

1. Restore the Mana of Ngaa Matukuturua

- Maunga
- Restore the Mana
- Tuupuna Maunga Authority Land

2. Maintain and Enhance Te Puhinui Cultural Tohu / Markers

- Taura Here Marae
- Institutional Marae
- Heritage site
- Archaeological site
- Built heritage
- Significant Natural Area
- Proposed lookout

3. Te Puhinui Public Arts and Cultural Taonga Integration

- Art trail

Te Puhinui Food Sovereignty



Support individuals, organisations and institutions of Te Puhinui to develop greater control of the mechanisms, infrastructure and policies of food production, distribution and consumption in order to increase the health and resilience of local communities.

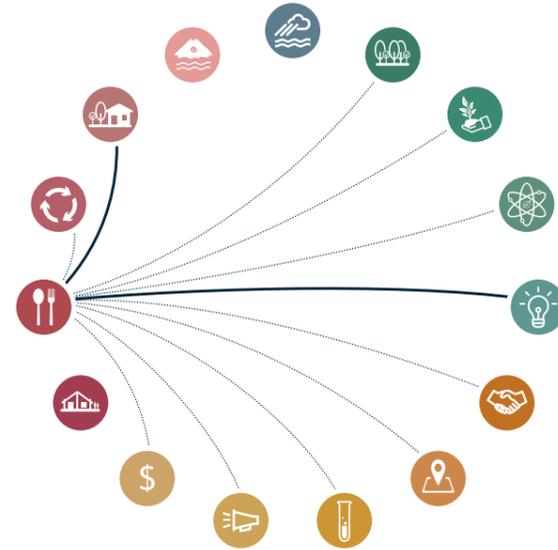
SUB-INITIATIVES

1. *Te Puhinui Local Food strategy*
2. *Te Puhinui Food Commons*
3. *Ngaa Mahinga Kai o Te Puhinui | Food Gathering Sites*

Relationship to other documents

- *Aotearoa Food Policy Network*
- *Proposed National Policy Statement for Highly Productive Land*
- *A strategy for N.Z Food Safety 2019 - 2024 , N.Z. Ministry for Primary Industry*
- *Auckland's Urban Ngahere (Forest) strategy*
- *Te Tāruke-a-Tāwhiri: Auckland's Climate Plan*

Link to Other Initiatives



Primary Connection

 This initiative is largely dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as this initiative requires political will and financial investment to realise.

 **Te Wai o Te Puhinui / Waters of Te Puhinui** and **Te Ngahere o Te Puhinui / Te Puhinui Forest** can both amplify this initiative as they provide opportunities to re-integrate food sources back into the landscape through wild harvest and perennial food sources including mahinga kai, maara, rongoaa and orchards and other food-bearing plants in public open spaces.

 **Restructuring Te Puhinui Built Environment** can amplify this initiative by integrating food production into human-scale communities.

 **Te Puungao o Te Puhinui / Te Puhinui Energy strategy** is amplified by this initiative as local food production and distribution contributes significantly to reducing the energy footprint of local diets.

 **Te Para Kore i Te Puhinui / Te Puhinui Zero Waste Systems** is synergistic and amplifies this initiative by increasing the local capture and redistribution of nutrients that can be used in local food production.

 **Te Whanaketanga Oohanga o Te Puhinui / Te Puhinui Economic Development** is synergistic with both initiatives contributing to the development of a localised food system and economy.

 **Te Puhinui Living Lab** can amplify this initiative by providing the platform and resource for ongoing research and learning about urban and regenerative agriculture in the catchment to improve local systems and processes as well as evaluate the effectiveness of this initiative.

Te Puhinui Food Sovereignty

1. Te Puhinui Local Food strategy



Develop a strategy to provide local affordable and healthy food for all individuals and whaanau to enhance community well-being and resilience.

Design Guidelines

- Promote and support local food and food security initiatives within Te Puhinui including but not limited to:
 - Teaching Gardens
 - Garden to Table
 - Auckland Seed Savers Network
 - Market Gardening, e.g. Te Maara Kai o Wirihana / Wirihana Community Gardens (Manurewa High School)
 - Urban Farming
 - Te Puhinui Food Coop(s)
 - Community Kitchens
 - Kitchen Literacy programmes
 - Te Puhinui Food Rescue
 - Homesteading and homegrown food

Next steps

- Liaise with The Southern Initiative, The Cause Collective and other agencies currently investigating food sovereignty within the catchment. Establish specific Puhinui opportunities.
- Map existing food system including areas for production, infrastructure for processing and distribution for market, consumption and waste.
- Continue to support the development of Te Maara Kai o Wirihana.

Aho/Thread



Whenua | Place

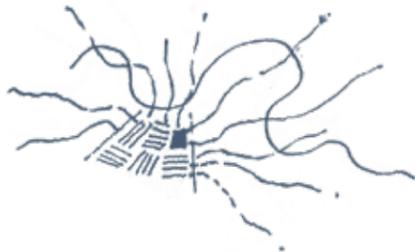
Parent Initiative



Te Puhinui Food Sovereignty

Te Puhinui Food Sovereignty

2. Te Puhinui Food Commons



Establish a food commons for Te Puhinui incorporating a physical and digital hub for logistics, a mechanism for securing arable soils for food production and an entity to acquire seed funding/financial support for sustainable food production, distribution and consumption within Te Puhinui.

Design Guidelines

- Work with existing and emerging regional food system initiatives to establish a food commons for Te Puhinui. The Food Commons could include but should not be limited to:
 - The Food Commons Trust - a non-profit, public/private entity to oversee the purchase and management of critical food-shed assets including areas of arable soils for food production
 - The Food Commons Bank - a community-owned financial institution that provides capital and financial services to local food enterprises.
 - The Food Commons Hub - Develop an integrated business enterprise that builds and manages physical infrastructure and logistics facilitates for distribution of food at different scales, and provides economies of scale, business services, technical assistance and training to new small food businesses.

Next steps

- Liaise with The Southern Initiative, The Cause Collective and other agencies currently investigating food sovereignty within the catchment. Establish specific Puhinui opportunities for food commons.

Aho/Thread



Whenua | Place

Parent Initiative



Te Puhinui Food Sovereignty

Te Puhinui Food Sovereignty

3. Ngaa Mahinga Kai o Te Puhinui / Food Gathering Sites



Re-establish sites throughout Te Puhinui for traditional wild harvest and food gathering as well as contemporary food, fibre and medicine production and harvest.

Design Guidelines

- Promote and support establishment of sites for land-based Mahinga Kai including but not limited to paa harakeke and maara rongoaa/traditional Maāori medicine including the integration of these sites into public open spaces and new housing developments.
- Work with and support the Auckland Botanic Gardens to continue research into sustainable approaches to gardening and seed collection for threatened and endangered plants.
- Support mana whenua and community aspirations for local wild harvest of sustainable freshwater and marine resources.

Next steps

- In collaboration with mana whenua, undertake a catchment-wide review of the most feasible and appropriate sites for Mahinga kai. Seek to embed these areas within future project briefs.

Aho/Thread



Whenua | Place

Parent Initiative



Te Puhinui Food Sovereignty

Te Para Kore i Te Puhinui

Te Puhinui Zero Waste Systems



Develop a circular resource and waste system for Te Puhinui that reduces material use and the ecological footprint of the local economy.

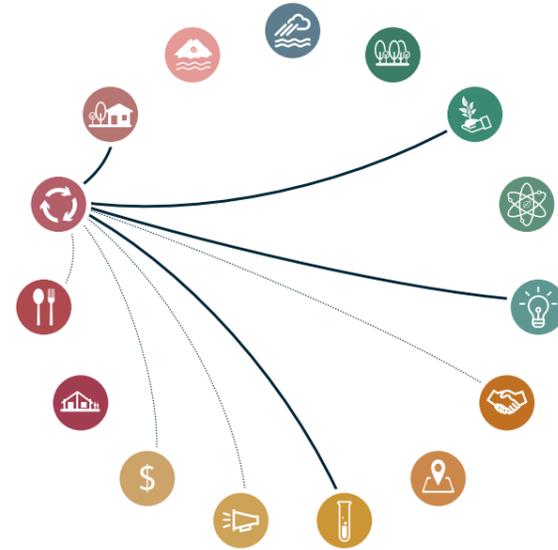
SUB-INITIATIVES

1. Te Puhinui Resource Recovery Centre
2. Circular Material Management
3. Te Puhinui Local Goods and Services

Relationship to other documents

- Te Mahere Whakahaere me te Whakaiti Tukunga Para i Tāmaki Makaurau 2018 / Auckland Council Waste Minimisation Plan 2018
- New Zealand Waste strategy
- New Zealand Energy Efficiency and Conservation strategy 2017-2022
- New Zealand Energy strategy to 2050
- Low Carbon Auckland: Auckland's Energy Resilience and Low Carbon Action Plan - July 2014
- Zero Waste Strategies for Councils - Ministry of the Environment
- Te Tāruke-a-Tāwhiri: Auckland's Climate Plan

Link to Other Initiatives



Primary Connection

This initiative is somewhat dependent on **Te Mana Whakahaere o Te Puhinui / Te Puhinui Leadership and Decision Making** as this initiative requires political will and financial investment to realise.

This initiative is both synergistic with and dependent on **Te Kaitiakitanga me Te Tiakitanga o Te Puhinui / Te Puhinui Guardianship and Stewardship**. They both encourage the efficient use of resources to reduce Te Puhinui ecological footprint and environmental impact and rely on corporate responsibility initiatives to develop and contribute to local resource management and to support the provision of local goods and services.

Te Puungao o Te Puhinui / Te Puhinui Energy strategy is synergistic with this initiative as these two initiatives focus on the efficient use of energy and materials within the catchment - more efficient and local use and re-use of materials will decrease energy use transport needs. Developing local energy generation will require more efficient and creative use and re-use of local resources.

Te Whanaketanga Oohanga o te Puhinui / Te Puhinui Economic Development is synergistic with this initiative. It can provide the skills and job training, local employment and innovation for local resource recovery, the development of circular material

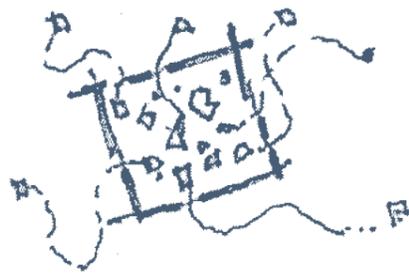
management systems within the catchment and support businesses to provide and procure local goods and services. This initiative also provides the impetus for resource-and-materials-management-related economic development and a pipeline of resource management initiatives.

This initiative is synergistic with and amplifies **Te Puhinui Food Sovereignty** by increasing the local capture and redistribution of nutrients that can be used in local food production.

Te Para Kore i Te Puhinui

Te Puhinui Zero Waste Systems

1. Te Puhinui Resource Recovery



Support/establish a local community resource recovery centre which facilitates the salvage, reuse, repair, upcycling and redistribution of useful materials, tools and resources.

Design Guidelines

- Support and build on the existing intent to create a South Auckland resource recovery centre as part of the network of 12 community recycling centres across Auckland. The resource recovery centre should include infrastructure and facilities to compost, salvage, reuse, repair and upcycle materials and shops on site to sell and redistribute usable materials, tools and resources.
- Seed fund a coordinator role to help establish a resource recovery programme for Te Puhinui.
- Provide incentives for participation in the resource recovery program.
- Create local employment opportunities and embed social procurement outcomes within the resource recovery centre.

Next steps

- Continue to liaise with Auckland Council regarding the ideal location for a South Auckland-based resource recovery centre.
- Identify and quantify existing salvageable resource and repair flows within the catchment.
- Investigate existing supply chains to identify opportunities for maximising re-use and recycling of products and materials.

Aho/Thread



Whenua | Place

Parent Initiative

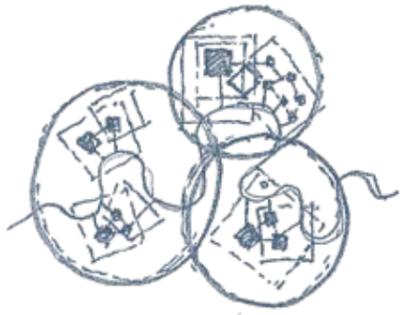


Te Para Kore i Te Puhinui
Te Puhinui Zero Waste Systems

Te Para Kore i Te Puhinui

Te Puhinui Zero Waste Systems

2. Circular Material Management



Develop circular resource management frameworks for two complementary and distinct systems - one for organic materials that are processed with the cycles of nature and one for technological materials that include the cycles of industry and the mining of non-renewable resources in order to create pathways for employment and reduce the ecological footprint of Te Puhinui.

Aho/Thread



Whenua | Place

Parent Initiative



Te Para Kore i Te Puhinui
Te Puhinui Zero Waste Systems

Design Guidelines

- Support social advocacy for producers and consumers aimed at reducing the consumption of throw-away products and packaging and de-normalising waste.
- Support the council and commercial sector collaborate to manage organic materials including food scraps, garden cuttings and other compostable materials; as well as technical materials including plastic, construction and demolition waste and used electronics.
- Seed fund a coordinator role to help establish a resource management programme for Te Puhinui.
- Develop education and employment programmes for circular material management initiatives and de-normalising waste.
- Support continued improvement of kerbside rubbish and recycling collections as well as the introduction of collection of food scraps.
- Support the creation of community composting initiatives.
- Increase the responsibility of both consumers and producers of throwaway products and packaging through the introduction of public policy such as Extended Producer Responsibility, which “establishes a legal chain of producer custody that extends through the entire product life cycle”.

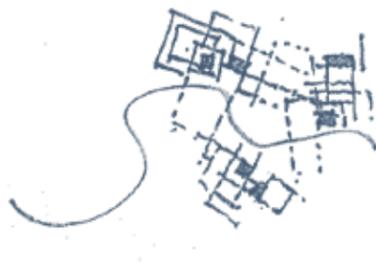
Next steps

- Establish what existing programmes and resources there are within the catchment to support circular material management.
- Work with the Waste Solutions team to provide circular material management guidance to existing projects and initiatives within the catchment.

Te Para Kore i Te Puhinui

Te Puhinui Zero Waste Systems

3. Te Puhinui Local Goods and Services



Develop economic capacity to replace imported materials, goods and services with local alternatives in order to support local economic development.

Design Guidelines

- Undertake detailed assessment exploring the potential for import replacement in Te Puhinui. The assessment should investigate the raw materials, goods and services coming in and out of Te Puhinui and the potential for replacement with local production, services and expertise.
- Provide incentives to replace imports with local raw materials, goods, services, manufacture and expertise.

Next steps

- Undertake a detailed assessment exploring the potential for import replacement in Te Puhinui. The assessment should investigate the raw materials, goods and services coming in and out of Te Puhinui and the potential for replacement with local production, services and expertise.

Aho/Thread



Whenua | Place

Parent Initiative



Te Para Kore i Te Puhinui
Te Puhinui Zero Waste Systems

Restructure Te Puhinui Built Environment



Restructure Te Puhinui built environment to reconnect nature, people and place and foster vibrant, safe and accessible communities.

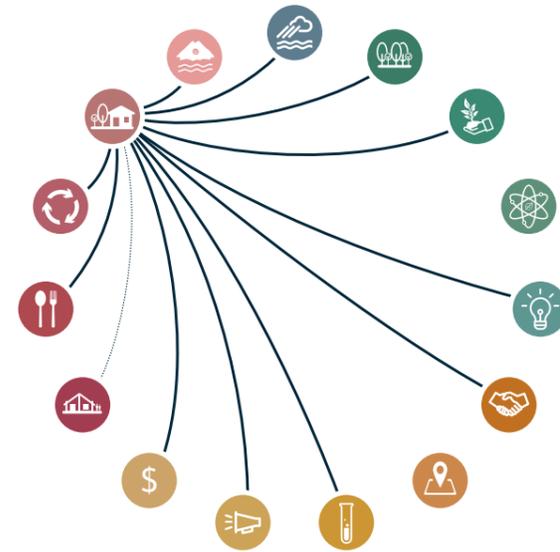
SUB-INITIATIVES

1. *Orientate Towards and Connect to the Waters of Te Puhinui*
2. *Human-scale Communities*
3. *Retrofitting the Built Environment*
4. *Safe and Healthy Streets*
5. *Te Puhinui Backyard Initiative*
6. *Open Space Network*

Relationship to other documents

- *Manukau Framework Plan*
- *National Policy Statement on Urban Development 2020*
- *Auckland Plan 2050 - Focus area of the Homes and Places*
- *Te Tāruke-a-Tāwhiri: Auckland's Climate Plan*
- *Auckland Design Manual*
- *Urban Street and Road Design Guideline - Auckland Transport*
- *Kāinga Ora The simple guide to urban design & development + Landscaping design guide*
- *Parks and Open Space Strategic Action Plan - Auckland Council*
- *Handbook for Tactical Urbanism Aotearoa.*
- *Manukau Central Walking and Cycling Action Plan.*
- *Local Board Greenway Plans and the Safe Network Programme.*
- *Local Path Design Guide*
- *Walk Cycle strategy - Auckland Transport*
- *Parks and Open Space Strategic Action Plan - Auckland Council*
- *Te Aranga Māori Cultural Landscape Strategy 2006 + Te Aranga Design Principles - Auckland Council*
- *Sport and Recreation Strategic Action Plan*
- *Signage and Wayfinding Guidelines - Auckland Transport*
- *Navigation and Signage - Auckland Design Guide*

Link to Other Initiatives

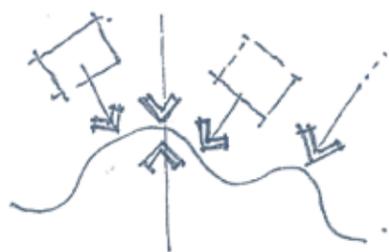


Primary Connection

This is a keystone initiative, one that has an extremely high impact on the functioning and well-being of the whole Te Puhinui living system. Due to the top-down nature of this initiative - it requires public agencies, developers and landowners to invest and commit for it to be effective - it directly impacts on the built form of Te Puhinui and therefore has the potential to amplify or hinder many of the other strategic initiatives such as **Te Puungao o Te Puhinui / Te Puhinui Energy strategy**, **Ngaa Ara o Te Puhinui / Te Puhinui Pathways**, and **Te Whanaketanga Oohanga o Te Puhinui / Te Puhinui Economic Development**.

Restructure Te Puhinui Built Environment

1. Orientate Towards and Connect to the Waters of Te Puhinui



Structure the urban environment to provide visual and physical access to Te Puhinui to support and strengthen the relationship of communities with the awa and stream corridor.

Design Guidelines

- The physical layout of streets, buildings and paths in new and redeveloped neighbourhoods should reinforce and enable visual connection and physical access to Puhinui Stream, Homai and Blackgate Reserve Streams and the estuary and coastal environment.
- Explore opportunities to create visual connection and physical access to Puhinui Stream, Homai and Blackgate Reserve Streams and the estuary and coastal environment in existing neighbourhoods.
- Provide opportunities for immersive nature experiences and physical connection to the waters of Te Puhinui.
- Provide safe and appropriately located bridges and river crossings to ensure that communities are connected to the stream and each other.

Next steps

- Utilise existing planning processes (such as design guidelines and reviews) to advocate for and ensure buildings and connections respond appropriately to Te Puhinui.
- Review and provide input into all Transform Manukau developments adjacent to Te Puhinui.

Aho/Thread



Whenua | Place

Parent Initiative



Restructure Te Puhinui Built Environment

Restructure Te Puhinui Built Environment

2. Human-scale Communities



Increase the density and mix of uses of local neighbourhoods so that the people who live, work, play and learn in Te Puhinui have the opportunity to walk to meet all of their daily needs.

Design Guidelines

- Promote the grouping of structures, clustering of activities and shared use of facilities.
- Sensitive intensification - Ensure that land use intensification is sensitive to the character of existing neighbourhoods and where feasible intensify incrementally. For example intensify from a single family home to a duplex or terrace or from terrace housing to small-scale walk-up apartment rather than from a single family home to an apartment building.
- Scale and form - Develop communities that are legible and easily understood and navigated by pedestrians through appropriate form/massing, scale/height and width and design quality with an average maximum building height of 4 stories, with destinations and focal points easily observed and reached by foot or bicycle.
- Multigenerational - create communities that provide for people of all ages and throughout their life stages - infant (0 to 3 years), young child (3 to 6 years), child (7 to 12 years), youth (13 to 17 years), young adult (18 to 25 years), adult (25 to 65 years) and elderly (over 65 years).
- Mix of housing - develop communities that allow for different family and living arrangements. For example contemporary papakainga housing of mixed density.
- Universally accessible - Create communities that are accessible to people of all ages and abilities.
- Affordable communities - Develop communities that provide housing options for low-income families.
- Multicultural communities - Develop communities that allow people from a wide range of ethnic backgrounds and cultures to live, work, learn and play in a way that fits with their beliefs, behaviours and lifestyles.
- Adaptable communities - Design spaces and buildings in a way that allows them to be adapted for different uses over time.
- Access to nature - Ensure that the people of Te Puhinui have access to areas of 'wild nature' not under the direct influence of people.
- Access to food - Ensure people living in Puhinui have opportunity to grow their own food and have access to locally produced food.
- Playful communities - Integrate play into communities through purpose-built playgrounds and spaces as well as places that allow for and encourage play - for example a play trail through a neighborhood.

Next steps

- Conduct a 'complete community audit' to identify the walkability of neighbourhoods for daily needs - live, work, learn, play.
- Ensure existing and future Development Plans and Open Space Strategies consider and reflect Te Whakaoranga o Te Puhinui and its charter. Where appropriate embed key principles in design guidelines.
- Utilise existing planning processes (such as design guidelines and reviews) to advocate for and ensure human-scaled communities within developments in the catchment.

Aho/Thread



Whenua | Place

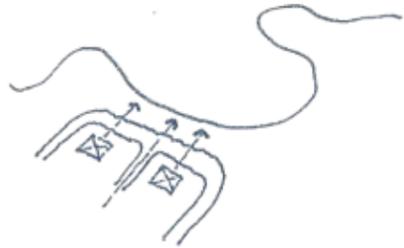
Parent Initiative



Restructure Te Puhinui Built Environment

Restructure Te Puhinui Built Environment

3. Retrofitting the Built Environment



Maintain and systematically retrofit Te Puhinui built environment to improve the energy and water efficiency of existing buildings and to diversify land uses to contribute toward vibrant walkable communities.

Aho/Thread



Whenua | Place

Parent Initiative



Restructure Te Puhinui Built Environment

Design Guidelines

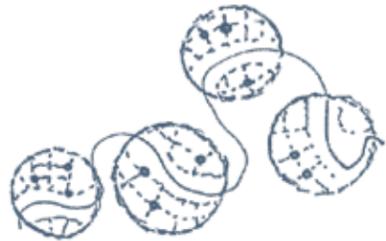
- Embed a place sourced ecological design approach within all local projects, ensuring that a deep understanding of Te Puhinui is reflected in our actions, designs and resulting infrastructure.
- Encourage Creative Infill - Transform the way we use our buildings and neighbourhoods so that those areas of the built environment that stand empty and unused throughout the day or night are used more intensively day and night.
 - Ensure the built environment is safe and welcoming and embeds the principles of Crime Prevention Through Environmental Design:
 - Reduce fence height to allow passive surveillance of the public realm.
 - Ensure that vegetation does not create entrapment areas or obscure sightliness.
 - Ensure appropriate lighting of public spaces.
 - Seek to activate edges of public spaces.
 - Seek local community and police input into the design of the public realm to ensure that known crime hazards are reduced.
- Retrofit existing sections and neighbourhoods and encourage infill development to:
 - Diversify land uses with a mix of complementary land uses.
 - Promote and allow for different models of housing including the integration of tiny homes and micro-lease agreements.
- Retrofit existing buildings to:
 - Diversify existing land uses including shared/community facilities, micro-tenancies, maker spaces and small-scale industrial uses and residential accommodation.
 - Be more energy efficient through the incorporation of passive design principles:
 - Living spaces including shared spaces and bedrooms are located on the north side of the building to ensure they have access to the sun for heating and light. Utility spaces including bathroom and laundry are located to the south.
 - The building envelope is insulated and uses double glazing to keep heat in during the winter and out during the summer.
 - Focus glazing to the north of the building, covering approximately 40 per cent of total external wall space.
 - Buildings incorporate thermal mass that stores heat during the day and releases the heat during the evening.
 - Buildings incorporate openings that allow the space to be ventilated naturally and without the need for mechanical devices.
 - Use water more efficiently through water harvesting and reuse grey water for non-drinking purposes.

Next steps

- Seek opportunities through the Kāinga Ora and Eke Panuku Manukau programmes to retrofit the built environment.

Restructure Te Puhinui Built Environment

4. Safe and Healthy Streets



Re-imagine and establish streets as places for people of all ages and abilities to support walkable and liveable neighbourhoods and communities where people can work, play and learn.

Design Guidelines

- Design streets for the most vulnerable users, in most cases this will be pedestrians, particularly the young, the elderly and those with limited mobility.
- Promote walking, bicycling and public transit for everyday trips.
- Create a network of interconnected streets and walkways for ease of movement and choice of routes.
- Design streets as vibrant public spaces with active frontages and opportunities for activation.
- Wherever possible, design streets to meet the 10 indicators of a Healthy Street:
 - Everyone feels welcome
 - People choose to walk and cycle
 - People feel relaxed
 - Easy to cross
 - Clean air
 - Not too noisy
 - Places to stop and rest
 - People feel safe
 - Things to see and do
 - Shade and Shelter
- Expand the public transport network to increase its accessibility and effectiveness.
- Work with schools to create safe streets in and around schools and to encourage the use of active transport to get to and from school.
- Explore opportunities to use placemaking and tactical approaches to the design and implementation of street upgrades.
- Investigate the potential of converting Browns Road into an urban boulevard as part of the Te Puhinui Path.
- Wherever possible, cluster and consolidate parking to reduce the visual dominance of cars in public spaces and to free space for other uses.

Next steps

- Work collaboratively with Waka Kotahi NZ Transport Agency, Auckland Transport, Eke Panuku Development Auckland, Kāinga Ora and Healthy Families to advocate for and create safe and direct walking and cycling connections between Maangere, Manukau, Middlemore and the airport as well as improving walking and cycling in Manukau city centre.
- Promote and lobby for funding for Te Puhinui Path and the wider Greenways Plan.
- Build on lessons learnt from the current Innovating Streets programme.

Aho/Thread

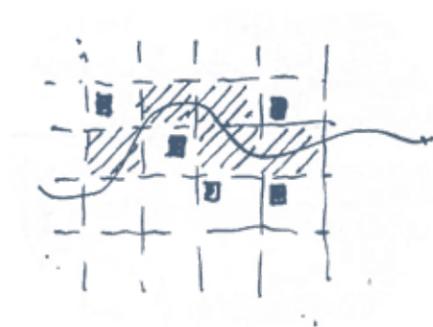


Parent Initiative



Restructure Te Puhinui Built Environment

5. Te Puhinui Backyard Initiative



Develop strategies to support homeowners and permanent residents to turn their backyards into productive landscapes for growing food, water care and providing a sanctuary for wildlife.

Design Guidelines

- Encourage people and organisations to:
 - Turn their backyards and lots into productive gardens and sanctuaries for wildlife.
 - Treat water as close to where it lands as possible with water sensitive design features and devices.
 - Turn toward and face the stream and adjacent parks and open spaces.
 - Remove their fences to create shared backyards and communal spaces.
- Develop accessible and interactive resources that provide guidance to homeowners and permanent residents for food production, water care and ecological restoration.

Next steps

- Create a physical and digital resource providing information and links to further assistance for backyard initiatives.
- Review potential partnership with Kāinga Ora and the Endangered Species Foundation - Gardenstar Programme.
- Review potential use of the Green Space Factor tool to promote better outcomes within private property.

Aho/Thread



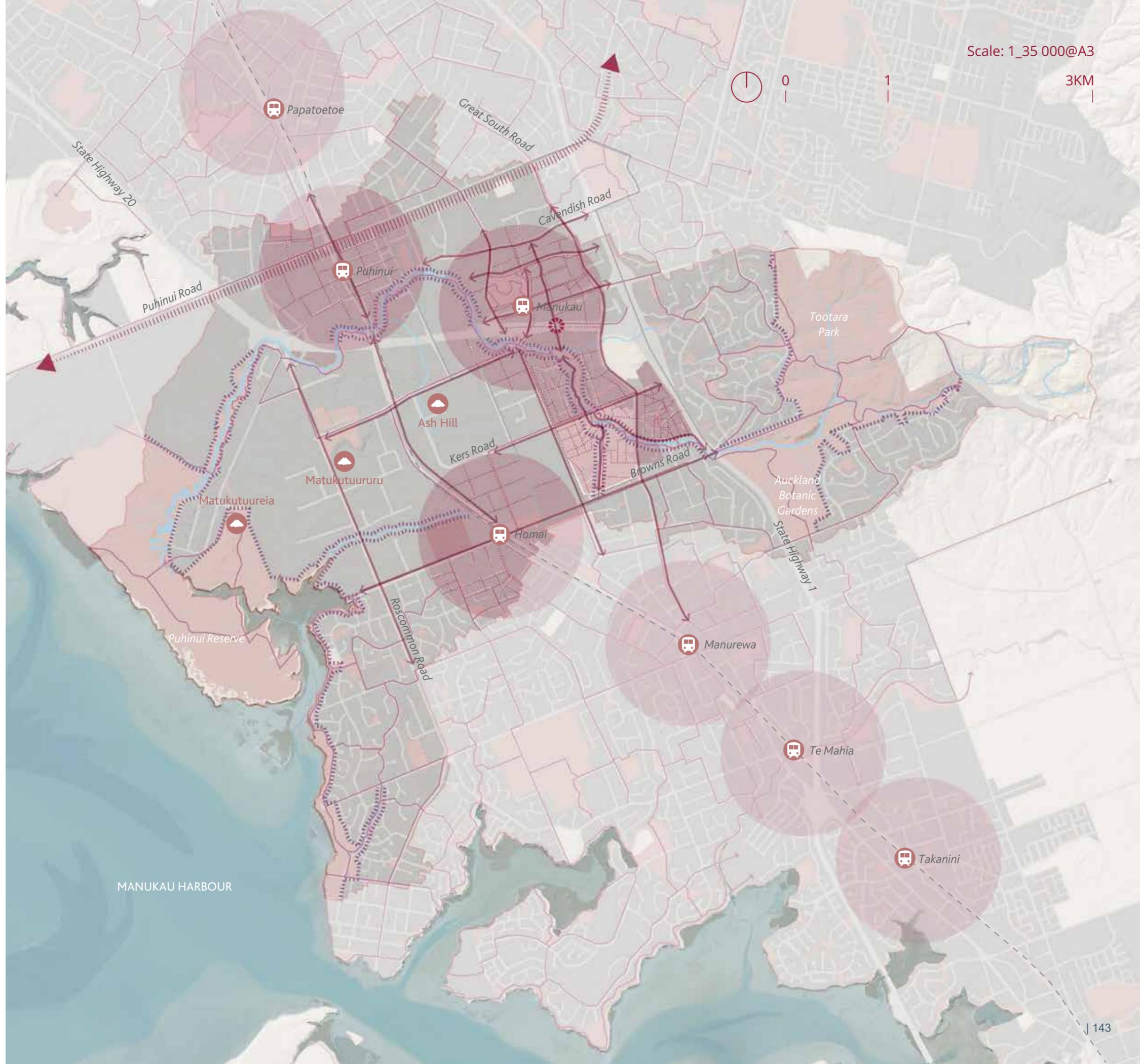
Whenua | Place

Parent Initiative



Restructure Te Puhinui Built Environment

Restructure Te Puhinui Built Environment



KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open Space

1. Orientate towards and connect to the Waters of Te Puhinui

- Orient Development Towards the Waters of Te Puhinui

2. Human-scale Communities

- Increase the density and mix of uses of local neighbourhoods in and around public transport nodes

3. Retrofitting the Built Environment

- Industrial, Residential and Business areas

4. Safe and Healthy Streets

- Key pedestrian/ cycle connections
- Activated/ walkable streets (within development areas)
- Proposed Greenway
- Auckland to Botany Rapid Transit
- Proposed bridge connection

5. Te Puhinui Backyard Initiative

- Turn people's backyards into productive landscapes for growing food, water care and providing a sanctuary for wildlife.

Ngaa Ara o Te Puhinui

Te Puhinui Pathways



Reclaim Te Puhinui as the central spine and primary movement corridor for the catchment, providing a continuous publicly safe and accessible link between the maunga/mountains and moana/sea offering a space for social gathering, recreation, play, public art and cultural expression.

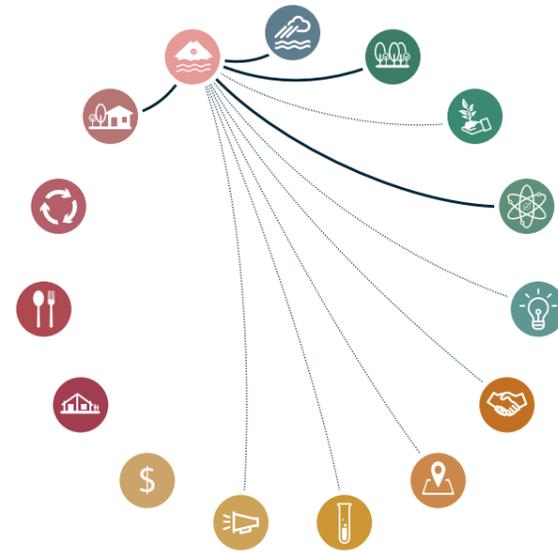
SUB-INITIATIVES

1. *Te Puhinui Path*
2. *Te Ara Huupara o Te Puhinui | Te Puhinui Play-scape*
3. *Te Puhinui Fitness Trail*
4. *Te Puhinui Signage and Wayfinding*

Relationship to other documents

- *Te Tārūke-a-Tāwhiri: Auckland's Climate Plan*
- *Manukau Framework Plan*
- *Auckland Design Manual*
- *Kāinga Ora The simple guide to urban design & development + Landscaping design guide*
- *Parks and Open Space Strategic Action Plan - Auckland Council*
- *Manukau Central Walking and Cycling Action Plan.*
- *Local Board Greenway Plans and the Safe Network Programme.*
- *Local Path Design Guide*
- *Walk Cycle strategy - Auckland Transport*
- *Parks and Open Space Strategic Action Plan - Auckland Council*
- *Te Aranga Māori Cultural Landscape Strategy 2006 + Te Aranga Design Principles - Auckland Council*
- *Sport and Recreation Strategic Action Plan*
- *Signage and Wayfinding Guidelines - Auckland Transport*
- *Navigation and Signage - Auckland Design Guide*

Link to Other Initiatives



Primary Connection

Te Wai o Te Puhinui / Waters of Puhinui is a synergistic initiative and both of these initiatives have the ability to leverage each other. For example, creating a continuous pathway from the top of the catchment to the Manukau Harbour should be developed in parallel with major stream restoration and infrastructure projects. Improvements in the stream environment will encourage people to want to access and enjoy it. Increased connectedness through pathways to the stream and within the catchment will also should create opportunities for improving water quality and stream environments.

Te Ngahere o Te Puhinui / Te Puhinui Forest is synergistic with this initiative as pathways create new opportunities for revegetation and increased canopy cover. The creation of forest patches and coastal forest enhancement creates opportunities for the creation of pathways and increased access and connectivity within the catchment.

Restructuring Te Puhinui Built Environment is synergistic with this initiative and each can leverage each other. The creation of safe and accessible links throughout the catchment reinforcing Puhinui Stream as the central spine will encourage re-orientation of buildings and communities towards the stream. In addition, Human-scale Communities and Safe and Healthy Streets will

require the development of increased access and connectivity throughout the catchment.

Te Maaramatanga o Te Puhinui / Te Puhinui innate wisdom will be amplified by this initiative as it will increase access to the stream and other natural environments, increasing our ability to learn more directly from Te Puhinui. It will also provide multiple opportunities throughout Te Puhinui to celebrate and express te reo Waiohū into signage.

Ngaa Ara o Te Puhinui | *Te Puhinui Pathways*

1. Te Puhinui Path



Create a shared walkway along Puhinui Stream from Tootara Park in the upper catchment to Puhinui Reserve in the lower catchment to provide a continuous publicly accessible link from maunga/mountains to moana/sea.

Aho/Thread



Whenua | Place

Parent Initiative



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Design Guidelines

- Wherever possible, create a shared path along both sides of Puhinui Stream that is safe for people of all ages and abilities and is designed for the most vulnerable users, in most cases this will be the young, the elderly and people with physical disabilities.
- Minimise the number of conflict points along the path including areas with high vehicle numbers and high speeds.
- The path should be consistent with The Ministry of Justice's Seven Qualities of Safer Spaces: access, surveillance and sightlines, clear and logical layout, a mix of activity, a sense of ownership, high-quality environments and physical protection.
- Integrate Te Puhinui Path into a broader movement network.
- Investigate the potential to create a loop track connecting the Botanic Gardens and Tootara Park directly with Puhinui Reserve through the retrofit and greening of Browns Road into an urban boulevard, a shared path along Homai Stream and a new walkway across Te Puhinui Estuary to Puhinui Reserve.
- Provide for a range of spaces, experiences and activities along Te Puhinui path in a way that encourages engagement with the awa including immersive nature experiences and physical connection to the waters of Te Puhinui.
- Materials and construction - Wherever possible utilise local, durable materials and ecologically sensitive construction techniques and methods.
- Crossings - Ensure that the number, location and design of stream crossings minimise their potential impact on natural flooding processes.

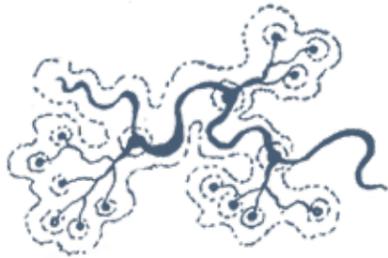
Next steps

- Undertake a feasibility study for Te Puhinui Path identifying logical project areas and potential alignment to the existing work programme and associated funding agencies.
- Seek funding to establish a concept design for the pathway ensuring that there is consistency across the pathway design allowing it to be delivered in sections, by different agencies over time.
- Seek additional funding for the construction of the path not associated with existing development projects.

Ngaa Ara o Te Puhinui

Te Puhinui Pathways

2. Te Ara Huupara o Te Puhinui / Te Puhinui Play-scape



Create a connecting network of play elements along the stream corridor to develop an educational and experiential pathway for people who live, work, learn and play in Te Puhinui, incorporating cultural and natural huupara elements where appropriate.

Design Guidelines

- Review existing play provision and ensure appropriate distribution of play elements in conjunction with Community Facilities Needs Assessment and Open Space Network Plans.
- Te Ara Huupara - Locate culture play elements along key pedestrian routes to maximise accessibility and contribute to the sequence of visual and spatial experiences through Te Puhinui.
- Nature Play - Where possible utilise natural interventions and materials rather than built structures/equipment.
- Play for everyone - Provide for different use-groups and for people with varied levels of ability or physical capacity.

Next steps

- Seek support from mana whenua and funding through Maaori Outcomes Steering Group to undertake a catchment-wide huupara proposal identifying key sites and opportunities for maara huupara.

Aho/Thread



Whenua | Place

Parent Initiative



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Ngaa Ara o Te Puhinui

Te Puhinui Pathways

3. Te Puhinui Fitness Trail



Develop a strategy and fitness trail for the stream corridor and open space network to promote healthy active lifestyles.

Design Guidelines

- Locate fitness trails along key pedestrian routes to maximise accessibility and contribute to the sequence of visual and spatial experiences along Te Puhinui Path.
- Provide for different use-groups and for people with varied levels of ability and physical capacity.
- Sensitively integrate equipment and elements into the landscape to minimise visual impact, using natural interventions rather than built structures/equipment where possible.

Next steps

- Investigate what kinds of fitness trail activities/ equipment are most suited to Te Puhinui community and its current/ projected demographic.
- Review and identify key locations along the stream corridor.

Aho/Thread



Whenua | Place

Parent Initiative



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Ngaa Ara o Te Puhinui

Te Puhinui Pathways

4. Te Puhinui Signage and Wayfinding



Develop a catchment-wide wayfinding and signage strategy to provide legibility and continuity for people moving through Te Puhinui.

Design Guidelines

- Work with Te Waiohū and other project partners including Auckland Transport and Auckland Council to develop a signage strategy that is unique to Te Puhinui while still aligning with existing guidelines. The signage strategy should include:
 - Wayfinding signage that offers users direction and distances to key destinations and is placed at key decision points throughout the catchment.
 - Compliance and safety signage communicating desired outcomes and appropriate use of the different areas of the catchment.
 - Interpretive signage - See Maintain and Enhance Te Puhinui Cultural Tohu/Markers.
 - Potential incorporation of digital wayfinding and signage (such as 'Journeys of Manu').

Next steps

- Undertake a catchment-wide audit of existing signage and wayfinding and identify constraints and opportunities.
- Seek funding to initiate a signage and wayfinding strategy.

Aho/Thread



Whenua | Place

Parent Initiative



Ngaa Ara o Te Puhinui
Te Puhinui Pathways

Ngaa Ara o Te Puhinui

Te Puhinui Pathways



KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open Space

1. Te Puhinui Path

- Proposed Lookout (Further investigation required)
- Primary path
 - Existing: To be upgraded
 - Proposed: Further investigation required
- Secondary path
 - Existing: To be upgraded
 - Proposed: Further investigation required

2. Te Ara Huupara o Te Puhinui / Te Puhinui Play-scape

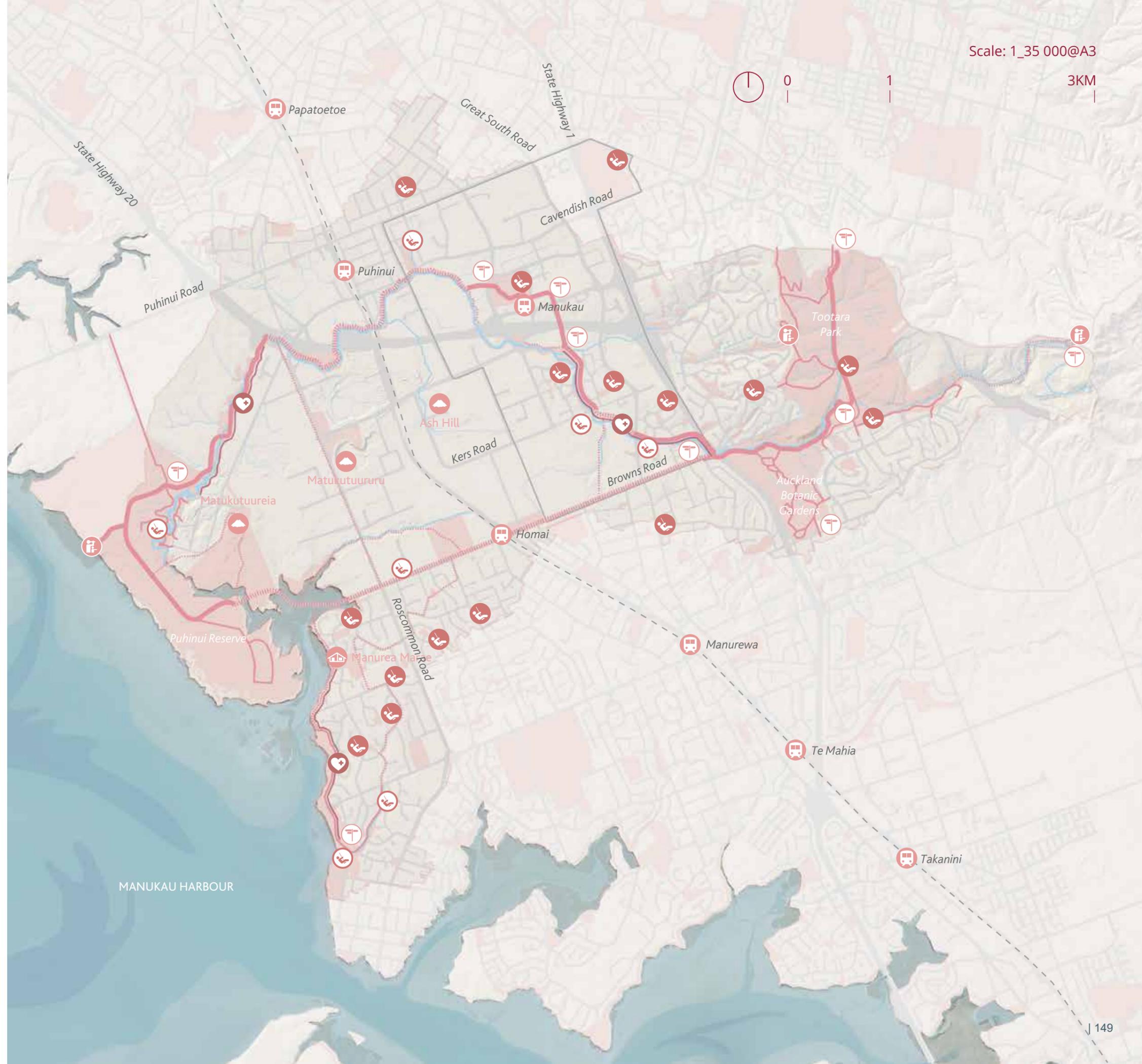
- Existing Playground
- Proposed Playground

3. Te Puhinui Fitness Trail

- Fitness trail
- Indicative only: Further investigation required

4. Te Puhinui Signage and Wayfinding

- Primary network sign
- Full signage to be investigated as part of further investigation



Case study #7

Food Commons

Location_ Worldwide

Size/Scale_ Regional

Date_ 2011 - ongoing

Who is involved_ farmers, fisheries, horticultural farmers, local and central government representatives, business enterprises, philanthropists, local communities.

Summary of the project_

The Food Commons is a whole-systems approach to local and regional food systems based around a network of physical, financial and organisational infrastructure that allows local and regional markets to operate efficiently and food-shed-based enterprises to cooperate, compete and thrive according to the principles of sustainability, fairness and public accountability.

This is achieved by increasing the number of individuals and businesses participating in food supply chains, providing communities with the opportunity to invest in and control the means of their own food security and increasing consumer choice and access to local foods.

The Food Commons is an excellent example of how local economic development, job creation and creating shorter pathways and multiple alternate pathways between producer and consumer can be developed in response to local needs, concerns and aspirations. A key recommendation of the Food Commons movement is to start with prototypes in order to test and refine systems and infrastructures over time to build in local responsiveness and resilience. The Food Commons can also be used as placed-based education sites for rangitahi and provide skills and training that could manifest into local employment.

Relevance to Te Puhinui Strategic Initiatives



Case study #8

RetroSuburbia

Location_ Hubert Street, Perth, Australia

Size/Scale_ Suburban and Urban proportion

Date_ 2007 - ongoing

Who is involved_ Property owners and the local community

Summary of the project_

Based on the ethics (and principles) of Permaculture - earth care, people care, surplus share - RetroSuburbia is an approach to adapting lifestyles and retrofitting the buildings and landscapes of a property and community in order to regenerate the environment, build community, and develop self-reliance and resilience.

This is achieved through the application of a wide range of tactics and strategies - the renovation of existing buildings to be more energy and water efficient; encouraging "creative infill" to diversify land uses; the integration of intensive food production systems including fresh vegetables, herbs, orchards and livestock such as poultry and goats for milk and cheese; the development of household and community economies for shared services and gardens, local exchange, trade and barter; as well as through gatherings, festivities and celebration.

Retrosuburbia is an empowering example of how members of a community can adapt their lifestyles and retrofit their buildings and landscapes to significantly improve the quality of their environment and become self-reliant and in doing so, more resilient.

Relevance to Te Puhinui Strategic Initiatives



Case study #9 Ecodistrict - Hope Ecovillage

Location_ Detroit, USA

Size/Scale_ Urban Neighbourhood

Date_ 1988 - ongoing

Who is involved_ Developers, Local Community, Sponsors, Partners and the Local City Council

Website Links_
<https://www.dudleyneighbors.org>
<https://centerforneweconomics.org/apply/>

Summary of the project_
An ecodistrict is an approach to urban development that views the neighbourhood as the primary unit for developing urban areas rather than individual buildings to improve environmental performance and promote social cohesion.

An excellent example of an ecodistrict is Hope Ecovillage, a suburb of Detroit U.S.A with high social deprivation. Hope Ecovillage was a neighbourhood revitalization project that has helped local low-income communities develop and govern their own sustainability plans to improve their health, education and prosperity.

This is achieved through the creation of new education and employment opportunities and the integration of shared green building technologies such as heat generation and ventilation, biogasification systems, rain-water harvesting, on-site wastewater treatment, enhanced IT infrastructure, local food production, composting food scraps and associated waste heat capture to assist with heating water.

The Ecodistrict model could be developed within the context of a marae and papakainga housing, the regeneration of older neighbourhoods or the creation of new neighbourhoods and mixed-use developments.

Relevance to Te Puhinui Strategic Initiatives



4. Grounding the strategies

In this section five distinct places within the catchment are described and used to demonstrate how the different strategic initiatives can be brought together to achieve optimal benefits for taiao/nature, tangata/people, and whenua/place.

These places are neighbourhoods located in the upper, middle and lower Puhinui Catchment. The neighbourhoods in the middle catchment are also organised by land use. Each is described by their key features and aspirational outcomes are articulated visually as well as through the use of the design guidelines which integrate a diverse range of strategic initiatives.

There are two diagrams for each neighbourhood location, one focusing on taiao/nature and the other on tangata/people and whenua/place.

Note:

- The places represented within this section are representative only. The intention is to identify patterns and characteristics typical of the different neighbourhoods within Puhinui Catchment rather than prescribe specific design outcomes.*
- The diagrams are not exhaustive. They represent only a sample of the different places in Puhinui Catchment and the strategic initiatives and guidelines outlined within this strategy.*

Aspirational outcomes for upper catchment

Taiao | Nature

Location map



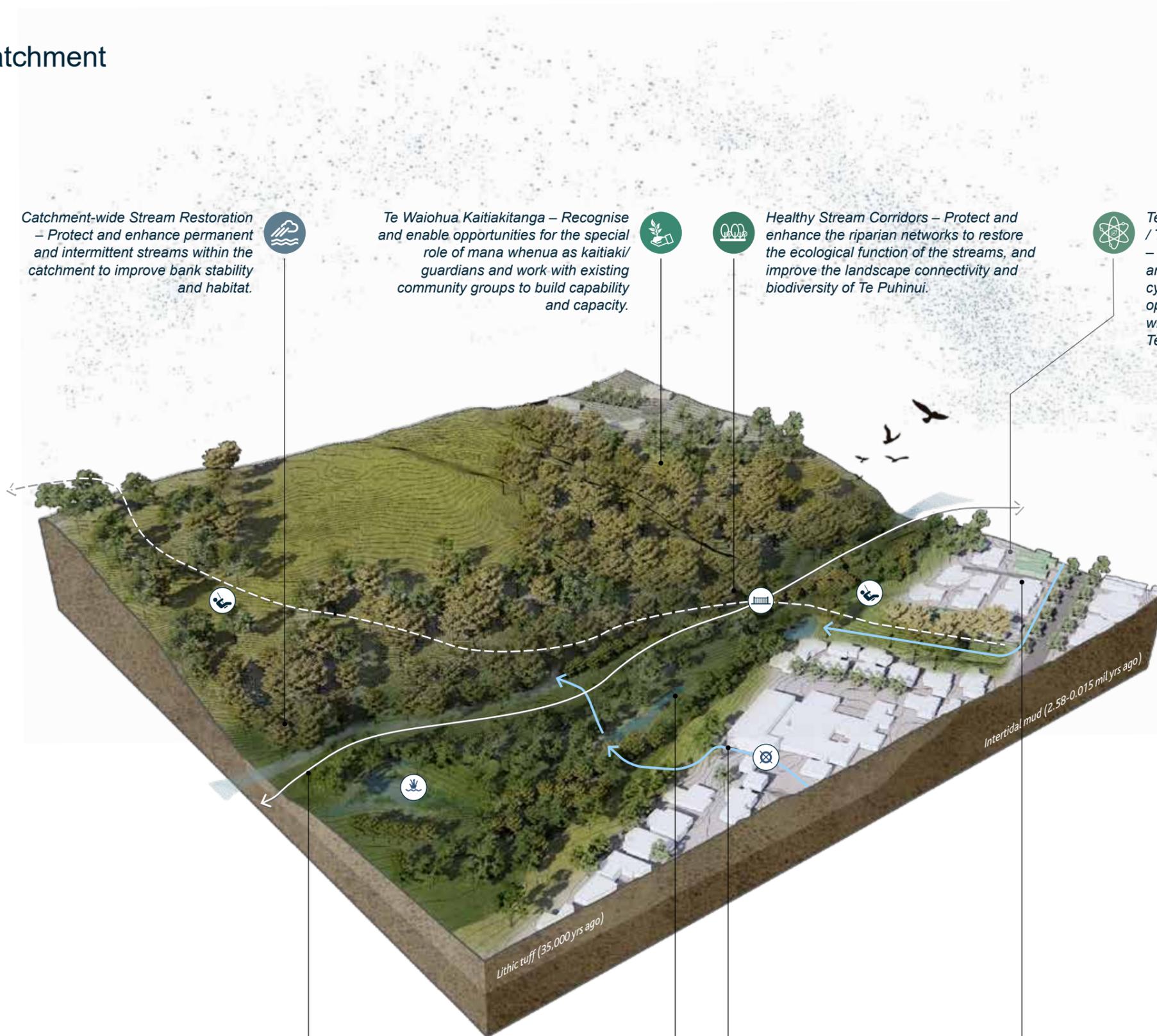
The remnant native forest surrounding Puhinui Stream and its tributaries in Tootara Park and the Botanic Gardens is a representative example of mature native forest on the Manukau Lowlands and provides an excellent foundation for the ongoing restoration, protection and enhancement of forested upper catchment.

Retrofitting and restructuring the built environment to orientate toward the stream and to create walkable communities where most essential services are within walking distance will significantly reduce the carbon intensity of locals' travel choices.

Retrofitting homes to be warm and dry will improve the health and well-being of the people living there.

KEY

- Existing
- Proposed
- Primary path
- Secondary path
- Overland flowpath
- New buildings
- Existing building (retrofit)
- Bridge
- Playground
- Wetland
- Stream daylighting



Catchment-wide Stream Restoration – Protect and enhance permanent and intermittent streams within the catchment to improve bank stability and habitat.

Te Waiohua Kaitiakitanga – Recognise and enable opportunities for the special role of mana whenua as kaitiaki/guardians and work with existing community groups to build capability and capacity.

Healthy Stream Corridors – Protect and enhance the riparian networks to restore the ecological function of the streams, and improve the landscape connectivity and biodiversity of Te Puhinui.

Te Maramataka o Te Waiohua / Te Waiohua Lunar Calendar – Reinvigorate, celebrate, and apply Te Waiohua lunar cycles to the planning, design, operations and delivery of a wide range of activities within Te Puhinui.

Low-carbon Transport – Develop a strategy to decarbonise the transport of people and goods to, from and within Te Puhinui.

Reinstate Floodplains – Where possible reinstate and enhance natural drainage patterns to improve ground water recharge, reduce peak stormwater run-off and flood risk and create opportunities for ecological enhancement.

Daylight and Naturalise Overland Flow Paths – Identify and restore overland flow paths and the natural flow regime of the hydrological network to improve ground water recharge, reduce peak stormwater run-off and flood risk, and create opportunities for ecological enhancement.

Warm Healthy Homes – Seek to ensure everyone who lives in Te Puhinui lives in a warm, dry and healthy home that reduces the risk of respiratory issues and other preventable health conditions.



Aspirational outcomes for upper catchment

Tangata | People - Whenua | Place

Location map



The upper catchment is characterised by low- to medium-density residential housing, car-dominated streets, low social deprivation, and large areas of high-quality open spaces for recreation.

The existing open spaces in the upper catchment provide key opportunities to contribute to local food security and cultural expression through public arts and cultural taonga, to re-establish cultural harvest, to develop quality recreational facilities, and to establish citizen science and place-based educational programmes.

Indigenous and social procurement practices will provide local employment opportunities for local people.

KEY

- Existing
- Proposed
- Primary path
- > Secondary path
- Access to stream
- New buildings
- Existing building (retrofit)
- ≡ Bridge
- ⚡ Playground

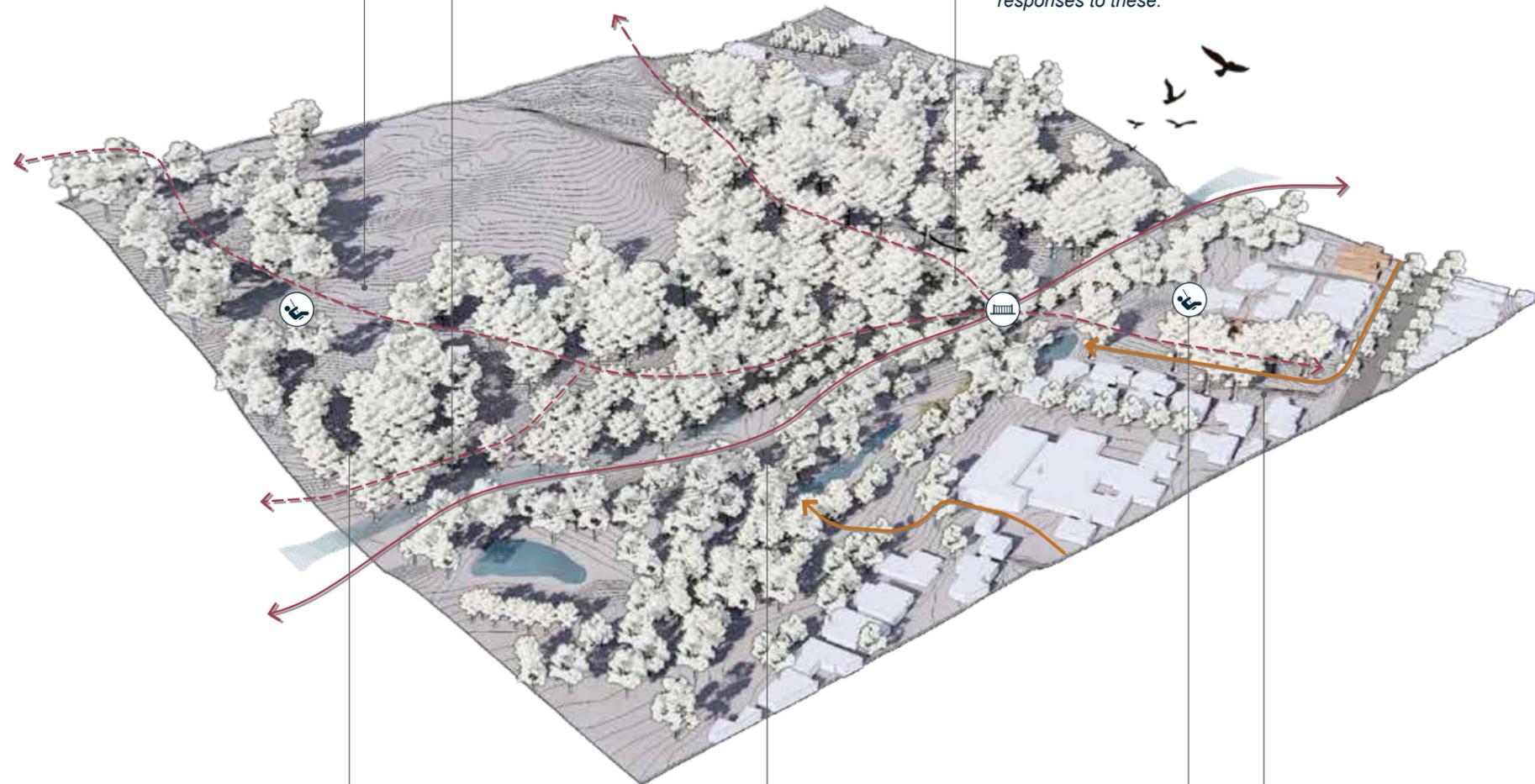
Align existing central and local government agency policy, planning and strategy documents to Te Whakaoranga o Te Puhinui to ensure shared objectives and an integrated approach to regenerating Te Puhinui.



Te Puhinui Citizen Science – Enable community input and participation in a long-term, catchment-wide monitoring and evaluation programme, in order to create connection, build baseline knowledge and assess impacts and benefits over time.



Te Puhinui Place-Based Education – Develop and deliver Te Puhinui educational programmes for schools, communities and businesses to improve ownership of local issues and challenges and empower local responses to these.



Te Puhinui Path – Create a shared walkway along Puhinui Stream from Tootara Park in the upper catchment to Puhinui Reserve in the lower catchment to provide a continuous publicly accessible link from maunga/mountains to moana/sea



Te Puhinui Cultural Tohu / Markers – Identify, maintain, enhance and where appropriate, celebraTe Puhinui unique natural, cultural and built heritage, whilst reinforcing physical and metaphysical connections to the awa and Te Puhinui distinctive identity and community.



Te Ara Huupara o Te Puhinui / Te Puhinui Play-scape – Create a connecting network of play elements along the stream corridor to develop an educational and experiential pathway for people who live, work, learn and play in Te Puhinui, incorporating cultural and natural huupara elements where appropriate.



Ngaa Mahinga Kai o Te Puhinui / Food Gathering Sites - Re-establish sites throughout Te Puhinui for traditional wild harvest and food gathering as well as contemporary food, fibre and medicine production and harvest.

Aspirational outcomes for mid catchment - Residential

Taiao | Nature

Location map



The residential areas of the mid catchment are located on gently rolling landforms where stormwater run-off merges together to form larger streams. The stream networks through this area need to be restored, protected and enhanced by re-naturalising the stream, by planting the riparian corridors and through kaitiakitanga and tiakitanga/customary care and stewardship.

Retrofitting and restructuring the built environment to orientate toward the stream and to create walkable communities where most essential services are within walking distance will significantly reduce the carbon intensity of the community's travel choices.

Retrofitting these homes to be warm and dry will significantly improve the health and well-being of the people living there.

KEY

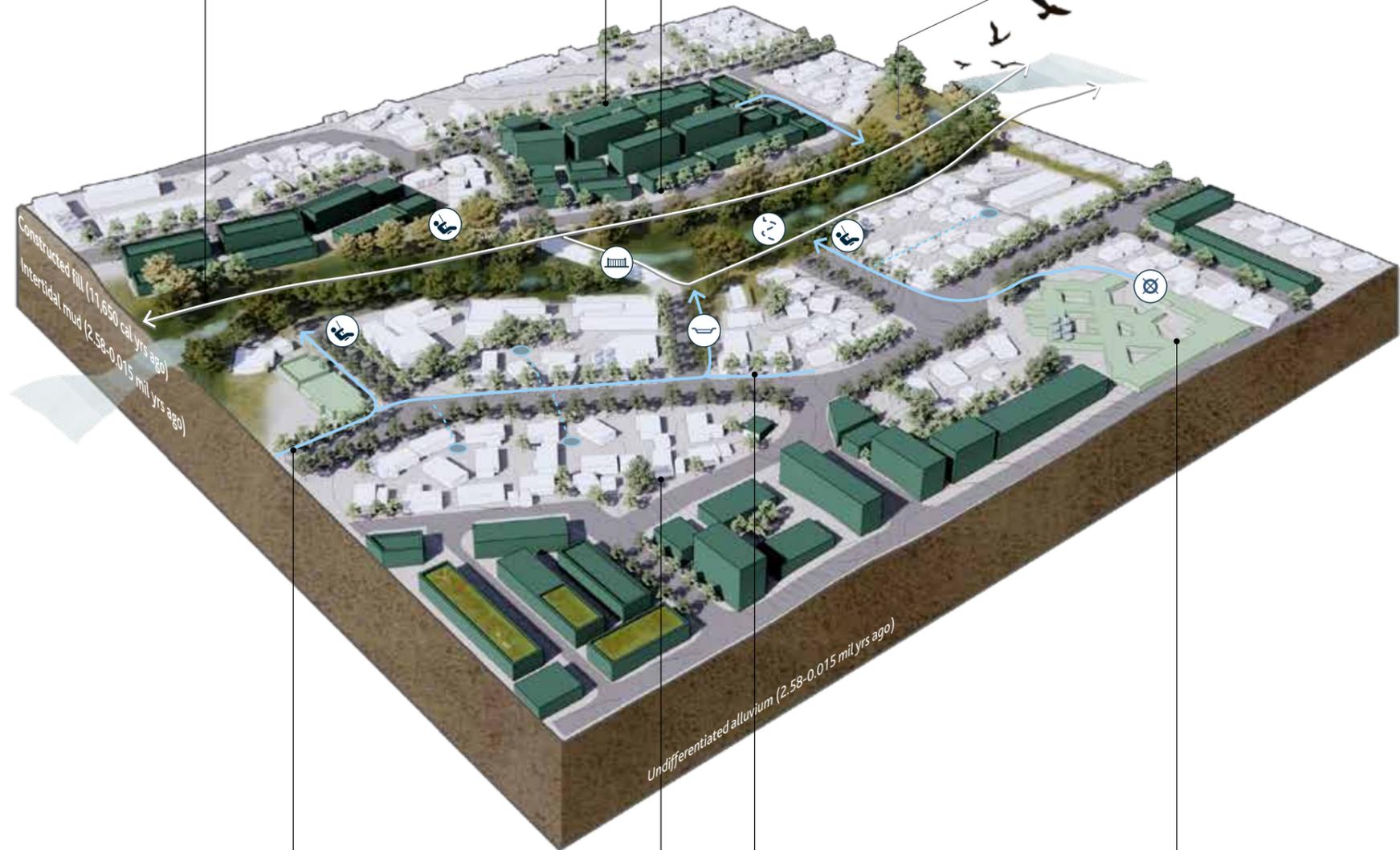
- Existing
- Proposed
- Primary path
- Secondary path
- Overland flowpath
- New buildings
- Existing building (retrofit)
- Bridge
- Playground
- Living roof
- Urban swale
- Stream improvement
- Stream daylighting

Healthy Stream Corridors
 – Protect and enhance the riparian networks to restore the ecological function of the streams, and improve the landscape connectivity and biodiversity of Te Puhinui.

Warm Healthy Homes – Seek to ensure everyone who lives in Te Puhinui lives in a warm, dry and healthy home that reduces the risk of respiratory issues and other preventable health conditions.

Te Reo Waiohuria strategy / Te Waiohuria Language strategy – Promote, use and proactively teach Te Waiohuria dialect and narratives within Te Puhinui. Reinststate the mana of te reo Waiohuria within the catchment for the enrichment and benefit of Te Puhinui and all its communities.

Te Roopuu Tiaki i Te Puhinui / Friends of Puhinui – Develop a catchment-wide evaluation framework that reflects Te Waiohuria values and principles in a way that integrates matauranga Maaori with western science to monitor, measure, evaluate and inform ongoing decision making towards the regeneration of Te Puhinui.



Daylight and Naturalise Overland Flow Paths – Identify and restore overland flow paths and the natural flow regime of the stream network to improve ground water recharge, reduce peak stormwater run-off and flood risk, and create opportunities for ecological enhancement.

Permeable Areas and Infiltration – As urban development continues, where possible maximise permeable areas and infiltration of stormwater to increase ground water recharge and improve the base flow of streams.

Reinstate Floodplains – Where possible reinstate and enhance natural drainage patterns to improve ground water recharge, reduce peak stormwater run-off and flood risk and create opportunities for ecological enhancement.

Te Puhinui Energy Use and Efficiency strategy – Develop a strategy to reduce energy use and improve efficiency as part of a transition towards a renewable energy network targeting low-energy lifestyles, the built environment, the food system, industry and health and well-being.



Aspirational outcomes for mid catchment - Residential

Tangata | People - Whenua | Place

Location map



The mid catchment is characterised by low- to medium-density residential housing and low population density, the state highways, single lot suburban housing and large-scale community facilities including schools. There are limited areas of open spaces for recreation and these are generally of poor-quality. This area is also characterised by limited and poor quality connections to services. Average household age is young, there is high social deprivation and overcrowding is common. It is also a food desert.

Restructuring the built environment will help create safe vibrant communities and access to and along the stream will significantly improve access to nature and recreational opportunities.

A range of housing options coupled with initiatives that support current residents to continue living here in the future will increase local connection and pride of place.

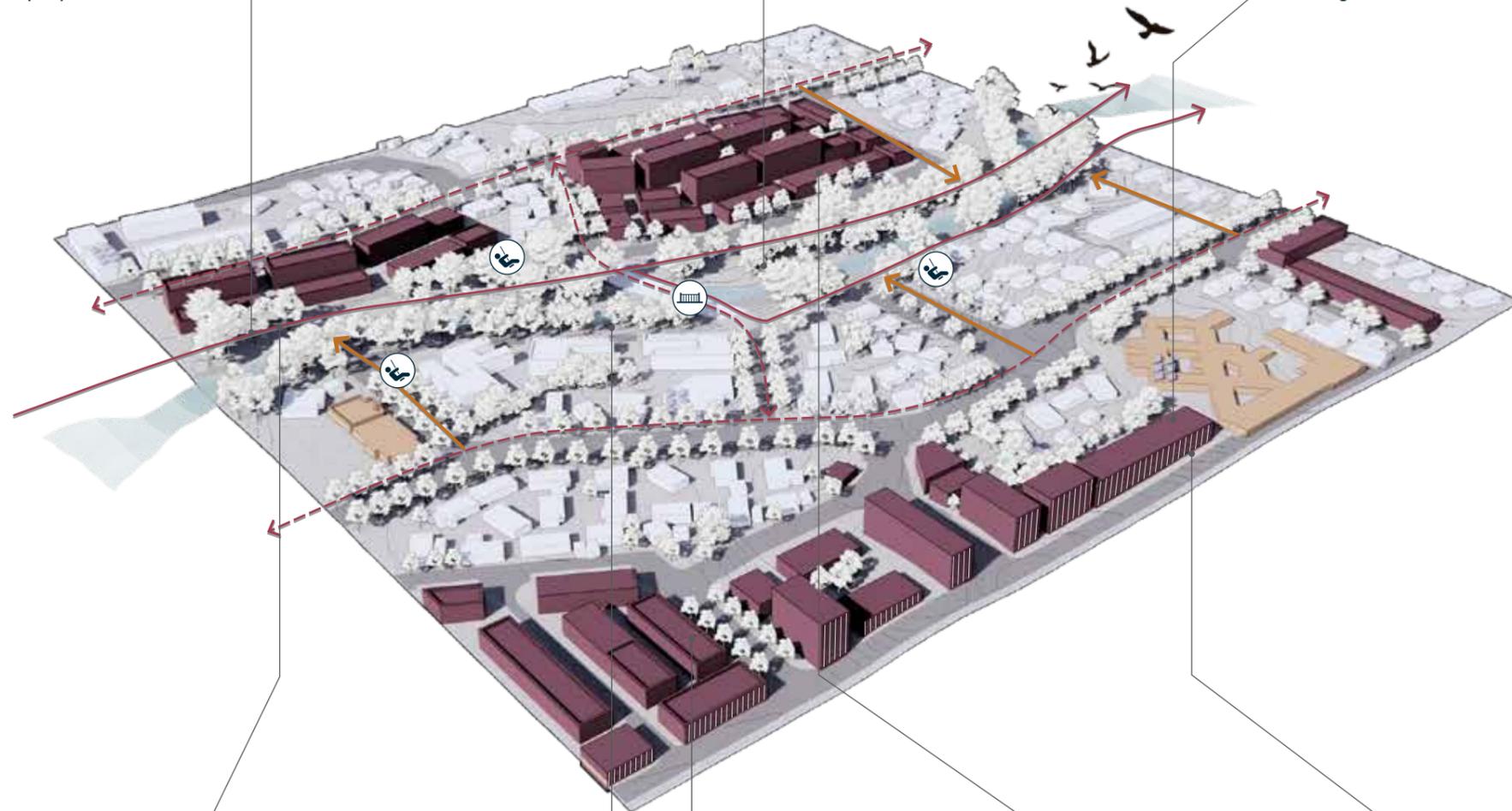
KEY

- Existing
- Proposed
- Primary path
- > Secondary path
- Access to stream
- New buildings
- ||| Active Frontage
- Existing building (retrofit)
- ≡ Bridge
- ⊙ Playground

Hapori Puukoorero / Puhinui Community Narratives - Acknowledge, record and celebrate the stories of mataawaka, Pasifika, Paakehaa, and tau iwi communities and individuals to help create a contemporary narrative and sense of place for all people of Te Puhinui.

Te Puhinui Place-Based Education – Develop and deliver Te Puhinui educational programmes for schools, communities and businesses to improve ownership of local issues and challenges and empower local responses to these.

Te Puhinui Displacement and Resettlement Manaaki strategy - Promote and provide a sense of belonging, connection, and housing security for Te Puhinui residents most vulnerable to displacement as a result of urban restructuring in a way that enhances sense of place, health and well-being, and mitigates the negative effects of gentrification.



Te Puhinui Path – Create a shared walkway along Puhinui Stream from Tootara Park in the upper catchment to Puhinui Reserve in the lower catchment to provide a continuous publicly accessible link from maunga/ mountains to moana/sea.

Te Puhinui Food Commons - Establish a food commons for Te Puhinui incorporating a physical and digital hub for logistics, a mechanism for securing arable soils for food production and an entity to acquire seed funding/financial support for sustainable food production, distribution and consumption within Te Puhinui.

Human-scale Communities – Increase the density and mix of uses of local neighbourhoods so that the people who live, work, play and learn in Te Puhinui have the opportunity to walk to meet all of their daily needs.

Orientate towards and connect to the Waters of Te Puhinui – Structure the urban environment to provide visual and physical access to Te Puhinui to support and strengthen the relationship of communities with the awa and stream corridor.

Retrofitting the Built Environment – Maintain and systematically retrofit Te Puhinui built environment to improve the energy and water efficiency of existing buildings and to diversify land uses to contribute toward vibrant walkable communities.

Aspirational outcomes for mid catchment - Industrial land use

Taiao | Nature

Location map



The stream networks through the mid catchment industrial area need to be restored, protected and enhanced by re-naturalising the stream, daylighting sections of the piped network and planting riparian corridors and through kaitiakitanga and tiakitanga/customary care and stewardship.

Retrofitting and restructuring the built environment to create walkable communities and promoting replacement of imported materials and goods with local production, services and expertise can contribute towards reduction in the carbon intensity of the industry. Encouraging corporate responsibility and business sustainability programmes to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui can significantly improve the well-being of Te Puhinui and its people.

KEY

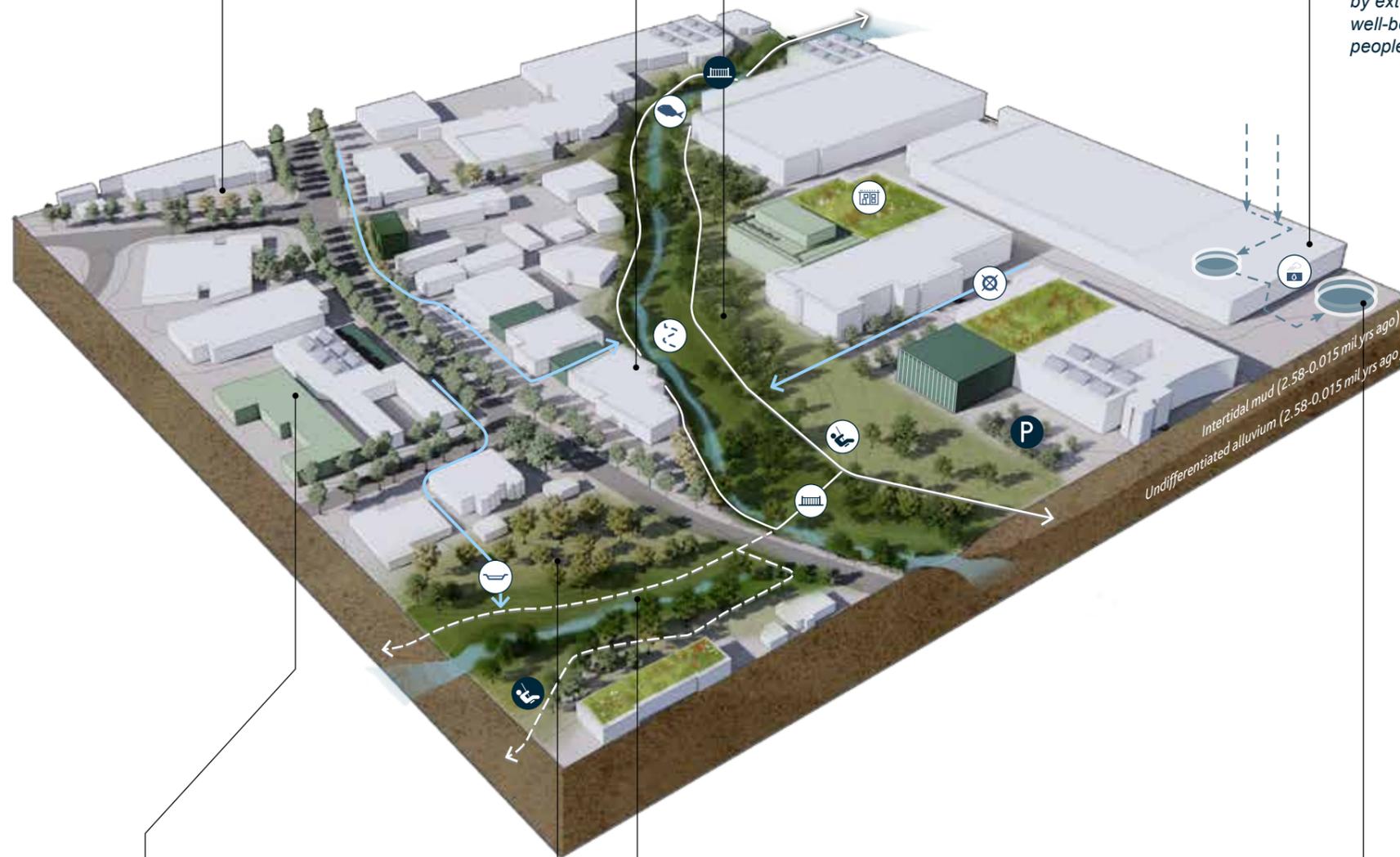
- Existing
- Proposed
- Primary path
- Secondary path
- Overland flowpath
- New buildings
- Existing building (retrofit)
- Bridge
- Playground
- Living roof
- Urban swale
- Rainwater harvesting
- Stream improvement
- Stream daylighting
- Fish Passage
- P Parking

Canopy Cover in Urban Areas – Integrate a canopy cover of tall woody vegetation into road corridors, private lots and public land to improve amenity, micro-climates, air quality, habitat, water quality and reduce stormwater run-off

Te Puhinui Energy Use and Efficiency strategy – Develop a strategy to reduce energy use and improve efficiency as part of a transition towards a renewable energy network targeting low-energy lifestyles, the built environment, the food system, industry and health and well-being.

Forest Patches – Re-establish a matrix of dense, multilayered forest patches large enough to support a range of habitats for native wildlife that are distributed in a way that creates stepping stones for wildlife moving through the catchment and to improve landscape connectivity and ecological integrity.

Te Puhinui Business Responsibility Initiative – Develop a business responsibility and sustainability programme to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui to take responsibility for their actions and by extension the environmental well-being of Te Puhinui and its people.



Warm Healthy Homes – Seek to ensure everyone who lives in Te Puhinui lives in a warm, dry and healthy home that reduces the risk of respiratory issues and other preventable health conditions.

Strategic Infrastructure Renewal – Assess, prioritise and target upgrades and renewals of existing stream and stormwater assets to increase capacity of the network, improve water quality, enhance ecosystem health, and reduce the fossil carbon intensity of maintenance practices.

Catchment-wide Stream Restoration – Protect and enhance permanent and intermittent streams within the catchment to improve bank stability and habitat.

Blue Green Industry – Integrate water sensitive design throughout existing industrial areas to filter contaminants, reduce run-off, improve amenity and create habitat.

Aspirational outcomes for mid catchment - Industrial land use

Tangata | People - Whenua | Place

Location map



The industrial area in the mid catchment is characterised by large-scale, single-use buildings with few people living in the area. There are very limited areas of open spaces for recreation and these are generally of poor quality. This area is also characterised by large car-dominated streets with limited and poor-quality connections and access to the stream. The Wiri Business Improvement Districts includes hundreds of businesses operating in the area.

Strengthening Environmental Compliance will significantly reduce the environmental impact of the industrial area. The development of local resource recovery provides a unique opportunity for local economic development by giving businesses and communities greater ownership of material and resource flows in the catchment which will also significantly reduce waste produced in this area.

KEY

- Existing
- Proposed
- Primary path
- Secondary path
- Access to stream
- New buildings
- ▨ Active Frontage
- Existing building (retrofit)
- Bridge
- Playground

Safe and Healthy Streets – Re-imagine and establish streets as places for people of all ages and abilities to support walkable, liveable, work, play, learn neighbourhoods and communities.



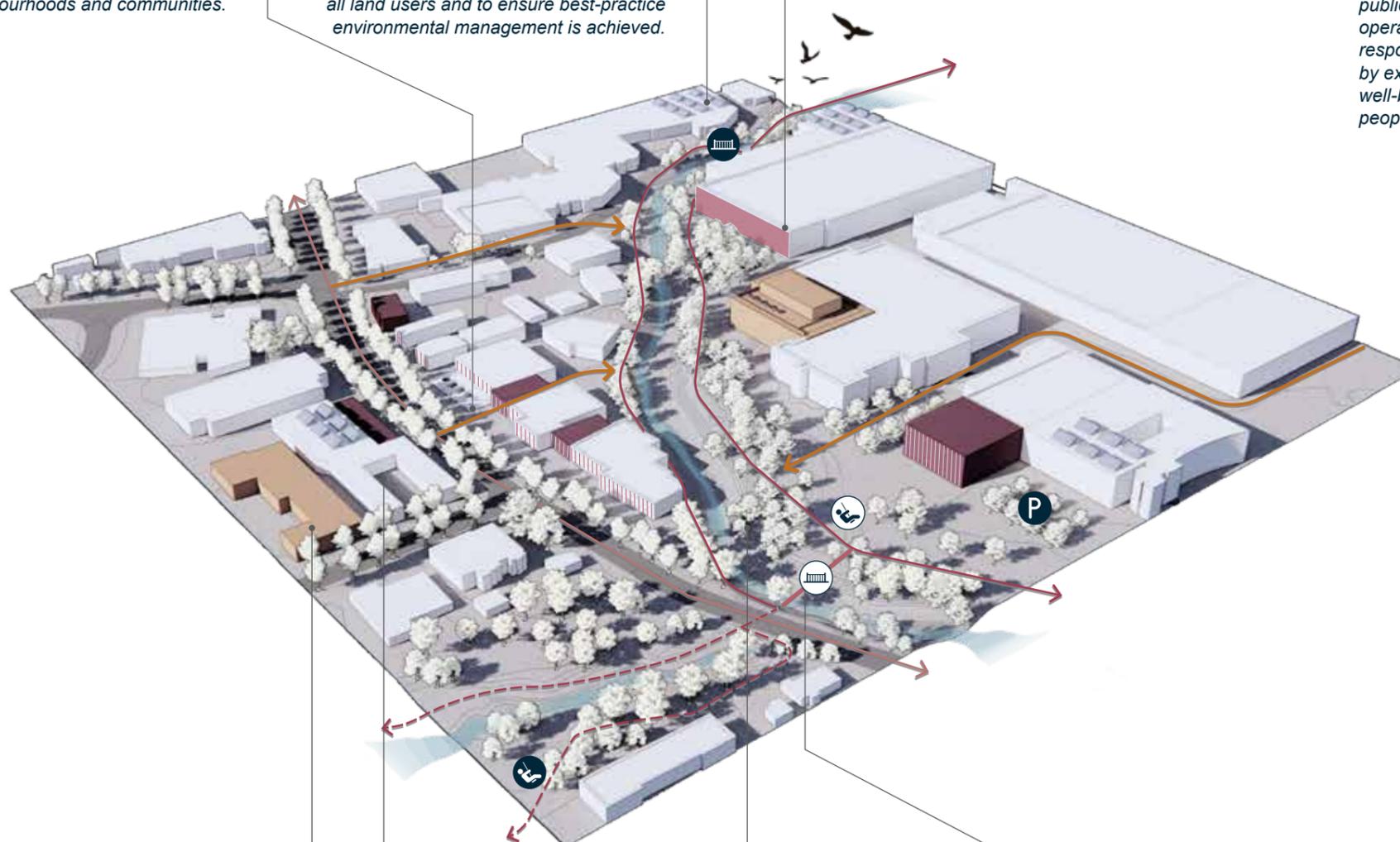
Environmental Compliance – Strengthen compliance of environmental issues in Te Puhinui, including but not limited to wastewater management and illegal discharges to cultivate responsibility for all land users and to ensure best-practice environmental management is achieved.



Orientate towards and connect to the Waters of Te Puhinui – Structure the urban environment to provide visual and physical access to Te Puhinui to support and strengthen the relationship of communities with the awa and stream corridor.



Te Puhinui Business Responsibility Initiative – Develop a business responsibility and sustainability programme to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui to take responsibility for their actions and by extension the environmental well-being of Te Puhinui and its people.



Retrofitting the Built Environment – Maintain and systematically retrofit Te Puhinui built environment to improve the energy and water efficiency of existing buildings and to diversify land uses to contribute toward vibrant walkable communities.



Te Puhinui Resource Recovery – Support/establish a local community resource recovery centre which facilitates the salvage, reuse, repair, upcycling and redistribution of useful materials, tools and resources.



Te Puhinui Fitness Trail – Develop a strategy and fitness trail for the stream corridor and open space network to promote healthy active lifestyles.



Te Puhinui Path – Create a shared walkway along Puhinui Stream from Tootara Park in the upper catchment to Puhinui Reserve in the lower catchment to provide a continuous publicly accessible link from maunga/ mountains to moana/ sea.

Aspirational outcomes for mid catchment - Town centre

Taiao | Nature

Location map



The stream networks through and around the Manukau town centre need to be restored, protected and enhanced by re-naturalising the stream, daylighting sections of the piped network, planting the riparian corridors and through kaitiakitanga and tiakitanga/customary care and stewardship.

Retrofitting and restructuring the built environment to orientate toward the stream and to create walkable communities where most essential services are within walking distance will significantly reduce the carbon intensity of the community's travel choices.

Encouraging corporate responsibility and business sustainability programmes to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui can significantly improve the well-being of Te Puhinui and its people.

KEY

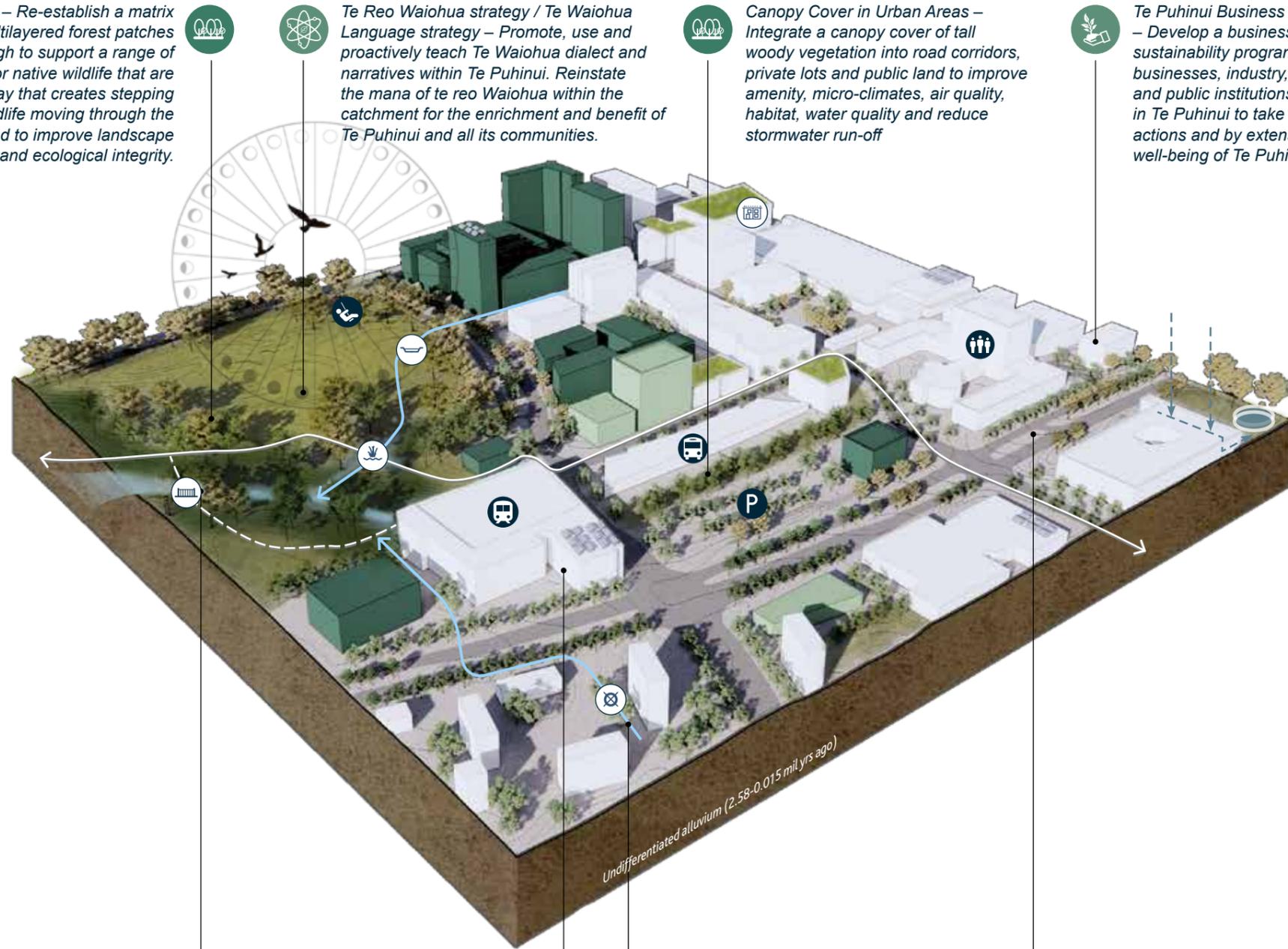
- Existing
- Proposed
- Primary path
- Secondary path
- Overland flowpath
- New buildings
- Existing building (retrofit)
- 🚉 Train Station
- 🚌 Bus Station
- 🏢 Community Building
- 🌉 Bridge
- 🎡 Playground
- 🏠 Living roof
- 🌊 Urban swale
- ☕ Stream daylighting
- P Parking
- 🌿 Wetland

Forest Patches – Re-establish a matrix of dense, multilayered forest patches large enough to support a range of habitats for native wildlife that are distributed in a way that creates stepping stones for wildlife moving through the catchment and to improve landscape connectivity and ecological integrity.

Te Reo Waiohua strategy / Te Waiohua Language strategy – Promote, use and proactively teach Te Waiohua dialect and narratives within Te Puhinui. Reinstate the mana of te reo Waiohua within the catchment for the enrichment and benefit of Te Puhinui and all its communities.

Canopy Cover in Urban Areas – Integrate a canopy cover of tall woody vegetation into road corridors, private lots and public land to improve amenity, micro-climates, air quality, habitat, water quality and reduce stormwater run-off

Te Puhinui Business Responsibility Initiative – Develop a business responsibility and sustainability programme to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui to take responsibility for their actions and by extension the environmental well-being of Te Puhinui and its people.



Strategic Infrastructure Renewal – Assess, prioritise and target upgrades and renewals of existing stream and stormwater assets to increase capacity of the network, improve water quality, enhance ecosystem health, and reduce the fossil carbon intensity of maintenance practices.

Permeable Areas and Infiltration – As urban development continues, where possible maximise permeable areas and infiltration of stormwater to increase ground water recharge and improve the base flow of streams.

Daylight and Naturalise Overland Flow Paths – Identify and restore overland flow paths and the natural flow regime of the stream network to improve ground water recharge, reduce peak stormwater run-off and flood risk, and create opportunities for ecological enhancement.

Low-carbon Transport – Develop a strategy to decarbonise the transport of people and goods to, from and within Te Puhinui.



Aspirational outcomes for mid catchment - Town centre

Tangata | People - Whenua | Place

Location map



The Manukau town centre is characterised by a mix of uses including small- and large-scale commercial activities, single-use buildings and light industry. There is mixed social deprivation and increasing numbers of people living in the area. With the exception of recent developments, the area consists of large car-dominated streets and limited, poor-quality connections to amenities and open spaces for recreation.

Prioritising cultural tohu/markers in the town centre can enhance the presence and celebration of local identity, contribute to pride of place and bring greater vibrancy and beauty. Te Puhinui Pathways will increase connection, access and ease of navigating in and through the town centre and will provide greater opportunities for getting to and from this area on foot or by other active modes.

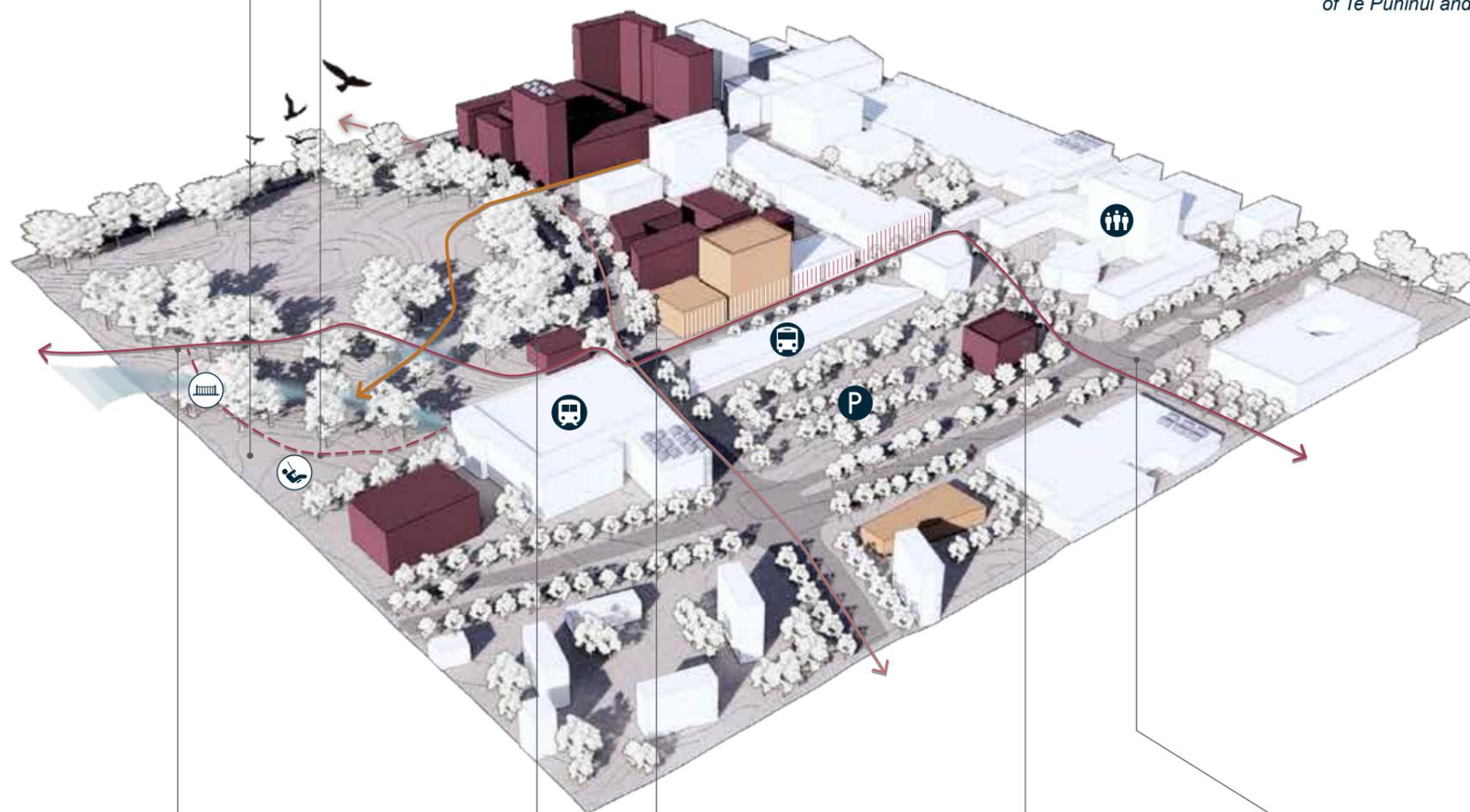
Environmental Compliance - Strengthen compliance of environmental issues in Te Puhinui, including but not limited to wastewater management and illegal discharges to cultivate responsibility for all land users and to ensure best-practice environmental management is achieved.



Te Puhinui Hub - Establish a physical and digital hub dedicated to deepening our collective understanding of Te Puhinui and promote local innovation and Te Puhinui as a living outdoor classroom.



Te Puhinui Business Responsibility Initiative - Develop a business responsibility and sustainability programme to support businesses, industry, commercial ventures and public institutions and agencies operating in Te Puhinui to take responsibility for their actions and by extension the environmental well-being of Te Puhinui and its people.



KEY

- Existing
- Proposed
- Primary path
- - - Secondary path
- Access to stream
- New buildings
- Existing building (retrofit)
- ≡ Bridge
- ⚡ Playground
- P Parking

Te Puhinui Path - Create a shared walkway along Puhinui Stream from Tootara Park in the upper catchment to Puhinui Reserve in the lower catchment to provide a continuous publicly accessible link from maunga / mountains to moana/sea.



Te Puhinui Public Arts and Cultural Taonga Integration - Develop a strategy for public arts, taonga and culture design integration for Te Puhinui.



Retrofitting the Built Environment - Maintain and systematically retrofit Te Puhinui built environment to improve the energy and water efficiency of existing buildings and to diversify land uses to contribute toward vibrant walkable communities.



Human-scale Communities - Increase the density and mix of uses of local neighbourhoods so that the people who live, work, play and learn in Te Puhinui have the opportunity to walk to meet all of their daily needs.



Te Puhinui Signage and Wayfinding - Develop a catchment-wide wayfinding and signage strategy to provide legibility and continuity for people moving through Te Puhinui.



Aspirational outcomes for lower catchment

Taiao | Nature

Location map



The stream networks and coastal environment through the lower catchment need to be restored, protected and enhanced by re-naturalising the stream, planting the riparian corridors, reinstating coastal ecologies and through kaitiakitanga and tiakitanga/customary care and stewardship.

Retrofitting and restructuring the built environment to orientate toward the stream and to create walkable communities where most essential services are within walking distance will significantly reduce the carbon intensity of the community's travel choices.

Retrofitting homes to be warm and dry will significantly improve the health and well-being of the people living there.

KEY

- Existing
- Proposed
- Primary path
- Secondary path
- Overland flowpath
- New buildings
- Existing building (retrofit)
- Bridge
- Yazoo stream
- Rare and threatened birds in Significant Ecological Area
- Rare and threatened plants in Significant Ecological Area

Catchment-wide Stream Restoration – Protect and enhance permanent and intermittent streams within the catchment to improve bank stability and habitat.

Low-carbon Transport – Develop a strategy to decarbonise the transport of people and goods to, from and within Te Puhinui.

Reinstate Floodplains and Allow for Flooding – Where possible reinstate and enhance natural drainage patterns to improve ground water recharge, reduce peak stormwater run-off and flood risk and create opportunities for ecological enhancement.

Warm Healthy Homes – Seek to ensure everyone who lives in Te Puhinui lives in a warm, dry and healthy home that reduces the risk of respiratory issues and other preventable health conditions.



Aspirational outcomes for lower catchment

Tangata | People - Whenua | Place

Location map



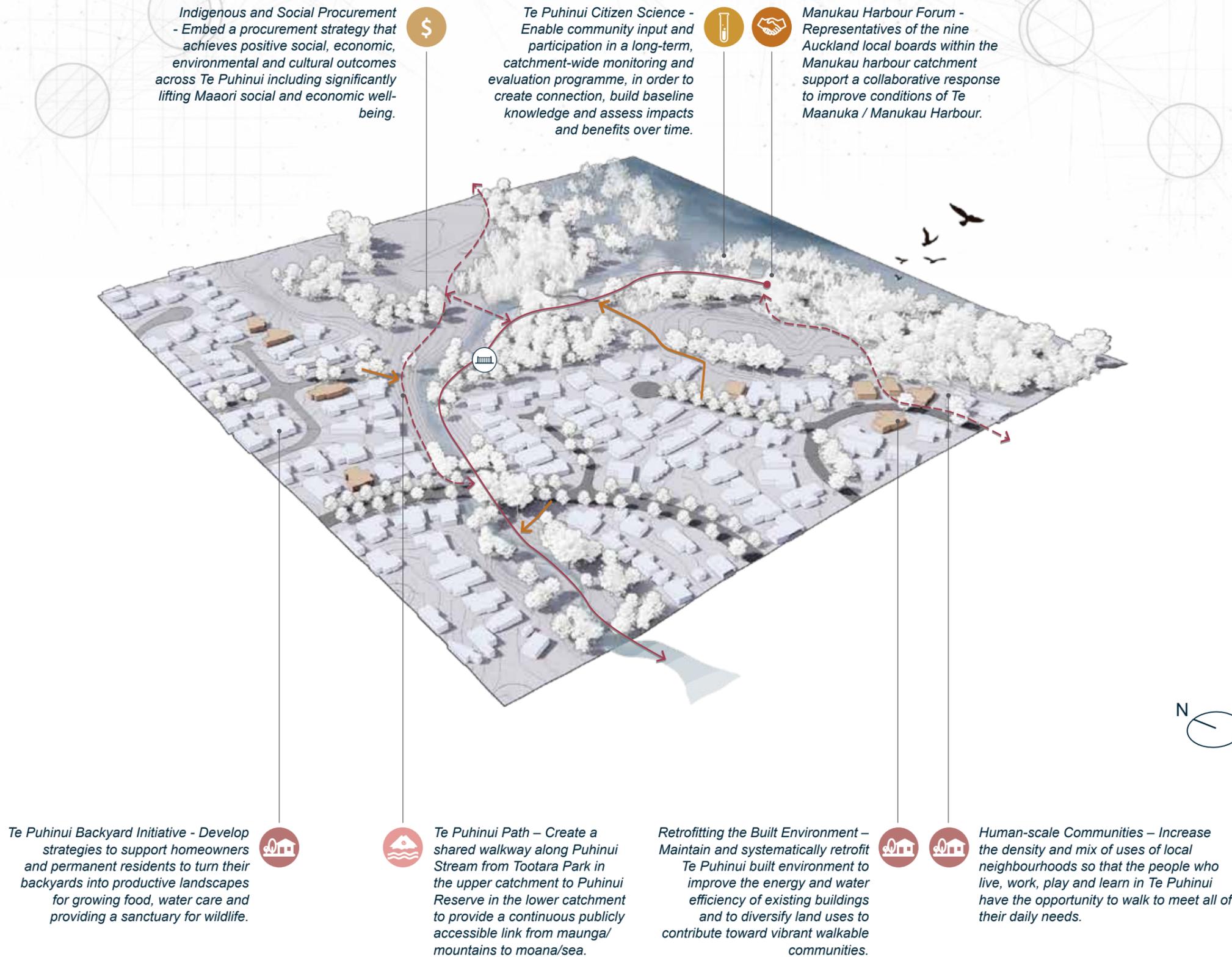
The lower catchment is characterised by low- to medium-density residential housing, low population density and medium to high social deprivation. The streets prioritise cars over other modes of transport modes. There are areas of high-quality open spaces for recreation, however some of the most significant of these are difficult to access.

The existing open spaces in the upper catchment provide key opportunities to contribute to local food security and cultural expression through public arts and cultural taonga, to re-establish cultural harvest, to develop quality recreational facilities, and to establish citizen science and place-based educational programmes.

Indigenous and social procurement practices will provide local employment opportunities for local people. Enhancing Manurewa Marae's capacity to support community development will significantly improve the well-being of Te Puhinui and its people.

KEY

- Existing
- Proposed
- Primary path
- > Secondary path
- Access to stream
- New buildings
- Existing building (retrofit)
- Bridge



5. Programme of works

The following programme of works identifies individual projects along the watercourse and adjacent land areas within the Transform Manukau area. The projects outlined in the programme of works are either already underway; planned and funded; or aspirational. The intent of the programme of works is to ensure that the relevant council departments, local boards and other development agencies can allocate appropriate resources and funding to implement local projects in a coordinated and integrated manner.

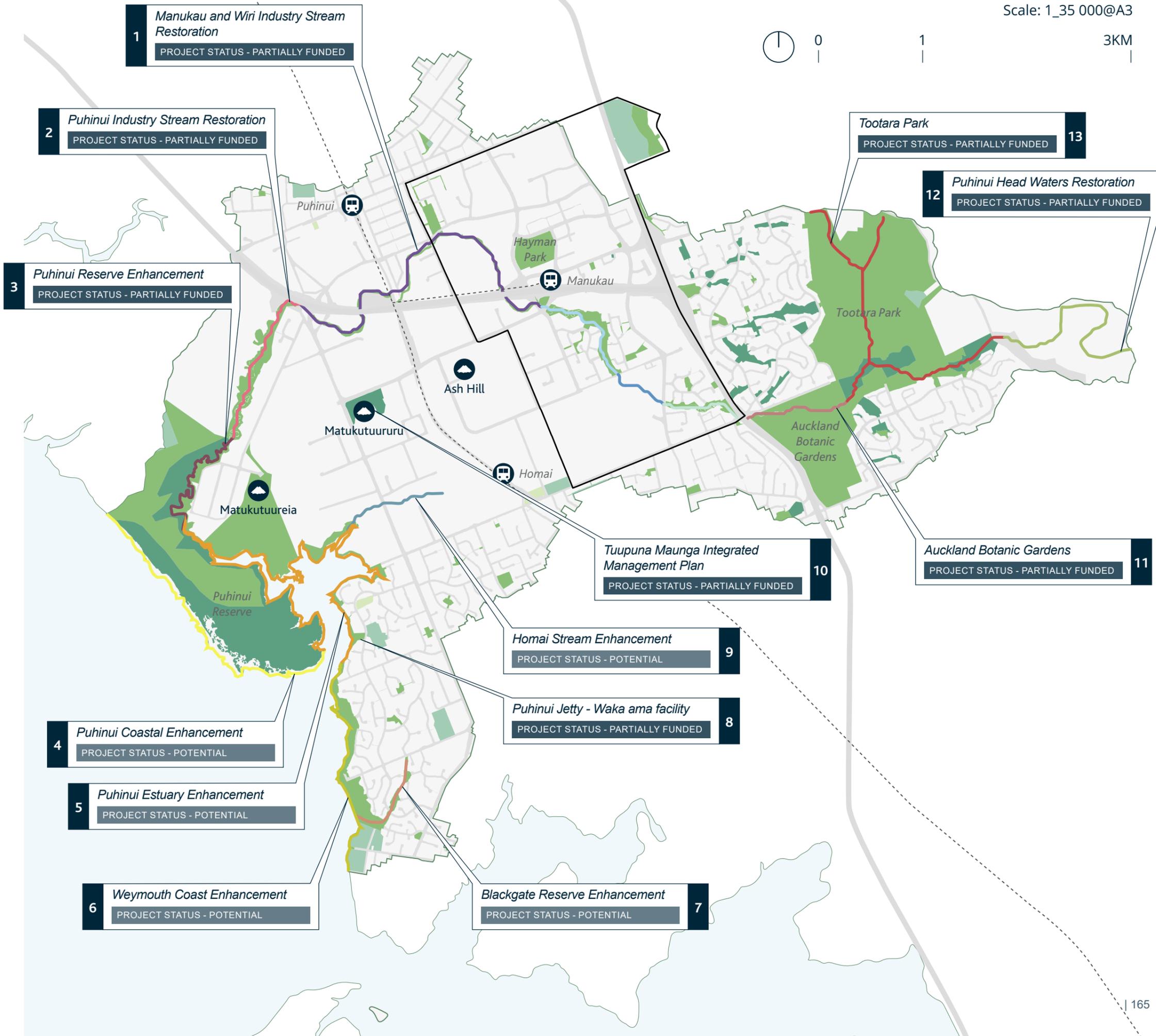
Programme of work Puhinui Stream corridor



This map identifies individual projects along Te Puhinui watercourse and adjacent land uses.

These projects are a combination of existing, proposed and aspirational, which will be delivered by a range of partners and agencies over time.

These plans are intended to assist in the alignment and coordination of physical works within the catchment.



Refer to following plan for detail within the Transform Manukau Project Boundary.

Programme of work | Puhinui Stream corridor

1. Manukau and Wiri Industry Stream Restoration

- Naturalise and regenerate Puhinui Stream, riparian vegetation and adjacent Puhinui Domain to improve water quality, ecological and amenity value.
- Increase public accessibility and circulation to and along Puhinui Stream without encroaching on private properties.
- Work with adjacent property owners and Business Improvement Districts to create a positive interface between the stream corridor and existing development.
- Remediate existing erosion and improve fish passage.
- Enhance habitat and riparian vegetation, whilst controlling weeds.

2. Puhinui Industry Stream Restoration

- Naturalise and regenerate Puhinui Stream and riparian vegetation to improve water quality, ecological function and amenity value.
- Increase public accessibility and circulation to and along Puhinui Stream without encroaching on private properties.
- Work with adjacent property owners and Business Improvement Districts to create a positive interface between the stream corridor and existing development with water sensitive development, and enhance the receiving environment.

3. Puhinui Reserve Enhancement

- Naturalise and regenerate Puhinui Stream and riparian vegetation to improve water quality, ecological function and amenity value.
- Auckland Council Community Facilities to undertake service assessment of Puhinui Reserve in the context of Te Puhinui open space network to develop long-term strategy for use and regeneration of the reserve.
- Treaty partners explore potential for reserve co-governance.

4. Puhinui Coastal Enhancement

- Maintain and enhance existing coastal ecology to increase ecological and amenity values and increase resilience against coastal inundation and storm events.

5. Puhinui Estuary Enhancement

- Maintain and enhance coastal ecology function to increase water quality, ecological and amenity value.
- Increase public accessibility and circulation to and along Te Puhinui Estuary without encroaching on private properties.
- Work with adjacent property owners to create a positive interface between the stream corridor and existing development.
- Improve inanga spawning habitat.
- Create a new jetty adjacent to the marae to improve water access.

6. Weymouth Coast Enhancement

- Maintain and enhance coastal ecology to improve water quality, ecological function and amenity value.
- Increase public accessibility and circulation to and along Te Puhinui Stream without encroaching on private properties.
- Work with adjacent property owners to create a positive interface between the stream corridor and existing development.
- Improve inanga spawning habitat.

7. Blackgate Reserve Enhancement

- Naturalise and regenerate the Blackgate Stream and riparian vegetation to improve water quality, ecological function and amenity value.
- Work with adjacent property owners to create a positive interface between the stream corridor and existing development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.

8. Puhinui Jetty - Waka ama facility

- Create a new jetty providing waka ama access to the lower reaches of Te Puhinui.

9. Homai Stream Enhancement

- Naturalise and regenerate Homai Stream and riparian vegetation to improve water quality, ecological function and amenity value.
- Increase public accessibility and circulation to and along the Homai Stream as part of the larger Puhinui trail without encroaching on private properties.
- Work with adjacent property owners to create a positive interface between the stream corridor and existing development.
- Include stormwater treatment devices to improve run-off quality as close to source as possible.

10. Tuupuna Maunga Integrated Management Plan

- Reclaim, reveal, protect and provide public access to the unique geological formation Matukutuururu.
- Recognise the spiritual, cultural and landscape value of the Maunga.

11. Auckland Botanic Gardens

- Make ongoing, incremental development of Auckland Botanic Gardens.
- Increase and protect the biodiversity surrounding the stream and enhance riparian vegetation, whilst mitigating the water quality effects of surrounding development.

Programme of work | Puhinui Stream corridor

- Educational overlay to inspire and inform communities about the cultural and ecological significance of Te Puhinui.
- Remediate existing erosion with planting and stabilisation of stream banks and raise roads for extreme flood storage.
- Incorporate extreme event flood storage to reduce flood risk to downstream community.
- Address local stream erosion concerns resulting from dog access to stream, including both physical and social interventions.

12. Puhinui Head Waters Restoration

- Revegetate the headwaters to increase biodiversity.
- Provide opportunities to strengthen cultural and community links to the headwaters.

13. Tootara Park

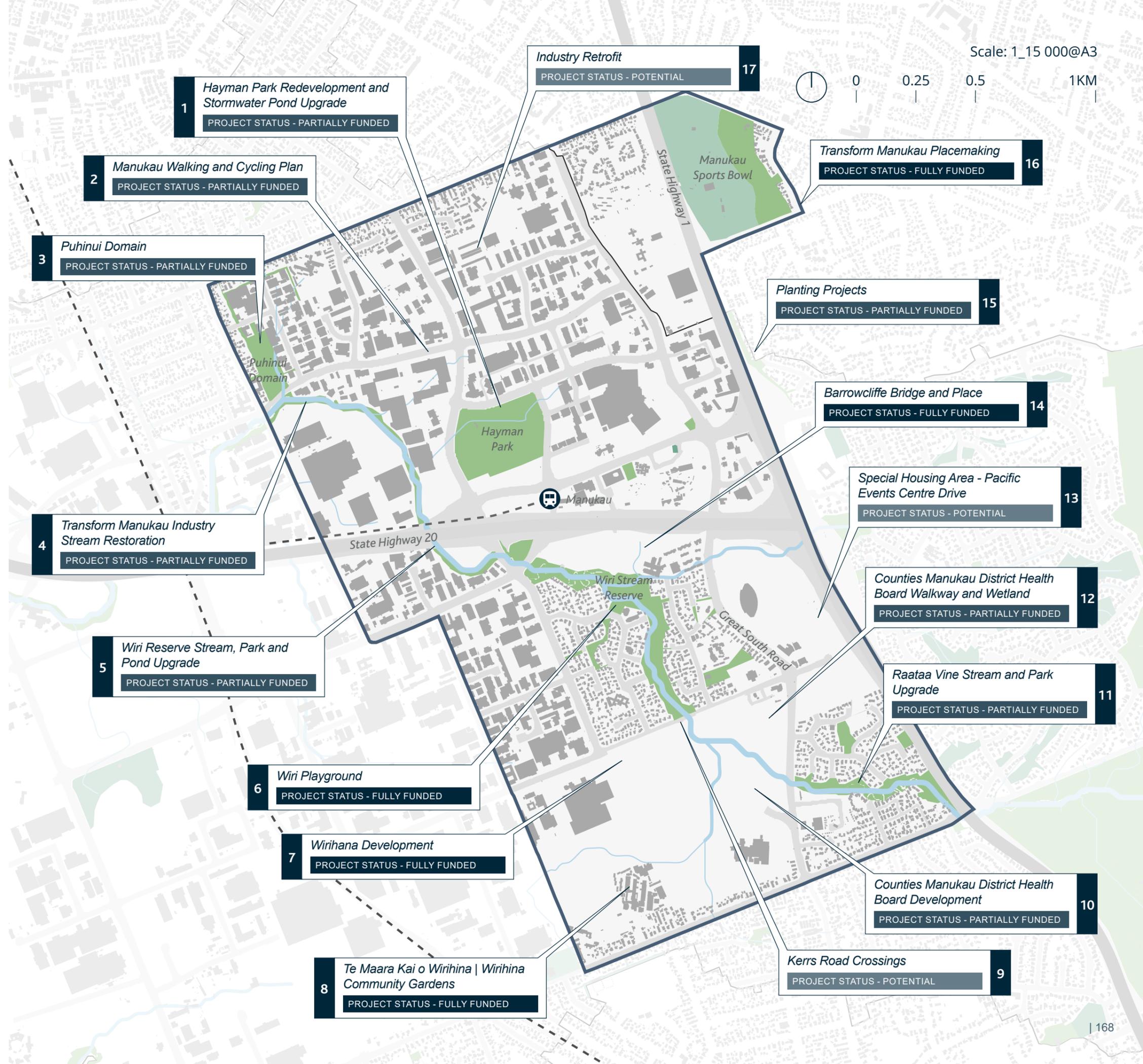
- Continue to implement the Tootara Park Master Plan including planting of ephemeral waterways.

Programme of work Transform Manukau

This map identifies individual projects within the Transform Manukau area.

These projects are a combination of existing, proposed and aspirational, which will be delivered by a range of partners and agencies over time.

These plans are intended to assist in the alignment and coordination of physical works within the catchment.



Programme of work | Transform Manukau

1. Hayman Park Redevelopment and Stormwater Pond Upgrade

- Develop new wetlands and treatment devices to improve water quality, ecological function and amenity value.
- Incorporate engagement and placemaking activities as part of the design and development of the project.

2. Manukau Walking and Cycling Plan

- Work with collaborating agencies to enable walking and cycling between the stream corridor and surrounding communities and town centre.
- Increase public accessibility and circulation to and along Te Puhinui.

3. Puhinui Domain

- Naturalise and regenerate tributaries to the Puhinui Stream and riparian vegetation to improve water quality, ecological and amenity value.
- Retrofit existing pond to improve water quality, ecological function and amenity value.

4. Transform Manukau Industry Stream Restoration

- Naturalise and regenerate Puhinui Stream and riparian vegetation to improve water quality, ecological function and amenity value.
- Increase public accessibility and circulation to and along Te Puhinui Stream without encroaching on private properties.

- Work with adjacent property owners to create a positive interface between the stream corridor and existing development.
- Remediate existing erosion and improve fish passage.
- Enhance habitat and riparian vegetation, whilst controlling weed.

5. Wiri Reserve Stream, Park and Pond Upgrade

- Naturalise and regenerate Puhinui Stream and riparian vegetation and improve the Wiri Ponds to improve water quality, ecological and amenity value.
- Work with collaborating agencies to create a positive interface between the stream corridor and the recently completed Kotuitui and Barrowcliffe developments as well as future developments.
- Increase public accessibility and circulation to and along Te Puhinui Stream.
- Remediate existing erosion and improve fish passage.

6. Wiri Playground

- Wiri Reserve playground renewal - Relocate and replace existing playground with new upgraded facility.
- Integrate Te Ara Hūpara o Puhinui outcomes in to the playground.
- Incorporate engagement and placemaking activities as part of the design and development of the project.

7. Wiriha Development

- Daylight and naturalise Te Puhinui Stream tributaries to improve water quality, ecological and amenity value.
- Work with collaborating agencies to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.

8. Wiriha Community Gardens

- Develop the (Manurewa High School) Wiriha Community Gardens.
- Incorporate engagement and placemaking activities as part of the design and development of the project.

9. Kerrs Road Crossings

- Improve walking and cycling access across Kerrs Road connecting the existing pathway to the proposed District Health Board walkway.

10. Counties Manukau District Health Board Development

- Daylight and naturalise Puhinui Stream tributaries to improve water quality, ecological and amenity value.
- Work with collaborating agencies to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.

11. Raataa Vine Stream and Park Upgrade

- Naturalise and regenerate Puhinui Stream and riparian vegetation to improve water quality, ecological and amenity value.
- Work with collaborating agencies to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.
- Remediate existing erosion and improve fish passage.
- Enhance habitat and riparian vegetation, whilst controlling weed.

12. Counties Manukau District Health Board Walkway and Wetland

- Naturalise and regenerate Puhinui Stream and riparian vegetation to improve water quality, ecological and amenity value.
- Work with collaborating agencies to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.
- Remediate existing erosion and improve fish passage.
- Create a constructed wetland to increase water quality, ecology and amenity value.
- Potential water retention/detention

Programme of work | Transform Manukau

13. Special Housing Area - Pacific Events Centre Drive

- Work with developers to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.

14. Barrowcliffe Bridge and Place

- Work with collaborating agencies to create a positive interface between the stream corridor and new development.
- Increase public accessibility and circulation to and along Te Puhinui Stream.
- Create a key cycling and walking connection to central Manukau.

15. Planting Projects

- Provide ongoing support to existing planting initiatives being undertaken including but not limited to Wiri School, Nestle Planting and Supa Centre Corporate Planting.

16. Transform Manukau Placemaking

- Work alongside the community to actively develop a sense of place.
- Build capability and capacity of local providers to provide input into urban regeneration.

17. Industry Retrofit

- Maintain and systematically retrofit Te Puhinui built environment to improve the energy and water efficiency of existing buildings and to diversify land uses of existing sections to contribute toward vibrant walkable communities.

Existing conditions



KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open space
- Vegetation

ACCESS AND CIRCULATION

- Existing Walkway
- Fence
- ⓔ Pedestrian Access
- Ⓜ Pedestrian Bridge
- Ⓟ Car Parking
- Ⓥ Vehicle Access

COMMUNITY FACILITY

- Existing Playground
- Existing Community Facilities
- Existing Learning Facilities





KEY

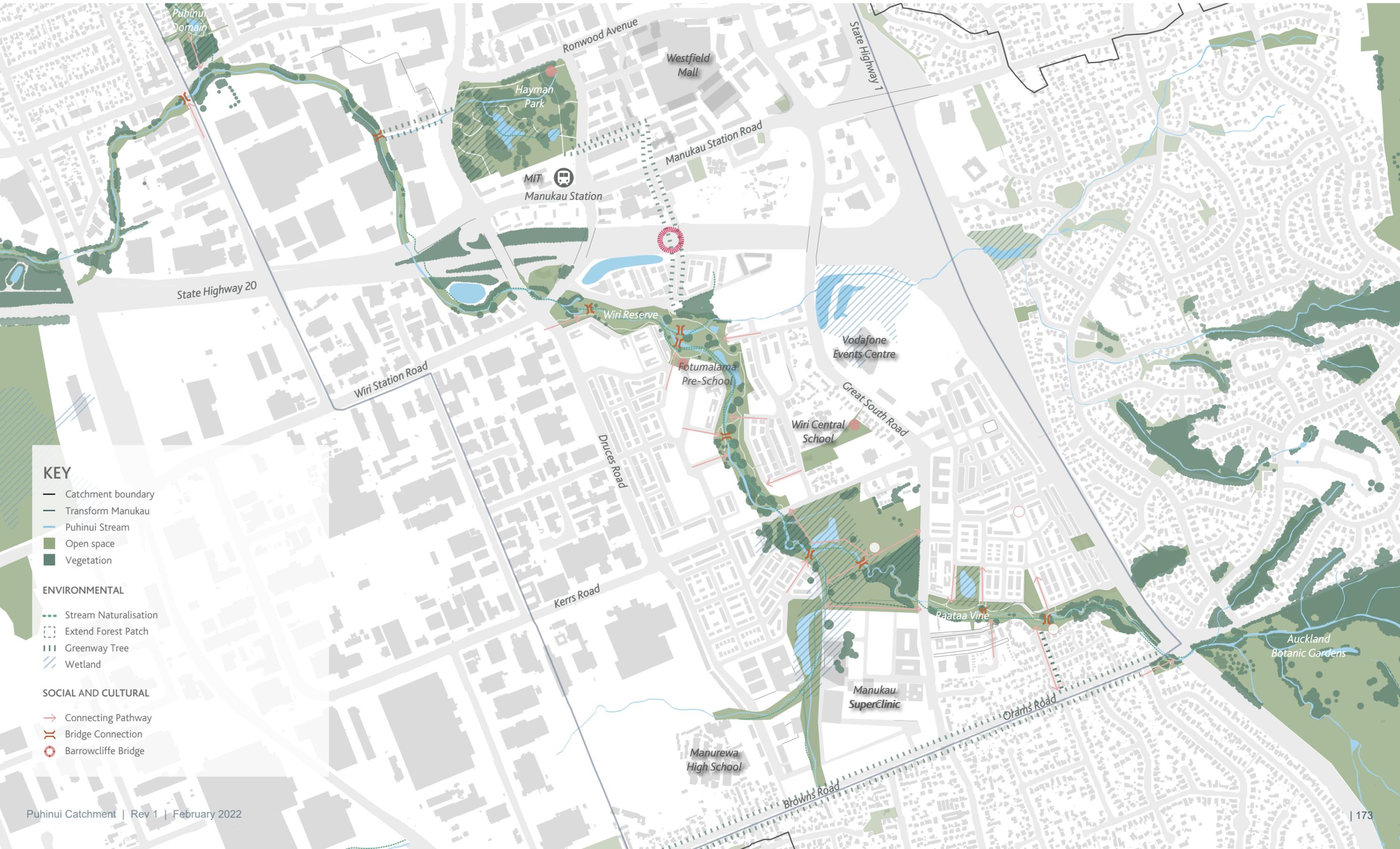
- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open space
- Vegetation

ENVIRONMENTAL

- Floodplains/flood-prone areas
- Existing Bank Erosion
- Artificial Lining
- Fish Barrier
- Fair Bank Stability

ACCESS AND SAFETY

- ||| Poor access - physical barrier
- Existing footpaths in poor condition
- Poor access and connectivity
- Crime Prevention Through Environmental Design issue - poor visibility and safety constraint



KEY

- Catchment boundary
- Transform Manukau
- Puhinui Stream
- Open space
- Vegetation

ENVIRONMENTAL

- Stream Naturalisation
- Extend Forest Patch
- ||| Greenway Tree
- /// Wetland

SOCIAL AND CULTURAL

- Connecting Pathway
- ⌋ Bridge Connection
- ⊙ Barrowcliffe Bridge

Photo essay - Transform Manukau



1_ Wiri Station Culvert



2_ Puhinui Stream



3_ Wiri Stream Reserve Footpath



4_ Industrial Zone



5_ Wiri Stream Reserve Bridge



6_ Methodist Church



7_ Raataa Vine Culvert



8_ Manukau Train Station



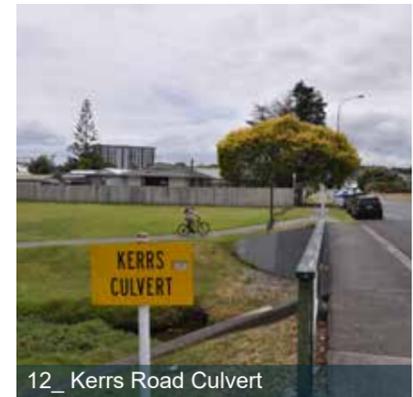
9_ Puhinui Stream



10_ Westfield Mall Place



11_ Hayman Park



12_ Kerrs Road Culvert



13_ Wiri Stream Reserve Alleyway



14_ Industrial Zone Footpath



15_ Residential on Kerrs Road



16_ Raataa Vine Bridge





KEY

- Transform Manukau
- Puhinui Stream
- Ngaa Ara o Te Puhinui (off-stream section)*
- Open space
- Existing Building Footprint
- Potential Future Building Footprint
as per Eke Panuku Development Manukau Framework Plan, March 2017

PROJECT AREAS

- 1 Puhinui Domain
- 2 Manukau Walking and Cycling Plan
- 3 Transform Manukau Industry Stream Restoration
- 4 Hayman Park Redevelopment and Stormwater Pond Upgrade
- 5 Wiri Reserve Stream, Park and Pond Upgrade
- 6 Barrowcliff Bridge and Place
- 7 Wiri Playground
- 8 Kerrs Road Crossings
- 9 Wiri Development
- 10 Counties Manukau District Health Board Walkway and Wetland
- 11 Raataa Vine Stream and Park Upgrade
- 12 Counties Manukau District Health Board Development
- 13 Te Maara Kai o Wirihiina | Wirihiina Community Gardens
- 14 Special Housing Area - Pacific Events Centre Drive

STRATEGIC INITIATIVES

Planned projects throughout the catchment reflect and integrate strategic initiatives from Te Puhinui Regeneration Strategy. Some of these strategic initiatives have been spatially located on the Programme of Works Plan. Other strategic initiatives that are planned in the area which are less spatially bound such as Te Puhinui Economic Development and Te Puhinui Identity have not been represented on the plan.



*Ngaa Ara oo Te Puhinui | Te Puhinui Pathways runs along the length of the stream



KEY

- Transform Manukau
- Puhinui Stream
- Puhinui Path
- Puhinui Path (alternative)
- Open space
- Existing Building Footprint
- Potential Future Building Footprint

as per Eke Panuku Development Manukau Framework Plan, March 2017

PROJECT AREAS

- ① Kerrs Road Crossings
- ② Wirihana Development
- ③ Counties Manukau District Health Board Walkway and Wetland
- ④ Raataa Vine Stream and Park Upgrade
- ⑤ Counties Manukau District Healy Board Development
- ⑥ Te Maara Kai o Wirihiina | Wirihiina Community Gardens
- ⑦ Special Housing Area - Pacific Events Centre Drive

Manurewa High School

Manukau SuperClinic

Artist impression | Aspirational outcomes for Raataa Vine



- 1 **Protect and enhance Puhinui Stream to improve bank stability and habitat.**
- 2 **Protect and enhance riparian corridor to restore the ecological function of the stream.**

- 3 **Re-establish a matrix of forest patches large enough to support a range of habitats for native wildlife.**
- 4 **Te Waiohū play a lead role in fulfilling fundamental kaitiakitanga obligations on behalf of Te Puhinui.**

- 5 **Establish Te Puhinui as a living outdoor classroom.**
- 6 **Establish partnerships with education providers and local practitioners in Te Puhinui.**

- 7 **Develop and deliver Te Puhinui educational programmes for schools, communities and businesses.**
- 8 **Re-establish sites throughout Te Puhinui for traditional wild harvest.**

- 9 **Re-imagine and establish streets as places for people of all ages and abilities.**
- 10 **Orientate towards and connect to the Waters of Te Puhinui.**
- 11 **Increase the density and mix of uses of local neighbourhoods in Te Puhinui.**

- 12 **Create a shared walkway along Puhinui Stream from maunga/ mountains to moana/ sea.**
- 13 **Develop a catchment-wide wayfinding and signage for people moving through Te Puhinui.**



KEY

- Transform Manukau
- Puhinui Stream
- Puhinui Path
- Puhinui Path (alternative)
- Open space
- Existing Building Footprint
- Potential Future Building Footprint
as per Eke Panuku Development Manukau Framework Plan, March 2017

PROJECT AREAS

- ① Wiri Reserve Stream, Park and Pond Upgrade
- ② Barrowcliff Bridge and Place
- ③ Wiri Playground
- ④ Kerrs Road Crossings

Artist impression | Aspirational outcomes for Wiri Reserve



Tuna / *Anguilla Dieffenbachii*

Koromiko / *Hebe Salicifolia*

- 1 Protect and enhance Puhinui Stream to improve bank stability and habitat.
- 2 Protect and enhance riparian corridor to restore the ecological function of the stream.
- 3 Re-establish a matrix of forest patches large enough to support a range of habitats for native wildlife.
- 4 Reinvigorate, celebrate, and apply Te Waiohau lunar cycles.
- 5 Methodist Church
- 6 Develop a long-term catchment-wide monitoring and evaluation programme.
- 7 Identify, maintain, enhance and celebrate Te Puhinui unique natural, cultural and built heritage.
- 8 Re-establish sites throughout Te Puhinui for traditional wild harvest.
- 9 Orientate development towards and connect to the Waters of Te Puhinui
- 10 Develop a catchment-wide wayfinding and signage strategy for people moving through Te Puhinui.
- 11 Create a shared walkway along Puhinui Stream from maunga/ mountains to moana/sea.
- 12 Wiri Playground and a connecting network of play elements along Puhinui Stream corridor.



KEY

- Transform Manukau
- Puhinui Stream
- Puhinui Path
- Puhinui Path (alternative)
- Open space
- Existing Building Footprint
- Potential Future Building Footprint
as per Eke Panuku Development Manukau Framework Plan, March 2017

PROJECT AREAS

- ① Puhinui Domain
- ② Manukau Walking and Cycling Plan
- ③ Transform Manukau Industry Stream Restoration
- ④ Hayman Park Redevelopment and Stormwater Pond Upgrade

Artist impression | Aspirational outcomes for industrial zone of Transform Manukau area



Tiitarakura / Red-finned bully / *Gobiomorphus huttoni*

Puuriri / *Vitex lucens*

- 1 Protect and enhance Puhinui Stream to improve bank stability and habitat.
- 2 Protect and enhance riparian corridor to restore the ecological function of the stream.
- 3 Identify and restore overland flow paths throughout Te Puhinui.
- 4 Re-establish a matrix of dense, multi-layered forest patches large enough to support a range of habitats for native wildlife.
- 5 Reinvigorate, celebrate, and apply Te Waiohua lunar cycles.
- 6 Acknowledge, record and celebrate the stories of place of mataawaka, Pasifika, Paakehaa, and tau iwi communities.
- 7 Establish a physical and digital hub dedicated to deepening our collective understanding of Te Puhinui.
- 8 Develop a strategy for public arts, taonga and culture design integration for Te Puhinui.
- 9 Orientate development towards and connect to the Waters of Te Puhinui.
- 10 Re-imagine and establish streets as places for people of all ages and abilities.
- 11 Develop a wayfinding and signage strategy for people moving through Te Puhinui.
- 12 Create a shared walkway along Puhinui Stream from maunga/ mountains to moana/sea.

APPENDICES

Appendix A – Strategic initiatives overview

Appendix B – Plants for regenerating Te Puhinui (Draft)

APPENDIX A - Strategic initiatives overview



Taiao | Nature



Te Wai o te Puhinui | *Waters of Te Puhinui*

Sub-Initiatives

- Catchment-wide Stream Restoration
- Daylight and Naturalise Overland Flow Paths
- Permeable Areas and Infiltration
- Reinstate Floodplains
- Strategic Infrastructure Renewal
- Blue Green Industry



Te Ngahere o Te Puhinui | *Te Puhinui Forest*

Sub-Initiatives

- Healthy Stream Corridors
- Forest Patches
- Canopy Cover in Urban Areas
- Coastal Forest Enhancement
- Te Puhinui Nursery
- Pest-free Te Puhinui



Te Kaitiakitanga me te Tiakitanga oo Te Puhinui | *Te Puhinui Stewardship*

Sub-Initiatives

- E Waiohua Kaitiakitanga
- Te Roopuu Tiaki i Te Puhinui | Friends of Puhinui
- Te Puhinui Corporate Responsibility Initiative



Te Maaramatanga o Te Puhinui | *Te Puhinui innate wisdom*

Sub-Initiatives

- Te Maramataka o Te Waiohua | *Te Waiohua Lunar Cycles*
- Te Reo Waiohua Strategy | *Te Waiohua Language Strategy*
- Taiao as Kaitiaki | *Nature as Guardian and Educator*



Te Puungao o Te Puhinui | *Te Puhinui Energy Strategy*

Sub-Initiatives

- Warm Healthy Homes
- Te Puhinui Energy Use and Efficiency Strategy
- Te Puhinui Energy Production and Storage
- Low-carbon Transport



Tangata | People



Te Mana Whakahaere o Te Puhinui | *Te Puhinui Governance*

Sub-Initiatives

- Te Whakaoratanga o te Puhinui | *Puhinui Regeneration Charter*
- Steering Group
- Te Puhinui Ancestral Naming Policy
- Te Puhinui Regeneration Agency
- Manukau Harbour Forum
- Policy, Planning and Strategy Alignment
- Living Te Puhinui Regeneration Strategy
- Environmental Compliance
- Manurewa Marae Community Development



Te Puhinui Identity

Sub-Initiatives

- Te Waiohua Puuraakau | *Te Waiohua Iwi Origin Narratives*
- Mana Whenua Puukoorero | *Mana Whenua Migration and Occupation Narratives*
- Hapori Puukoorero | *Puhinui Community Narratives*
- Te Puhinui is a Tuupuna



Te Puhinui Living Lab

Sub-Initiatives

- Te Arotakinga o Te Puhinui | *Te Puhinui Monitoring and Evaluation Framework*
- Te Puhinui Hub
- Te Puhinui Co-Labs
- Te Puhinui Citizen Science
- Share Learnings



Te Puhinui Activation, Communication + Engagement Campaign

Sub-Initiatives

- Te Puhinui Empowered Communities Approach
- Te Puhinui Place Based Education
- Te Puhinui Communications Campaign



Te Whanaketanga Oohanga o Te Puhinui | *Te Puhinui Economic Development*

Sub-Initiatives

- Skills, Innovation, Employment and Enterprise Hub
- Indigenous and Social Procurement
- Rangatahi Tuu Kaha | *Te Puhinui Youth Development Programme*
- Te Puhinui Displacement and Resettlement Manaaki Strategy
- Te Puhinui Community Land Trust
- Te Puhinui Philanthropy



Whenua | Place



Nga Tohu o Te Puhinui | *Symbols of Te Puhinui*

Sub-Initiatives

- Te Mana o Nga Matukuria
- Te Puhinui Cultural Tohu / Markers
- Te Puhinui Public Arts and Cultural Taonga Integration



Te Puhinui Food Sovereignty

Sub-Initiatives

- Te Puhinui Local Food Strategy
- Te Puhinui Food Commons
- Nga Mahinga Kai o Te Puhinui | Food Gathering Sites
- Te Maara Kai o Wirihana | *Wirihana Community Gardens*



Te Para Kore i Te Puhinui | *Te Puhinui Zero Waste Systems*

Sub-Initiatives

- Te Puhinui Resource Recovery Centre
- Circular Material Management
- Te Puhinui Local Goods and Services



Restructuring Te Puhinui Built Environment

Sub-Initiatives

- Orientate towards and connect to the Waters of Te Puhinui
- Human-scale Communities
- Retrofitting the Built Environment
- Safe and Healthy Streets
- Te Puhinui Backyard Initiative
- Te Puhinui Open Space Network



Nga Ara o Te Puhinui | *Te Puhinui Pathways*

Sub-Initiatives

- Te Puhinui Path
- Te Ara Huupara o Te Puhinui | *Te Puhinui Play-scape*
- Te Puhinui Fitness Trail
- Te Puhinui Signage and Wayfinding

APPENDIX B - Plants for regenerating Te Puhinui

Appendix B - Plants for regenerating Te Puhinui is intended to help realise te ora oo whakapapa and the establishment of a healthy viable and diverse seed stock for the intergenerational regeneration of Te Puhinui. Through the pursuit of this goal Te Puhinui ecosystems will be regenerated to health.

The first four pages identify links to other strategic initiatives and sub-initiatives within the broader Te Whakaoranga o Te Puhinui: Puhinui Regeneration Strategy, give guidance for the selection of seeds and the propagation of plant material, and provide an overview of the three broad areas within Puhinui Catchment - upper, middle, lower catchment and coastal environs.

The remainder of the appendix outlines plants for revegetating Te Puhinui that have been selected based on their historical occurrence within the catchment, their suitability to the underlying natural characteristics and features of the local environs, and the infrastructure requirements of Te Puhinui. Plants have also been selected based on their contribution to biodiversity outcomes, including threatened species, as well as for the local provision of food, medicine and fibre for the people of Te Puhinui.

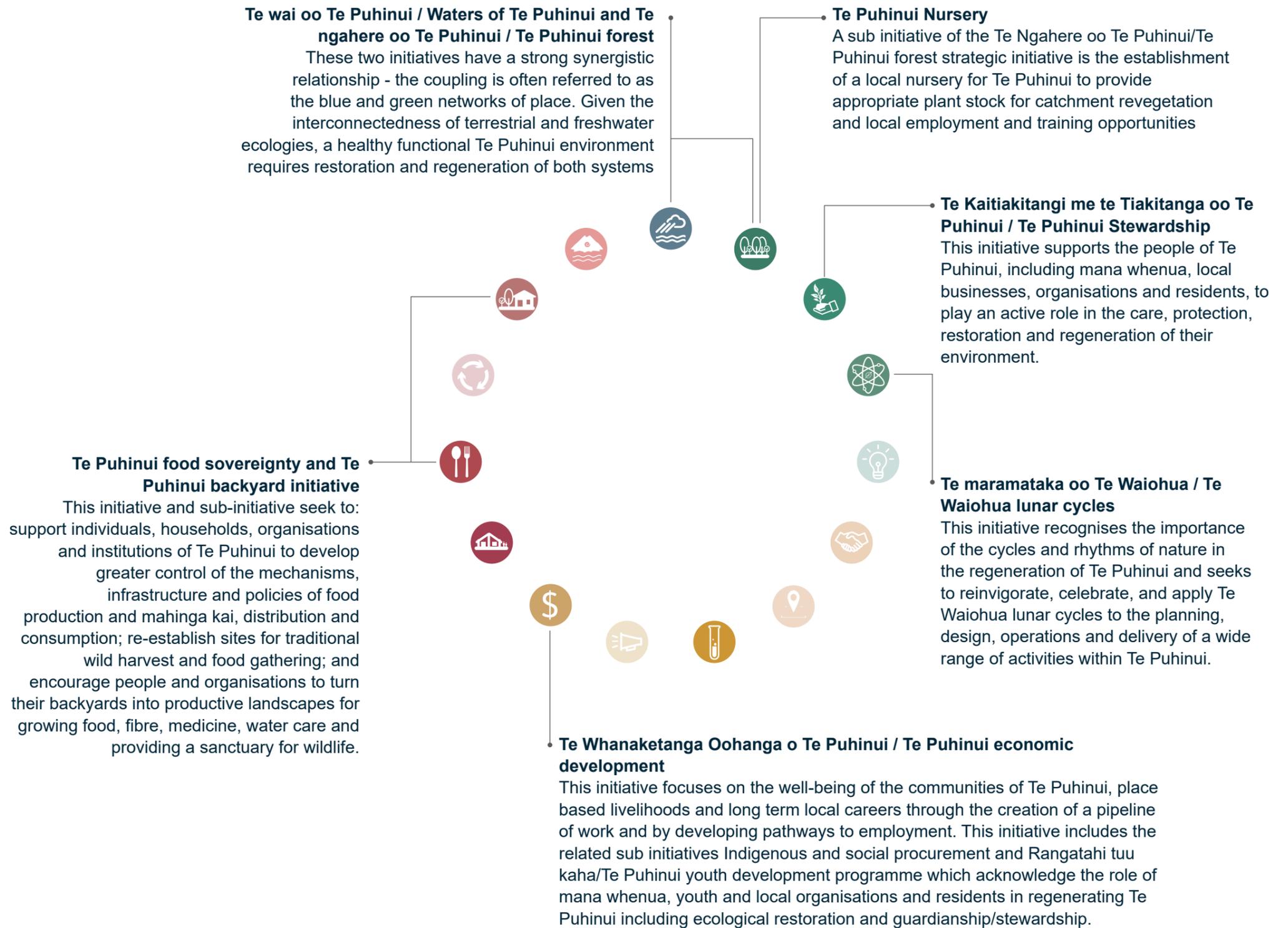
Revegetating and sustaining Te Puhinui is intended for use by any agency, operator, practitioner, or nursery working in the catchment area.

This document uses te reo Waiohua conventions, notably the use of double vowels - Refer to Te Reo Waiohua Strategy/Te Waiohua Language Strategy sub-initiative for more information about te reo Waiohua.

Refer to 'Te Haumanu Taiao: Restoring the Natural Environment' (in draft at time of writing) which is being led by Auckland Council for guidance on how to restore indigenous terrestrial and wetland ecosystems and riparian areas.

Links to Te Puhinui strategic initiatives

Plants for regenerating Te Puhinui link to, and support, a range of strategic initiatives. This diagram identifies all the strategic initiatives and sub initiatives that plants for regenerating Te Puhinui will support. See Te Whakaoranga o Te Puhinui: Te Rautaki/Te Puhinui Regeneration Strategy for a complete list and description of all the strategy initiatives and sub-initiatives.



Sourcing seed and propagating plant material

In order to restore the natural and cultural heritage of Te Puhinui, plants for regenerating Te Puhinui should, wherever possible, be sourced from the local Te Puhinui environs. The ecosystems of Te Puhinui have been significantly modified and the underlying characteristics that determine the range and extent of plants and different ecosystems have been permanently altered. As a result there are not necessarily viable, local seed sources for many of the plants that once existed in Te Puhinui. To balance the trade off between the desire to utilise seeds sourced from the local environment on the one hand, and to regenerate the catchment with a wide range of species suitable for the new urban context of Te Puhinui on the other, the following considerations need to be applied for sourcing and propagating seeds and plant material:

- Indigenous species found historically within the local Te Puhinui environs with existing, viable sources of seed or plant material.
- Indigenous species found historically within the local Te Puhinui environs without existing, viable, local sources of seed or plant material, but with existing, viable, bio-regional sources as close to and as practical as possible to the project area.
- New Zealand native species that have demonstrated performance in similar urban environments within the Taamaki Makaurau bioregion.
- Species that provide food, medicine or fibre for use by tangata/people without displacing or replacing indigenous species or negatively impacting the environment.

Plant lists for regenerating Te Puhinui

Plant lists for regenerating Te Puhinui are organised into three broad ecosystem types that relate to their location within the catchment and the associated land uses. Each ecosystem type is organised into plant communities that relate to specific environments and applications.

Please note that the plant lists provided herein are a guide only. They represent a starting point for individual projects that will require further refinement and enrichment with additional species specific to each project's context and conditions.

Te Ngahere oo Te Puhinui/Te Puhinui Forest

The plant lists for Te Ngahere oo Te Puhinui provide a broad list of forest species suitable for Te Puhinui. The plant lists are organised into six plant communities which cover the broad forest types of Te Puhinui:

- Inland forests including puuriri forest; taraire, tawa, podocarp forest; and kauri, podocarp, broadleaved, beech forest - organised into upper, middle and lower catchment.
- Coastal forests - excluding plant communities within the tidal zone such as mangrove forests and seagrass meadows.
- Stream and aquatic habitats - represented here as a riparian corridor.
- Street trees - a plant community that did not exist prior to urbanisation that is now a significant part of the catchment's ecology.

Te Wai oo Te Puhinui/Waters of Te Puhinui

The plant lists for Te Wai oo Te Puhinui/Waters of Te Puhinui provide guidance for three distinct water sensitive design devices that incorporate natural and constructed elements designed to deliver a wide range of ecological functions.

- Wetlands - large shallow planted ponds incorporating a wide variety of species that allow sediment to settle and the biofiltration of contaminants.
- Rain gardens and urban swales - constructed depressions and drainage courses planted with a variety of indigenous species to filter contaminants and in some cases, infiltration to groundwater.
- Earth roofs - Partially or completely planted roof to filter water and air and provide a degree of stormwater detention.

Productive gardens

The plant lists for productive gardens are organised into forest gardens and medicinal plants. A forest garden is a productive ecosystem based on the structure and function of a forest of diverse species, which can include a range of fruit and nut trees, shrubs, herbs, vines and perennial vegetables which have yields directly useful to people.

¹Plants for intensive gardens are not included in this document. For information on intensive gardens for annual vegetables, salad mixes, and herbs; flowers for cutting and beneficial insects suitable for Te Puhinui see:

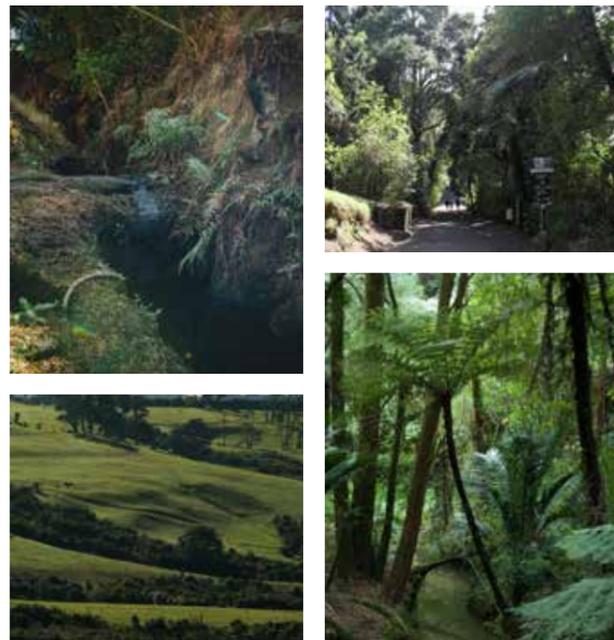
- Organic Edible Garden - <https://organicediblegarden.co.nz/>
- Garden Grow: Keep your garden growing - see what to plant right now - <https://www.gardengrow.co.nz/>

Auckland's unique and highly productive environment is one of very few places in the world where it is possible to grow three different types of forest garden in the same location - deciduous, Mediterranean and subtropical.

Medicinal plants outline a range of plants for well-being and include a range of rongoaa Maaori/traditional Maaori medicinal plants.

Catchment overview

UPPER CATCHMENT



The upper catchment/headwaters are the source point of Puhinui Stream. Groundwater infiltration and aquifer recharge in this area of the catchment is crucial in maintaining base flow of Te Puhinui Stream. The mature native forest that surrounds Puhinui Stream and its tributaries is a representative example of remnant forest of the Manukau Lowlands comprising of ancient podocarp forests of mature rimu, kahikatea, miro, matai and tootara and kauri. These ancient forest patches are some of the best stands of matai and tootara in the region, with almost all that is left of the alluvial flat forests once dominant in Manukau.

MIDDLE CATCHMENT



The mid catchment includes gently rolling landforms where stormwater run-off merges together to form larger stream and wetland systems. Originally the mid catchment was dominated by puuriri forest on alluvial and volcanic soils. This area of the catchment is now highly modified through urbanisation and the stream conditions vary from narrow, often channelised stream corridors in dense urban areas with some areas of wider floodplains in open spaces and undeveloped land.

The riparian networks through these areas are often highly constrained and require protection and enhancement through planted buffers and increased stewardship. In combination with a patchwork of native forests, groves of trees and wetlands; the riparian network forms the foundation for the urban ngahere network through the mid catchment.

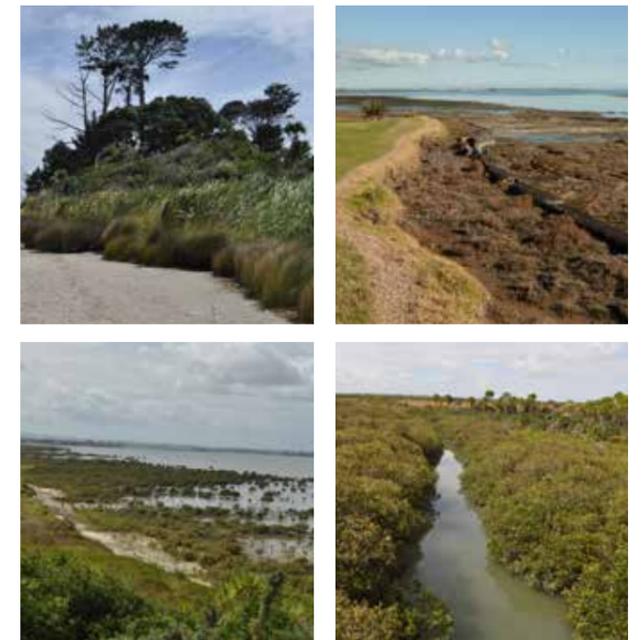
LOWER CATCHMENT



The lowland and coastal environment is characterised by extensive areas of low lying, flat to undulating land. Historically consisting of kahikatea swamp forest, boggy streams and wetlands on alluvial substrates where water would have dispersed widely across the landscape to provide a rich environment for freshwater and saline wetlands, estuaries and coastal forests. The remaining forest fragments consist of mixed podocarp-broadleaf secondary forests, in which kahikatea, lowland tootara and puuriri are the prominent species.

This land is highly modified, particularly the commercial centres and industrial zones that characterise Puhinui Catchment. Restoration of stream margins, gullies and floodplains with riparian planting help to prevent erosion, mitigate contaminants and connect ecological fragments.

COASTAL



The coastal edge is the interface of freshwater, marine and terrestrial environments, providing diverse community assemblages and unique coastal and marine habitats. This environment consists of muddy shorelines, bands of mangroves, intertidal wetlands, salt marsh and salt meadows, rushlands and herb fields. The upper clay banks are populated with coastal forest species which tolerate harsh coastal conditions including poohutukawa, puuriri, kohekohe, taraire, karaka, tiitoki, mangleao, rewarewa and niikau. This unique marine environment supports an important breeding and feeding habitat to coastal fish, shellfish and marine birds. Estuarine habitats within this environment encourage diverse food webs for freshwater and marine fish as well as migratory birds.

The coastal edge is now a highly modified environment contributing toward ongoing and increasing stresses from changing climatic conditions and coastal inundation. Restoring coastal ecosystems and the hydrological function of the coastal margin will help to mitigate against these stresses and significantly improve the adaptive capacity of this dynamic environment.

Te Ngahere oo Te Puhinui / Te Puhinui Forest

UPPER CATCHMENT

DRAFT

The upper catchment consists of two forest types - puuriri forest and kauri, podocarp, broadleaved and beach forest which also includes taanekaha, tootara, rimu, miro, tawa, hiinau, raataa, rewarewa, toowai, kohekohe, maire and taawari.



- Kauri, podocarp, broadleaved, beech forest.
- Warm Forest (WF12)
- Puuriri Forest. Warm Forest (WF7)

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
LOW GROWING GROUND COVERS 0 - 0.3m					
Poohuehue	Muehlenbeckia complexa	✓	✓		Plant on mass
Paanakenake	Pratia angulata	✓	✓		Plant on mass
	Libertia peregrinans	✓	✓		Nationally vulnerable species.
Miikoikoi	Libertia grandiflora	✓	✓		
Tuukaauki	Libertia ixioides	✓	✓		
Totara	Fuchsia procumbens	✓	✓		Threatened species. Requires semi shade to full sun.
LOW GROWING 0.3 - 1M					
Puukio	Carex virgata	✓	✓		
Pukupuku	Blechnum parrisiae	✓	✓		Plant in clustered blocks
Kiokio	Blechnum novae-zelandiae				Requires damp soils.
Piupiu	Blechnum discolor				
MEDIUM HEIGHT/SHRUB UNDERSTORY - 1-3M					
Whauwhaupaku	Pseudopanax arboreus	✓	✓		Tolerates dry and exposed conditions
Patete	Schefflera digitata	✓	✓		Requires shade
Taawhiri karo	Pittosporum cornifolium	✓	✓	✓	Epiphytic. 2 year propagation lead in.
Mingimingi	Coprosma propinqua	✓	✓		Manu
TALLER SHRUBS/INFILL - 3-6M					
Tarata	Pittosporum eugenioides	✓	✓		Rongoaa
Koohuuuu, rautaahiri	Pittosporum tenuifolium	✓	✓		
Patete	Schefflera digitata	✓	✓		Rongoaa, Requires shade
Kawakawa	Piper excelsum		✓		Rongoaa, Requires shade
Koowhai	Sophora microphylla	✓	✓	✓	Rongoaa, Manu
Maapou, maapau	Myrsine australis	✓	✓		Ahi
Houhere	Hoheria populnea	✓	✓		Toi, Ahi, Rongoaa

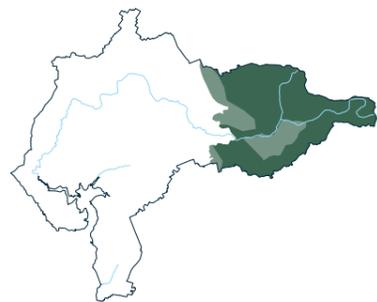
Maintenance: Design and layout of landscape projects to take into consideration protection and ongoing growing environments to promote natural form and supported plant health. Each individual planting design should have a considered maintenance specification.

Te Ngahere oo Te Puhinui / Te Puhinui Forest

UPPER CATCHMENT

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MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	ECOSYSTEM	NOTES
NGAHERE/FOREST CANOPY - 6M ABOVE						
Kauri	Agathis australis			✓	WF4, WF12	At risk of Kauri dieback. Risk assessment needed prior to planting. 2 year propagation lead in from clean plant source required.
Taawai	Nothofagus truncata			✓	WF12	
Tootara	Podocarpus totara	✓	✓	✓	WF7, WF12	2 year propagation lead in, Rongoaa, Ahi
Rimu	Dacrydium cupressinum			✓	WF12	2 year propagation lead in, Rongoaa, Manu, plant more than one.
Karaka	Corynocarpus laevigatus	✓	✓	✓	WF7	Rongoaa
Taanekaha	Phyllocladus trichomanoides			✓	WF12	2 year propagation lead in, Rongoaa
Miro	Pectinopitys ferruginea			✓	WF12	2 year propagation lead in, Manu
Tawa	Beilschmiedia tawa			✓	WF7, WF12	2 year propagation lead in, will require host
Taraire	Beilschmiedia tarairi			✓	WF7	
Hiinau	Elaeocarpus dentatus			✓	WF12	2 year propagation lead in
Raataa	Metrosideros robusta			✓	WF7, WF12	Myrtle rust risk. 2 year propagation lead in
Rewarewa	Knightia excelsa	✓	✓	✓	WF7, WF12	
Toro	Myrsine salicina			✓		2 year propagation lead in
Kohekohe	Didymocheton spectabilis			✓	WF7, WF12	Manu
Mataii	Prumnopitys taxifolia			✓	WF7	2 year propagation lead in, Manu
Tiitoki	Alectryon excelsus subsp. excelsus		✓	✓	WF7	Rongoaa
Porokaiwhiri	Hedycarya arborea			✓	WF7	Requires shade
Kaikomako	Pennantia corymbosa			✓		Regionally rare species, Ahi, Toi



- Kauri, podocarp, broadleaved, beech forest.
- Warm Forest (WF12)
- Puuriri Forest. Warm Forest (WF7)

Te Ngahere oo Te Puhinui / Te Puhinui Forest

DRAFT

MID CATCHMENT

The middle catchment consists of the Puuriri forest type and is characterised by puuriri, karaka, kohekohe and taraire. The mid catchment would have also supported stands of kahikatea swamp forest with maire, tiitoki and pukatea along boggy streams and in wetlands.



- Kauri, podocarp, broadleaved, beech forest. Warm Forest (WF12)
- Puuriri Forest. Warm Forest (WF7)
- Poohutukawa, puuriri, broadleaved forest. Warm Forest (WF4)

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
LOW GROWING GROWDCOVERS 0 - 0.3m					
Poohuehue	Muehlenbeckia complexa	✓	✓		Plant on mass
Paanakenake	Pratia angulata	✓	✓		Plant on mass
	Libertia peregrinans	✓	✓		Nationally vulnerable species
Miikoikoi	Libertia grandiflora	✓	✓		
Tuukaauki	Libertia ixioides	✓	✓		
LOW GROWING - 0.3 - 1M					
Pukupuku	Blechnum parrisiae		✓		Plant in clustered blocks
	Doodia aspera		✓		
Kiokio	Blechnum novae-zelandiae				Prefers wet/damp soils
Piupiu	Blechnum discolor				
Tuuhara, Peepepe	Machaerina sinclairii	✓	✓		Plant on mass
MEDIUM HEIGHT/SHRUB UNDERSTORY - 1-3M					
Whauwhaupaku	Pseudopanax arboreus		✓		Tolerates dry and exposed conditions
Patete	Schefflera digitata		✓		Requires shade
Taawhiri karo	Pittosporum cornifolium		✓	✓	Epiphytic, 2 year propagation lead in
Mingimingi	Coprosma propinqua		✓		Manu
TALLER SHRUBS/INFILL - 3-6M AND ABOVE					
Tarata	Pittosporum eugenioides	✓	✓		Rongoaa
Koohuuuu, rautaahiri	Pittosporum tenuifolium	✓	✓		
Kawakawa	Piper excelsum		✓		Requires dry, semi shade. Rongoaa
Koowhai	Sophora microphylla	✓	✓	✓	Manu
Maapou, maapau	Myrsine australis	✓	✓		Ahi
Houhere	Hoheria populnea	✓	✓		Ahi, Toi, Rongoaa
Maahoe	Melicytus ramiflorus	✓	✓		Ahi, plant small numbers sparsely
	Coprosma areolata	✓	✓		
Koonini, kootukutuku	Fuchsia excorticata			✓	Ahi
Whekii	Dicksonia squarrosa			✓	
Maamaangi	Coprosma arborea	✓	✓		

Maintenance: Design and layout of landscape projects to take into consideration protection and ongoing growing environments to promote natural form and supported plant health
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Te Ngahere oo Te Puhinui / Te Puhinui Forest

MID CATCHMENT

DRAFT

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	ECOSYSTEM	NOTES
NGAHERE/FOREST CANOPY - 6M ABOVE						
Puuriri	<i>Vitex lucens</i>	✓	✓	✓	WF7	Manu, Rongoaa, Toi
Kohekohe	<i>Didymocheton spectabilis</i>			✓	WF7, WF4	Manu, Rongoaa
Maatai	<i>Prumnopitys taxifolia</i>			✓	WF7	Manu, Rongoaa, Toi
Tiitoki	<i>Alectryon excelsus</i> subsp. <i>excelsus</i>			✓	WF7, WF4	Manu, Rongoaa
Koowhai	<i>Sophora microphylla</i>	✓	✓	✓	WF4, WF7	Manu, Rongoaa
Kahikatea	<i>Dacrycarpus dacrydioides</i>			✓	WF7, WF9	Manu, Rongoaa, Ahi
Tootara	<i>Podocarpus totara</i>		✓	✓	WF7, WF12	Manu, Rongoaa, Ahi, Toi
Karaka	<i>Corynocarpus laevigatus</i>	✓	✓	✓	WF7, WF4	Manu, Rongoaa, Toi
Rewarewa	<i>Knightia excelsa</i>	✓	✓	✓	WF7, WF4, WF12	Kai, Manu, prefers well drained dry soil
Taraire	<i>Beilschmiedia tarairi</i>			✓	WF7, WF4	Manu
Pukatea	<i>Laurelia novae-zelandiae</i>			✓	WF7	Rongoaa, Manu, requires damp to saturated soil
Tawa	<i>Beilschmiedia tawa</i>			✓	WF7, WF4, WF12	Manu, Rongoaa
Raataa	<i>Metrosideros robusta</i>			✓	WF7, WF12	Manu, Toi
Rimu	<i>Dacrydium cupressinum</i>			✓	WF12	Manu, Rongoaa, Toi, Plant more than one
Toowai, Tawhero	<i>Weinmannia silvicola</i>			✓	WF12	Manu, Rongoaa
Hiinau	<i>Elaeocarpus dentatus</i>			✓	WF12	Manu, Rongoaa, Toi
Miro	<i>Pectinopitys ferruginea</i>			✓	WF12	Manu, Rongoaa
Niikau	<i>Rhopalostylis sapida</i>		✓	✓	WF7, WF4	Manu, Toi, plant in clusters
Kootukutuku	<i>Fuchsia excorticata</i>		✓	✓		Manu, Toi, Ahi, Kai. Will require shelter of surrounding plants, not a stand alone specimen.



- Kauri, podocarp, broadleaved, beech forest. Warm Forest (WF12)
- Puuriri Forest. Warm Forest (WF7)
- Poohutukawa, puuriri, broadleaved forest. Warm Forest (WF4)

Te Ngahere oo Te Puhinui / Te Puhinui Forest

LOWER CATCHMENT

DRAFT

The lower catchment is composed of three forest types - Puuriri forest; Poohutukawa, puuriri, broadleaved forest which includes puuriri, karaka, and taraire as well as koowhai, niikau and kohekohe; and Taraire, tawa, podocarp forest which includes rimu, raataa with kahikatea, hiinau, rewarewa, pukatea, miro, puuriri, karaka, niikau and ponga.



- Taraire, Tawa, Podocarp forest. Warm Forest (WF9)
- Puuriri Forest. Warm Forest (WF7)
- Poohutukawa, puuriri, broadleaved forest. Warm Forest(WF4)

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
LOW GROWING GROUNDCOVERS 0 - 0.3m					
Poohuehue	Muehlenbeckia complexa	✓	✓		Habitat for Mokomoko
Paanakenake	Pratia angulata	✓	✓		Rongoaa, plant on mass
	Libertia peregrinans	✓	✓		Nationally vulnerable species
Miikoikoi	Libertia grandiflora	✓	✓		
Tuukaauki	Libertia ixioides	✓	✓		
Remuremu	Selliera radicans	✓	✓		Tolerates salt water, plant on mass
Totara	Fuchsia procumbens	✓	✓		Requires semi shade to full sun,
Tii Rauriki	Cordyline pumilio		✓	✓	Purerehua, Semi shade to full sun
LOW GROWING - 0.3 - 1M					
Pukupuku	Blechnum parrisiae		✓		Plant in clustered blocks
Korokio taaranga	Corokia cotoneaster		✓		Requires dry environment
Tuuhara, Peepepe	Machaerina sinclairii	✓	✓		Plant on mass
MEDIUM HEIGHT/SHRUB UNDERSTORY - 1-3M					
Harakeke	Phormium tenax	✓	✓		Puurerehua
Patete	Schefflera digitata		✓		Requires shade, Rongoaa
Taawhiri karo	Pittosporum cornifolium		✓	✓	Epiphytic
Mingimingi	Coprosma propinqua		✓		Habitat for Mokomoko
Tuuhara, Peepepe	Machaerina sinclairii	✓	✓		Plant on mass
	Olearia solandri		✓		Requires dry coastal conditions. Puurerehua
Maakaka	Plagianthus divaricatus		✓	✓	Salt marsh range
	Machaerina juncea			✓	
Koromiko	Veronica stricta var. stricta	✓	✓		Rongoaa, Toi, Pepe ao uri, Puurerehua
Kawakawa	Piper excelsum		✓		Rongoaa
Taurepo	Rhabdothamnus solandri		✓		Requires semi shade

Te Ngahere oo Te Puhinui / Te Puhinui Forest

LOWER CATCHMENT

DRAFT

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
TALLER SHRUBS/INFILL - 3M AND ABOVE					
Tarata	Pittosporum eugenioides	✓	✓		Rongoaa
Koohuuuu, rautaahiri	Pittosporum tenuifolium	✓	✓		
Patete	Schefflera digitata		✓		Requires shade, Rongoaa
Kawakawa	Piper excelsum		✓		Rongoaa, semi shade
Koowhai	Sophora microphylla	✓	✓	✓	Plant in clusters/ groupings. Rongoaa
Maapou, maapau	Myrsine australis	✓	✓		Ahi
Houhere	Hoheria populnea	✓	✓		Rongoaa, Toi, Ahi
	Coprosma areolata	✓	✓		Habitat for Mokomoko
Tii koouka	Cordyline australis	✓	✓		Rongoaa, Toi, Puurerehua
Kaaramuramu	Coprosma robusta	✓	✓		Manu, Rongoaa, Toi
Kaanuka	Kunzea robusta	✓	✓		
Maahoe	Melicytus ramiflorus	✓	✓		Ahi, Manu, plant small numbers sparsely



- Taraire, Tawa, Podocarp forest
Warm Forest (WF9)
- Puuriri Forest. Warm Forest (WF7)
- Poohutukawa, puuriri, broadleaved forest
Warm Forest(WF4)

Te Ngahere oo Te Puhinui / Te Puhinui Forest

LOWER CATCHMENT

DRAFT



- Taraire, Tawa, Podocarp forest
Warm Forest (WF9)
- Puuriri Forest. Warm Forest (WF7)
- Poohutukawa, puuriri, broadleaved forest
Warm Forest(WF4)

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	ECOSYSTEM	NOTES
NGAHERE/FOREST CANOPY - 6M ABOVE						
Puuriri	Vitex lucens	✓	✓	✓	WF4, WF7, WF9	Manu, Rongoaa, Toi
Poohutukawa	Metrosideros excelsa		✓	✓	WF4	Manu, Rongoaa, Toi
Kohekohe	Didymocheton spectabilis			✓	WF4, WF7, WF9	Manu, Rongoaa
Karaka	Corynocarpus laevigatus	✓	✓	✓	WF4, WF7, WF9	Manu, Rongoaa
Rewarewa	Knightia excelsa	✓	✓	✓	WF4, WF7, WF9	Manu, Rongoaa, Toi
Tawaapou	Planchonella costata			✓	WF4	Threatened species. Manu, Rongoaa, Toi
Tiitoki	Alectryon excelsus subsp. excelsus		✓	✓	WF4, WF7	Manu, Rongoaa, Toi
Akeake	Dodonaea viscosa		✓	✓	WF4	Toi
Koowhai	Sophora microphylla	✓	✓	✓	WF4, WF7	Manu, Rongoaa
Karo	Pittosporum crassifolium	✓	✓	✓	WF4	Manu
Taraire	Beilschmiedia tarairi			✓	WF4, WF7, WF9	Manu
Tawa	Beilschmiedia tawa			✓	WF4, WF7, WF9	Manu, Toi
Mangeao	Litsea calicaris			✓	WF4, WF9	Manu, Rongoaa
Ngaio	Myoporum laetum			✓	WF4	Manu, Rongoaa
Niikau	Rhopalostylis sapida		✓	✓	WF4, WF7, WF9	Manu, Toi, plant in clusters
Taurepo	Rhabdothamnus solandri		✓		WF4	Manu
Tii koouka	Cordyline australis	✓	✓			Manu, Rongoaa, Kai, Toi
Maahoe	Melicytus ramiflorus	✓	✓			Manu, Ahi, plant small numbers sparsely
Houpara	Pseudopanax lessonii		✓			Tolerates dry and exposed conditions
Kaanuka	Kunzea robusta	✓	✓		WF4	Manu, Toi
Maanuka	Leptospermum scoparium	✓	✓			Manu, Rongoaa, Toi
Akapuka	Griselinia lucida		✓			Epiphytic, dislikes wet environments

Te Ngahere oo Te Puhinui / Te Puhinui Forest

COASTAL EDGE

DRAFT

The coastal edge is a unique and diverse group of ecosystems consisting of poohutukawa, puuriri and broadleaved forests fringed with mangrove forest, scrub, saltmarsh, rushland and herbfield within brackish tidal estuaries, inlets, rivers, streams and gravel beaches. Plants have been selected to tolerate the exposed and volatile extremes of these environments.

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
SWAMP/SALT MARSH/SALT MEADOWS - AQUATIC					
Upokotangata	Cyperus ustulatus		✓		Toi, tolerates a wide range of environmental conditions
Wiwi	Ficinia nodosa		✓		Manu
Oioi	Apodasmia similis		✓		Manu
Maakoako	Samolus repens var. repens		✓		Manu, Rongoaa
Koopuungaawhaa	Schoenoplectus tabernaemontani		✓		Manu
	Austrostipa stipoides		✓		Manu, Rongoaa
SWAMP/SALT MARSH/SALT MEADOWS - SHRUBS/HERBS/RUSHES					
	Olearia solandri		✓		Puurerehua
Maakaka	Plagianthus divaricatus		✓		Manu, Toi, Salt marsh range
	Cotula coronopifolia		✓		Puurerehua
Remuremu	Selliera radicans	✓			Tolerates salt water, plant on mass
Ureure	Sarcocornia quinqueflora		✓		Kai
	Machaerina juncea		✓		
Waiuu atua	Euphorbia glauca		✓		At risk species. Requires dry coastal conditions. Requires propagation lead in for project.
Koromiko	Veronica stricta var. stricta	✓	✓		Manu, Rongoaa, Toi, Pepe ao uri, Puurerehua
Wiwi	Ficinia nodosa	✓	✓		Manu, Rongoaa



■ Mangrove Forest and Scrub. Saline (SA1)

Te Wai oo Te Puhinui / Waters of Te Puhinui

RIPARIAN CORRIDOR

DRAFT

Stream riparian corridors run along the length of the stream and form the interface between land and water ecosystems. Riparian planting filters run-off from adjacent land uses, stabilises the bank and prevents erosion through root binding of the soil. The buffer effect of riparian vegetation acts like sponge by absorbing and retaining water, helping to protect the land from flood damage.

Riparian planting helps to form aquatic ecosystems by creating habitat and regulating light, oxygen levels and temperature of the water. This in turn creates ecological connectivity along the stream and between habitats.

Stream Margin

Stream margin planting occurs along the edges of the stream channel and is typically composed of grass-like sedges up to one meter tall. This area of the stream is particularly vulnerable to erosion and planting in this area should aim to provide bank stabilisation, regulate stream temperatures and be able to lie flat and manoeuvre when inundated by flood waters.

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
STREAM MARGIN					
Puukio	Carex virgata	✓	✓		
Puurei	Carex secta	✓	✓		
Rautahi	Carex germinata	✓	✓		Plant few as spreads easily
	Carex dissita	✓	✓		Requires semi shade
Upokotangata	Cyperus ustulatus	✓	✓		Toi
STREAM BANK LOWER					
Maapere	Gahnia setifolia	✓	✓		Toi, Puurerehua, plant sparingly
Paakauroharoha	Pakau pennigera	✓	✓		Puurerehua
Kiokio	Blechnum novae-zelandiae		✓		
Kukuraho	Bolboschoenus fluviatilis		✓		
Tuuhara, Peepepe	Machaerina sinclairii	✓	✓		Toi, Puurerehua
Turawera	Pteris tremula	✓	✓		
STREAM BANK UPPER					
Koromiko	Veronica stricta var. stricta	✓	✓		Rongoaa, Pepe ao uri
Makomako	Aristolelia serrata	✓	✓		Manu, Rongoaa, Toi, Kai
Toetoe	Austroderia fulvida	✓	✓		Manu, Toi, requires full sun
Tuurutu	Dianella nigra	✓	✓		Toi, Mokomoko
Harakeke	Phormium tenax	✓	✓		Rongoaa, Toi, Manu, Mokomoko, Mahi kai, prefers full sun at all times



Te Wai oo Te Puhinui / Waters of Te Puhinui

RIPARIAN CORRIDOR

DRAFT

Stream Bank (Lower)

The stream bank sits adjacent to the stream margin planting and has very similar characteristics and functional requirements. This area is flat and is typically wet and boggy over winter and dry in summer. The plant selection for this area will accommodate high moisture levels during winter and flooding events as well as coping with periods of drought over the summer months. The species must be able to manoeuvre with and not restrict water during flooding events.

Stream Bank (Upper)

The upper stream bank has a similar planting selection with the addition of shrubs to bind the soil for bank stabilisation. Groundcovers are added to absorb and filter nutrient and sediment run-off.

Riparian Trees + Shrubs (Upper Terrace)

Riparian trees and shrubs are located on upper terraces as well as within the upper stream bank. Riparian trees and shrubs provide structure, frame adjacent spaces, provide habitat for birds and insects and help to regulate the temperature of the water by shading the stream. Trees and shrubs help to stabilise bankside and prevent erosion as well as absorb excess water through deep root penetration into the soil. The species selected are hardy and tolerant of damp soils and flooding events. The planting will also provide clear zones and unobstructed sight lines and view shafts, enhancing public safety.



MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
RIPARIAN SHRUBS & TREES UPPER TERRACE					
Putaputaweetaa	Carpodetus serratus		✓	✓	Manu, Pepe tuna, prefers saturated soils
Kaaramuramu	Coprosma robusta	✓	✓		Manu, Rongoaa
Maanuka	Leptospermum scoparium	✓	✓		Manu, Rongoaa
Maahoe	Melicytus ramiflorus	✓	✓		Manu, Ahi, plant small numbers sparsely
Maapou, maapau	Myrsine australis	✓	✓		Ahi
Houhere	Hoheria populnea	✓	✓		Rongoaa, Ahi, Toi
Porokaiwhiri	Hedycarya arborea		✓	✓	Manu, requires shade
Kohukohu	Pittosporum tenuifolium	✓	✓		
Tarata	Pittosporum eugenoides	✓	✓		Rongoaa
Patete	Schefflera digitata	✓	✓	✓	Rongoaa, requires shade
Kawakawa	Piper excelsum		✓	✓	Rongoaa , Requires semi shade.
Kaanuka	Kunzea ericoides	✓	✓	✓	Rongoaa
Maanuka	Leptospermum scoparium	✓	✓	✓	Rongoaa
Whēkii	Dicksonia squarrosa			✓	
Tii koouka	Cordyline australis	✓	✓		Rongoaa, Toi, Manu, Puurerehua
Kahikatea	Dacrycarpus dacrydioides			✓	Manu, Ahi, Toi
Maire tawake	Syzygium maire			✓	Threatened/ Endangered. Risk of myrtle rust. Manu
Rewarewa	Knightia excelsa	✓	✓	✓	Kai, Manu, prefers well drained dry soil
Pukatea	Laurelia novae-zelandiae			✓	Rongoaa, Manu, requires damp to saturated soil
Puuriri	Vitex lucens	✓	✓	✓	Rongoaa, Kai, Toi, Manu
Tuurepo	Streblus heterophyllus			✓	Requires shade to establish well
Tootara	Podocarpus tootara	✓	✓	✓	Toi

Te Ngahere oo Te Puhinui / Te Puhinui Forest

STREET TREES

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Street trees provide a significant structural element to the streetscape and are often a defining characteristic by framing the street, defining space for pedestrians and by helping to separate the footpath from the carriageway. They are symbolic of the landscapes' cultural heritage and contribute positively to Te Puhinui by:

- Providing habitat and increasing biodiversity
- Regulating local climate and mitigating against the urban heat island effect
- Improving air quality by filtering air borne particulates and pollutants including sulphur dioxide, nitrogen oxides, carbon monoxide, cadmium, nickel and lead
- Sequestering CO² (a mature tree absorbs approximately 21kg per year)
- Reducing stormwater run-off
- Improving water quality when incorporated into storm water management systems
- Providing a high amenity green leafy environment
- Improving and/or creating legibility and identity.



- Poohutukawa, puuriri, broadleaved forest (WF4)
- Puuriri Forest (WF7)
- Taraire, Tawa, Podocarp forest (WF9)
- Kauri, podocarp, broadleaved, beech forest (WF12)

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	ECOSYSTEM	NOTES
UPPER CATCHMENT						
Tootara	Podocarpus tootara		✓	✓	WF7, WF12	Rongoaa, Toi
Taanekaha	Phyllocladus trichomanoides			✓	WF12	Manu, Rongoaa, Toi (Upright form for first 20 years)
Taraire	Beilschmiedia tarairi			✓	WF7	Manu
Rewarewa	Knightia excelsa	✓	✓	✓	WF7, WF12	Manu, Toi (Upright form), Kai, prefers well drained dry soil
Kohekohe	Didymocheton spectabilis			✓	WF7, WF12	Manu, Rongoaa
Tiitoki	Alectryon excelsus subsp. excelsus		✓	✓	WF7	Manu, Rongoaa (Requires trunk guard)
MIDDLE CATCHMENT						
Puuriri	Vitex lucens	✓	✓	✓	WF7	Manu, Rongoaa, Toi (lower broad form as street tree)
Niikau	Rhopalostylis sapida		✓	✓	WF7, WF4	Manu, Toi (upright form)
Taraire	Beilschmiedia tarairi			✓	WF7, WF4	Manu, Rongoaa, Ahi, Toi
Rewarewa	Knightia excelsa	✓	✓	✓	WF12, WF4	Manu, Toi
Kohekohe	Didymocheton spectabilis			✓	WF7, WF4	Manu, Rongoaa
Tiitoki	Alectryon excelsus subsp. excelsus			✓	WF7, WF4	Manu, Rongoaa
Koowhai	Sophora microphylla	✓	✓	✓	WF4, WF7	Manu, Rongoaa
Karaka	Corynocarpus laevigatus	✓	✓	✓	WF7, WF4	Manu, Rongoaa

Note: Street tress

Select with a duty of care that individual specimen are street tree grown for purpose. Not force grown trees which leads to splitting of trunks. Specifications for tree guards, feeding and aftercare is essential to establishment and retention of natural form.

Te Ngahere oo Te Puhinui / Te Puhinui Forest

STREET TREES

The selection of street trees need to consider:

Durability and Resilience

Street trees need to be durable in a street environment and resistant to the effects of trampling, physical ‘mishandling’, vandalism, pollutants and a range of environmental conditions such as drought and wind exposure.

Form + Consistency

The ideal street tree will display a consistent form with a wide, open canopy that can be shaped around street lights, traffic and other structures without compromising its growth and overall form.

Nuisance

Street trees should not present a challenge to surface drainage through excessive leaf fall or root trespass to below ground drains or cause unnecessary nuisance or danger to people and property from shedding of limbs and excessive leaf fall.

Solar Access

The placement and density of street trees should give consideration to the impact shade will have on the streetscape environment and adjacent land uses. Light penetration in winter and shade/cooling in summer are preferred characteristics of selected trees as well as the ability to train and manage the trees structure and form for light availability and visibility.



- Poohutukawa, puuriri, broadleaved forest (WF4)
- Puuriri Forest (W7)
- Taraire, Tawa, Podocarp forest (WF9)
- Kauri, podocarp, broadleaved, beech forest (WF12)

DRAFT

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	ECOSYSTEM	NOTES
LOWER CATCHMENT						
Puuriri	Vitex lucens	✓	✓	✓	WF7	Manu, Rongoaa, Toi
Poohutukawa	Metrosideros excelsa		✓	✓	WF4	Manu, Rongoaa, Toi
Kohekohe	Didymocheton spectabilis			✓	WF4, WF7, WF9	Manu, Rongoaa
Rewarewa	Knightia excelsa	✓	✓	✓	WF4, WF7, WF9	Manu, Toi, Kai, prefers well drained dry soil
Tiitoki	Alectryon excelsus subsp. excelsus			✓	WF4, WF7	Manu, Rongoaa
Karaka	Corynocarpus laevigatus	✓	✓	✓	WF4, WF7, WF9	Manu, Rongoaa

Te Wai oo Te Puhinui / Waters of Te Puhinui

WETLAND

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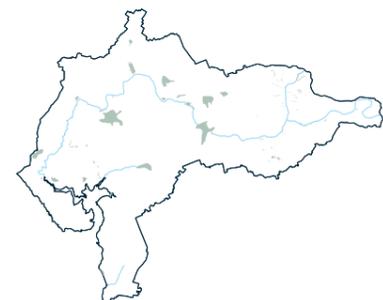
Wetlands are permanently or intermittently wet areas that support a natural ecosystem of plants and animals adapted to wet conditions. Wetlands provide amenity and ecological value through diverse, self selecting and resilient species which are tolerant of drought and inundation, as well as promoting shade and providing habitat for wildlife.

Both constructed and/or restored wetlands provide a very important role in the catchment by providing water quality treatment at the plant-soil-water interface, and by attenuating peak flows.

Wetland planting density should be spaced to accommodate adequate root volume and coverage to suppress weed growth. The planting should also provide clear zones and unobstructed sight lines and view shafts, enhancing public safety.

Deep Pool 0.5 - 1.5m Deep

This zone includes plants that grow underwater but require light. They are important for the ponds health and assistance in improving water quality and clarity through the reduction of sediment movement through the water. They provide oxygenation and habitat for fish and insects as well as food for birds.



MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
DEEP POOL - 0.5 - 1.5M DEEP					
	Myriophyllum propinquum		✓		
Maanihi	Potamogeton cheesemaniae		✓		
Kooungaawhaa	Schoenoplectus tabernaemontani		✓		
	Machaerina articulata		✓		Requires depth of water. Toi
Kuta	Eleocharis sphacelata		✓		Requires depth of water. Toi
DEEP MARSH - 0 - 0.5m DEEP					
	Machaerina articulata		✓		Requires depth of water. Toi
	Machaerina tenax		✓		
Kukuraho	Bolboschoenus fluviatilis		✓		Suitable for wetlands in coastal areas
Kuta	Eleocharis acuta		✓		Requires depth of water. Toi
Kooungaawhaa	Schoenoplectus tabernaemontani		✓		
	Isolepis prolifera		✓		
Wiiwi	Juncus edgariae		✓		

Te Wai oo Te Puhinui / Waters of Te Puhinui

DRAFT

WETLAND

Deep Marsh 0.0 - 0.5m Deep

The roots of emergent plants are submerged but foliage is partially above water. Emergent wetland vegetation provides forage and refuge above and below the water line through the diverse microbial assemblages of the aerobic root zone environment as well as anaerobic sediment environments. These environments nutrient levels and water chemistry are determined by the water as opposed to the soil. The vegetation shall be planted in bands perpendicular to the flow ranging in heights from 1m to 0.2m below the water level in two zones; Deep Marsh Zone 0.5 - 1m Deep, Shallow Marsh Zone 0.2 - 0.5m Deep.

Shallow Marsh/Margin 0.2m Deep - 0.2m Above Water Level

The littoral zone is a nutrient rich, shallow, body of water, located next to the wetland or pond edge where sunlight can still reach rooted plants. This zone usually remains submerged in standing water but at times may dry out near the bankside edge. The vegetation at the wetted edge protects batter slopes from erosion caused by flooding and wet/dry cycles. It also intercepts gross sediments from entering the wetland via overland flow as well as remediating nitrogen and metals via influent groundwater.

Riparian Zone 0.2m Above Water Level

The terrestrial zone includes areas that are expected to be inundated during flood events and therefore comprise a wide variety of floodplain and escarpment vegetation.

The terrestrial zones act as an additional physical buffer from climatic extremes as well as reducing the overland flow rate while still having the ability to maneuver and bend with the direction of water flow. Taller trees further up the escarpment provide shade for open water, shelter, food and habitat for roosting birds as well as prevention of erosion through root stabilisation.

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
SHALLOW MARSH/MARGIN - 0.2m DEEP - 0.2m ABOVE WATER LEVEL					
Puurei	Carex Secta	✓	✓		Within wetlands, not along banks
Puukio	Carex virgata	✓	✓		
Rautahi	Carex lessoniana/germinata	✓			Plant low number spreads easily
	Carex dissita	✓			
Hukihuki	Coprosma tenuicaulis	✓			
	Juncus gregiflorus/edgariae	✓			
	Juncus articulatus	✓			
Upokotangata	Cyperus ustulatus	✓			Toi
	Baumea rubiginosa		✓		
Harakeke	Phormium tenax	✓			Rongoaa, Toi, Manu, Mokomoko, Kai, prefers full sun at all times
Kiokio	Blechnum novae-zelandiae		✓		Requires damp soils
Oioi	Apodasmia similis	✓			Coastal wetland location
RIPARIAN ZONE - 0.2m ABOVE WATER LEVEL					
Kaaramuramu	Coprosma robusta	✓			Rongoaa, Manu, Puurerehua
Harakeke	Phormium tenax	✓			Rongoaa, Toi, Manu, Mokomoko, Kai, prefers full sun at all times
Tii koouka	Cordyline australis	✓	✓		Rongoaa, Toi, Puurerehua
Putputaweetaa	Carpodetus serratus		✓		Manu, Pepe tuna
Maanuka	Leptospermum scoparium	✓			Manu, Rongoaa, Toi
Patete	Schefflera digitata		✓		Rongoaa, requires shade
Maahoe	Melicytus ramiflorus	✓	✓		Manu, Ahi, plant small numbers sparsely
Toetoe	Austroderia fulvida	✓			
Kiokio	Blechnum novae-zelandiae		✓		
Paakauroharoha	Pneumatopteris pennigera			✓	Puurerehua
Pukatea	Laurelia novae-zelandiae			✓	Rongoaa, Manu, requires damp to saturated soil
Kahikatea	Dacrycarpus dacrydioides			✓	Manu, Rongoaa, Ahi
Maire tawake	Syzygium maire			✓	Nationally vulnerable species
Tuurepo	Streblus heterophyllus		✓	✓	Requires shade to establish well
Makomako	Aristotelia serrata	✓	✓		Manu, Rongoaa, Toi, Kai

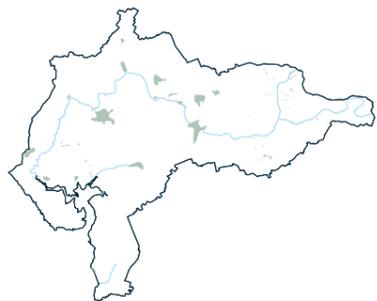
Te Wai oo Te Puhinui / Waters of Te Puhinui

RAIN GARDENS AND URBAN SWALES

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Rain gardens and urban swales are engineered gardens designed to harness the natural ability of vegetation and soils to treat stormwater. An urban swale is a constructed drainage course suitable for constrained environments with vegetation and riprap incorporated. They help absorb high volumes of stormwater, reducing the effects of stormwater volumes, peak flow, treatment of pollutants/contaminants while recharging freshwater bodies and adding amenity to the urban environment. Rain gardens retain stormwater within the specified medium where selected plant species absorb and filter contaminants before being released into groundwater, stormwater discharge pipes, streams, and eventually into the sea.

MAAORI NAME	BOTANICAL NAME	NURSERY SPECIES	SUCCESSIONAL SPECIES	ENRICHMENT SPECIES	NOTES
LOW - MEDIUM PLANTING					
Puukio	Carex virgata	✓	✓		
Rautahi	Carex germinata	✓			
Oioi	Apodasmia similis	✓	✓		
Tuurutu	Dianella nigra	✓			Toi, Habitat for Mokokoko
Wharariki	Phormium cookianum	✓			Manu
Miikoikoi	Libertia grandiflora	✓			
Paanakenake	Pratia angulata		✓		Rongoaa
Wiwi	Ficinia nodosa	✓	✓		
TREE SPECIES					
Karaka	Corynocarpus laevigatus	✓	✓	✓	Manu, Rongoaa
Niikau	Rhopalostylis sapida				Manu, Toi
Koowhai	Sophora microphylla	✓	✓	✓	Rongoaa, Manu
Kohekohe	Didymocheton spectabilis				Manu, Rongoaa
Puuriri	Vitex lucens	✓	✓	✓	Manu, Rongoaa, Toi
Tarairi	Beilschmiedia tarairi			✓	Manu, Rongoaa, Ahi, Toi
Tii koouka	Cordyline australis	✓	✓		Rongoaa, Toi, Purerehua
Tiitoki	Alectryon excelsus subsp. excelsus			✓	Manu, Rongoaa (requires trunk guard)
Putaputaweetaa	Carpodetus serratus		✓		Manu, Pepe tuna, prefers saturated soils, (mid size tree)



Te Wai oo Te Puhinui / Waters of Te Puhinui

EARTH ROOFS

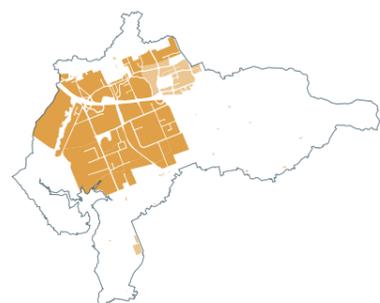
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An earth or living roof is made up of layers of soil and vegetation built up on top of an engineered roof surface. Living roofs provide a multitude of benefits for urban environments including reduction of peak flow rates and run-off volumes, improved micro climate, habitat for wildlife and amenity values as well as providing building insulation and localised cooling.

There are two primary types of earth roof - extensive and intensive. Extensive systems involve a thin layer of planting medium and free draining substrate with drought-resistant plant species. Extensive systems can be retrofitted onto some existing flat or sloping structures. Intensive roofs have deep substrate and are capable of supporting a wide range of activities and plant types including trees and shrubs. Intensive systems are substantially heavier than extensive earth roofs and require greater structural support. Continuous irrigation and higher levels of maintenance are also required.

The Earth roof plant list has been selected for extensive earth roofs, favouring low growing, drought resistant species that require low levels of maintenance.

MAAORI NAME	BOTANICAL NAME
SOIL PROFILE 100 - 300 MM	
Oioi	Apodasmia similis
Wharawhara	Astelia banksii
	Austrostipa stipoides
Nihinihi, panahi, rauparaha	Calystegia soldanella
	Carex pumila
Taatarakeke	Carex testacea
	Coprosma acerosa
Horokaka	Disphyma australe
	Dichondra brevifolia
Wivi	Ficinia nodosa
	Libertia peregrinans
Pohuehue	Muehlenbeckia complexa
Pohuehue	Muehlenbeckia axillaris
Pinatoro	Pimelia prostrata
Remuremu	Selliera radicans
Toroheke	Pimelea arenaria



Productive gardens

DECIDUOUS FOREST GARDENS

Puhinui’s natural capital and land use patterns mean that opportunities for productive gardens in Puhinui should be focused on intensive, small-scale productive gardens and orchards for fresh fruit and vegetables and some livestock. Small scale intensive systems require more energy input per area of land than extensive systems and typically have higher yields. Three intensive food production systems suitable for Te Puhinui include intensive gardens, orchards, perennial crops and forest gardens.

A deciduous forest garden is characterised by deciduous trees and stone fruit species such as apples, plums and pears, with a shrub layer of seasonal berries and dense herbaceous ground cover of perennial and annual species. Deciduous forest gardens are best suited to well drained soils and with good air circulation to reduce the likelihood of mold and fungal infection caused by still humid air.

Because deciduous plants drop their leaves annually, a deciduous forest garden builds a continual layer of leaf mulch and humus which adds to the soil fertility over time.



MAAORI NAME	BOTANICAL NAME
CANOPY	
Plant varieties, to be selected for pollination requirements, root stocks, soil type, height consideration, compatibility.	
Piki	Ficus carica
Aaporo	Malus domestica
Paramu	Prunus domestica spp.
Piititi	Prunus persica
Pea	Pyrus communis
Haanati	Corylus avellana
SHRUB	
Raahi pere	Rubus idaeus
Karani	Ribes spp
Patatini kikorangi	Vaccinium spp
	Aloysia triphylla
GROUNDCOVER	
Select a seasonal coverage of perennial herbs to encourage beneficial insects and increase soil nutrient content.	
Paanakenake	Pratia angulata
	Dichondra repens
Taataraoa	Rubus pentalobus
Totara	Fuchsia procumbens
Mokimoki	Mentha spp.
	Symphytum officinale
	Trifolium incarnatum
	Borago officinalis
	Achillea millefolium
	Trifolium hybridum
Hiioi	Mentha cunninghamii

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Productive gardens

SUBTROPICAL FOREST GARDENS

A subtropical forest garden is characterised by dense, multi layered foliage with closed canopy cover. Canopy trees can include avocado, bananas, macadamia, cherimoya, and tamarillo, with a shrub and groundcover layers of lush leafy and/or edible plants including guava and taro as well as climbers such as passionfruit. Subtropical forest gardens require sheltered, frost free, warm and humid sites and well drained soils with the exception of bananas and taro which prefer 'wet feet'.

MAAORI NAME	BOTANICAL NAME
CANOPY	
Panana	Musa spp
Huakerepe	Citrus paradisi
Toomato raakau	Solanum betaceum
	Annona cherimola
Rahopuuru	Persea americana
	Macadamia tetraphylla
SHRUB	
	Feijoa sellowiana (syn. Acca sellowiana)
Manarini	Citrus reticulata
	Heliconia psittacorum
GROUNDCOVER	
	Cucumis melo reticulatus
	Cucumis melo inodorus
	Rheum rhabarbarum
	Colocasia spp
	Passiflora edulis



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Productive gardens

MEDITERRANEAN FOREST GARDENS

A Mediterranean forest garden is characterised by dry climate trees such as olives, citrus, feijoa and figs with a shrub and ground cover layer of hardy woody perennials including rosemary, oregano, thyme and lavender as well as climbers such as grape. Mediterranean forest gardens are best suited to hot sites with well drained soils but always moist soil conditions.

Because Mediterranean species are tolerant of drought, they are well suited to drier sites than deciduous and subtropical forest gardens.



MAAORI NAME	BOTANICAL NAME
CANOPY	
Kotakota	Citrus aurantifolia
Reemana	Citrus limon
Manarini	Citrus reticulata
Karaka	Citrus sinensis
Piki	Ficus carica
Ooriwa	Olea europaea
SHRUB	
	Psidium cattleianum
	Rosmarinus officinalis
	Feijoa sellowiana (syn. Acca sellowiana)
	Laurus nobilis
	Vitis vinifera spp
	Punica granatum (dwarf)
GROUNDCOVERS	
Taaima	Thymus vulgaris
	Origanum spp.
	Rosmarinus officinalis 'Prostratus'
Taramea	Artemisia dracunculus
	Lavandula spp.
Ruaanuku	Salvia spp.
Piripiri	Acaena dumicola
	Stachys byzantina

Note: In selecting exotic fruit trees check if there will be any neighbouring ecological impacts, avoid near bush blocks.

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Productive gardens

MEDICINAL PLANTS

The medicinal plants listed have been chosen for their size and ability to be grown within a household environment. These are suited to most climatic conditions of the area and can be used as a suite of first aid/rongoaa species for home use.

MAAORI NAME	BOTANICAL NAME	NOTES
Karaka	<i>Corynocarpus laevigatus</i>	Leaves
Koowhai	<i>Sophora microphylla</i>	Plant trees in clusters or groupings. Use bark (older than 60 years old)
Tiitoki	<i>Alectryon excelsus</i> subsp. <i>excelsus</i>	Use of fruit for oil
Maanuka	<i>Leptospermum scoparium</i>	Use of flowers and oil
Patete	<i>Schefflera digitata</i>	Requires shade
Kaaramuramu	<i>Coprosma robusta</i>	Use of leaves and fruit
Houhere	<i>Hoheria populnea</i>	Use of leaves
Kawakawa	<i>Piper excelsum</i>	Requires semi shade. Use of leaves and fruit
Kuumarahou	<i>Pomaderris kumeraho</i>	Requires dry poor soils and semi shade. Use of flowers and leaf. Upper catchment to lower catchment location
Harakeke	<i>Phormium tenax</i>	Requires full sun at all times. Use of root and sap.
Piripiri	<i>Acaena anserinifolia</i>	Requires damp soils. Use of leaves
Koromiko	<i>Veronica stricta</i> var. <i>stricta</i>	Requires full sun at all times. Use of leaf and tip of new shoots
Puawaananga	<i>Clematis paniculata</i>	Climbers, Upper catchment to coast
Kaihua	<i>Parsonia heterophylla</i>	Climbers, Mid catchment
Kohia	<i>Passiflora tetrandra</i>	Climbers, Mid catchment to lower catchment
Tataramoa	<i>Rubus cissoides</i>	Leaves and fruit, Mid catchment to lower catchment
Kareao	<i>Ripogonum scandens</i>	Swollen root , Mid catchment to lower catchment
Kootukutuku	<i>Fuchsia excorticata</i>	Mid catchment sheltered gully
Pukatea	<i>Laurelia novae-zelandiae</i>	Leaves, Upper catchment to lower catchment, Wetlands
Kiekie	<i>Freycinetia banksii</i>	Tawhara - Damp semi shade not stand alone. Upper catchment to lower catchment



Glossary

Awa – River, stream, creek

Aatua/Atua – primal, primordial ancestors/ ancestor

Kainga – home, housing, settlement or village

Kaitiaki – tribal custodians and guardians, who can take a number of forms, spiritual (such as tribal taniwha), or physical (such as people who have been mandated to undertake specific roles or flora or fauna)

Kaitiakitanga – the practice of tribal custodial care and guardianship of whakapapa, taonga, knowledge, waterways, land and ecosystems

Kaumaatua/Kaumatua – elders/ elder, older people/person

Kaupapa – purpose, programme, theme

Te Waiohua – indigenous people/ tribes with customary territorial rights and authority, jurisdiction over land derived through the occupation of ancestral lands and the knowledge, traditions, practices and historical, physical and spiritual relationships sustained over many generations

Manaakitanga – hospitality, generosity and care. The process of according value and respect to people, place and nature

Mai i ngaa maunga ki te moana - mai te maataapuna ki te Maanuka ‘from the mountains to the sea – from the headwaters to the Manukau Harbour

Mana – prestige, authority, influence, status

Marae – the open area in front of a meeting house, Maaori or Te Waiohua community complex of cultural facilities

Maatauranga Maaori – Maaori knowledge systems, knowing and understanding of the world, nature and the universe and applied practice

Maataawaka – Maaori kinships groups, Maaori communities

Mauri – life essence, life force

Moko/ Mokopuna – grandchild, grandchildren, descendants

Ngaa Taiao – nature, natural Environment

Papa-Tuu-Aa-Nuku – Mother Earth

Rangatahi – youth, young people/ person

Ranginui – Father Sky

Tamariki – children

Tangata – people/ person

Tangata Pasifika – people of Oceania and Pacific Island nations

Tangata whenua – people of the land, autochthonous, indigenous or first nation people

Tapu – sacred, prohibited, restricted

Taurahere – urban kinship group, tribal groups that retain their identity and links back to their tribal homelands

Te reo – voice, language, dialect

Tiaki – look after, care, protect, conserve, save

Tikanga – customary system of values and practices that have evolved over generations and are anchored within the ecological, social and cultural context of Te Waiohua and Maaori communities

Tuupuna/Tupuna – ancestors, grandparents/ ancestor, grandparent

Waahi – area, Location, place

Waahi Tapu - places sacred to Maaori in the traditional, spiritual, religious, ritual or cosmological sense

Wai – water, stream, creek, river

Whakapapa – intergenerational symbiotic relationships between people, places and nature

Whaanau – family

Whenua – land, domain, territory, placenta and afterbirth

Accessibility - The ability to be reached or entered without obstacle

Biodiversity - refers to all the variety of life that can be found on Earth (plants, animals, fungi and micro-organisms) as well as to the communities that they form and the habitats in which they live.

Business sustainability - an enterprise that has minimal negative impact or potentially a positive effect on the global or local environment, community, society, or economy

Catchment - where rainwater is collected by the natural landscape

Charter - A written constitution or description of an organisation or group's functions and/or rights

Circulation - The free movement around something

Collective understanding - a shared comprehension or perspective of something

Corporate responsibility - The inclusion of ethical elements such as public interest and environmental concerns into the planning of a business strategy

Cultural identity - the identity of belonging to a group, related to nationality, ethnicity, religion, social class, generation or locality

Dechannelisation - removal of channelling structures and return waterway to its original meandering course

Drainage patterns - is the pattern formed by

the streams, rivers, and lakes in a particular drainage basin

Empowered - Making someone or something stronger and more confident

Endemic ecosystems - a biological community of interacting organisms that are native to where they are found

Enhancement - An increase or improvement in quality, value, or extent

Enrichment - The action of improving or enhancing the quality or value of something

Erosion - The gradual process of destruction by wind, water, or other natural agents

Fish passage - A series of artificial pools arranged like ascending steps, enabling migrating fish to swim upstream around a dam or other obstruction

Flow regime - the description of the natural flow patterns of a stream or river

Food-shed - the land area that produces food for a particular population

Function - the practical use, action or purpose of something

Ground water recharge - is where water moves through the soil down to the water table (aquifers) either naturally through rain or by injecting water into the water table from wells

Habitats - The natural home or environment of an animal, plant, or other organism

Initiatives - An act or strategy intended to

resolve a difficulty or improve a situation

Integrated - various parts or aspects of a system, institution or body that are linked or coordinated

Interface - A point where two systems or places meet and interact

Intermittent - Occurring at irregular intervals

Material - The matter that something is created of or can also be gathered information or ideas

Obligations - The condition of being morally or legally bound to do something

Outcomes - are events, occurrences, or changes in conditions, behaviours, or attitudes that indicate progress toward a goal. They are generally specific, measurable and meaningful

Partnerships - An association of two or more people working together

Project - An individual or collaborative enterprise carefully planned to achieve a particular aim

Purpose - The reason for which something is done or created

Regeneration - the action or process of growth and renewal after loss or damage

Reinvigorate - Give new energy or strength to

Remediate - Restore by reversing or stopping environmental damage

Renewal - The replacement or repair of something

Resilient - able to withstand or recover quickly from difficult conditions

Revegetation - new growth of vegetation on disturbed or barren ground

Riparian - Relating to or situated on the banks of a river

Riparian vegetation - are the plants, shrubs and trees that grow along the banks of a waterway extending to the edge of the floodplain.

Socioeconomic - Relating to or concerned with the interaction of social and economic factors

Source document - an original written record containing key data and information

Stabilisation - The process of making something physically more secure or stable

Strategy - A plan of action designed to achieve a long-term or overall aim

Tributaries - A collection of rivers or streams flowing into a larger river or lake

Vision - The ability to think about or plan the future with imagination or wisdom

Wild harvest - A product that has been collected by hand from a native ecosystem and is typically natural and organic