



If calling, please ask for Democratic Services

Te Awa Kairangi/Hutt River Valley Subcommittee

Tuesday 12 March 2024, 2:00pm

Council Chamber, Hutt City Council, 30 Laings Road, Lower Hutt

Quorum: *Two Regional Councillors, one Hutt City Council member and One Upper Hutt City Council member*

Members

Ros Connelly, Councillor (Chair)	Greater Wellington Regional Council
Quentin Duthie, Councillor (Deputy Chair)	Greater Wellington Regional Council
Simon Edwards, Councillor	Hutt City Council
Wayne Guppy, Mayor	Upper Hutt City Council
Bill Hammond, Councillor	Upper Hutt City Council
Ken Laban, Councillor	Greater Wellington Regional Council
David Lee, Councillor	Greater Wellington Regional Council
Tui Lewis, Deputy Mayor	Hutt City Council
Caleb Ware	Te Rūnanga o Toa Rangatira Inc
Benjamin Wynyard-Terry	Port Nicholson Settlement Block Trust

Recommendations in reports are not to be construed as Council policy until adopted by Council

Te Awa Kairangi / Hutt River Valley Subcommittee (A subcommittee of the Environment Committee)

1 Purposes

- 1.1 Oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi / Hutt River floodplain
- 1.2 Consider potential arrangements for a catchment-based governance approach for the Hutt Valley, and recommend to Council (as appropriate).

2 Specific responsibilities

- 2.1 Oversee the development and review of FMPs for the Te Awa Kairangi / Hutt River floodplain, for consideration of those FMPs by the Environment Committee.
- 2.2 Oversee the public involvement process during development or review of FMPs for the Te Awa Kairangi / Hutt River floodplain.
- 2.3 Review and monitor periodically the effectiveness of implementation and delivery of:
 - a Riverlink
 - b FMPs for the Te Awa Kairangi / Hutt River floodplain.

3 Members

- 3.1 Four Councillors.
- 3.2 Six members, appointed by Council, as follows:
 - a Two elected members of Hutt City Council, nominated by that council
 - b Two elected members of Upper Hutt City Council, nominated by that council
 - c Two members, appointed for each person's skills, attributes, or knowledge that will assist the work of the Subcommittee, being:
 - i One member, nominated by the Port Nicholson Block Settlement Trust
 - ii One member, nominated by the Toa Rangatira Trust.
- 3.3 Such other members, appointed by the Environment Committee (on the Subcommittee's nomination) for each person's skills, attributes, or knowledge that will assist the work of the Subcommittee.

4 Chair

Council appoints the Chair from the four Councillor members.

5 Quorum

Two Councillors, one Hutt City Council member, and one Upper Hutt City Council member.

6 Voting entitlement

- 6.1 All members have equal speaking and voting rights.
- 6.2 The Chair has a deliberative vote; and, in the case of an equality of votes, has a casting vote.

7 Servicing and Standing Orders

- 7.1 The Subcommittee is serviced by Greater Wellington.
- 7.2 Council's Standing Orders apply to the Subcommittee, with no provision for alternate members.

8 Remuneration and expenses

- 8.1 Elected members' remuneration and expenses are met by the council they represent.
- 8.2 Non-elected members (who are not otherwise remunerated) may claim Greater Wellington's standard daily meeting attendance allowances and expenses.

9 Meeting frequency and dissolution

- 9.1 The Subcommittee meets as required.
- 9.2 The Subcommittee may recommend its dissolution to the Environment Committee.

Te Awa Kairangi / Hutt River Valley Subcommittee

Tuesday 12 March 2024, 2.00pm

Council Chamber, Hutt City Council, 30 Laings Road, Lower Hutt

Public Business

No.	Item	Report	Page
1.	Apologies		
2.	Conflict of interest declarations		
3.	Public participation		
4.	Confirmation of the Public Minutes of the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on Thursday 9 November 2023	23.582	5
5.	Watercourses Agreement Whaitua and Waiwhetū Stream history	24.89	8
6.	Waiwhetū Flood Hazard Modelling	24.88	364
7.	Te Awa Kairangi / Hutt River and Valley Flood Risk Management Report	24.24	391
8.	RiverLink Project update report	24.75	396



Please note these minutes remain unconfirmed until the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on 12 March 2024.

Report 23.582

[Public minutes of the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on Thursday 9 November 2023](#)

Taumata Kōrero – Council Chamber, Greater Wellington Regional Council
100 Cuba Street, Te Aro, Wellington, at 4.30pm.

Members Present

Councillor Connelly (Chair)	Greater Wellington Regional Council
Councillor Duthie (Deputy Chair)	Greater Wellington Regional Council
Councillor Edwards	Hutt City Council
Councillor Hammond	Upper Hutt City Council
Councillor Laban	Greater Wellington Regional Council
Deputy Mayor Lewis (from 4.36pm)	Hutt City Council

Councillor Laban and Deputy Mayor Lewis participated at this meeting remotely via MS Teams and counted for the purpose of quorum in accordance with clause 25B of Schedule 7 to the Local Government Act 2002.

Karakia timatanga

The Committee Chair opened the meeting with a karakia timatanga.

Public Business

1 Apologies

Moved: Cr Hammond / Cr Duthie

That the Subcommittee accepts the apologies for absence from Mayor Guppy, Councillor Lee, and Caleb Ware.

The motion was **carried**.

2 Declarations of conflicts of interest

There were no declarations of conflicts of interest.

3 Public participation

There was no public participation.

4 Confirmation of the Public minutes of the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on 22 August 2023 – Report 23.409

Moved: Cr Connelly / Cr Hammond

That the Subcommittee confirms the Public minutes of the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on 22 August 2023 – Report 23.409.

The motion was **carried**.

5 RiverLink Project Update Report – Report 23.519 [For Information]

Wayne O'Donnell, Project Manager, RiverLink, Tracy Berghan, Manager, RiverLink, Rod James, RiverLink Programme Director, spoke to the report.

Noted: The Subcommittee noted that Paragraph 16 of the report did not refer to the Public Transport Mitigation Plan being prepared in preparation for the closure of the Melling Line.

Noted: The Subcommittee requested that it be kept informed on the variations to the design plan, including any trade-offs being considered.

Deputy Mayor Tui Lewis joined the meeting at 4.36pm, during the above item.

6 Annual Asset Management Condition Report for Te Awa Kairangi/Hutt Floodplain 2022/23 – Report 23.384

Lucy Ashford, Team Leader, Flood Operations Planning, and Jacky Cox, Manager, Logistics and Resourcing, spoke to the report.

Moved: Cr Edwards / Cr Hammond

That the Subcommittee:

- 1 Recommends to the Environment Committee that it is satisfied that Flood protection and erosion control infrastructure assets have been managed satisfactorily to the agreed Level of Service (LoS) in the 2022/23 financial year.
- 2 Notes that there has been a decline in the condition of the less critical flood management assets and this will likely to continue without further investment.
- 3 Notes that identified issues are being addressed through maintenance and improvement work programmes.
- 4 Notes that current budgets are insufficient to ensure that assets are maintained to agreed levels of service in the long term.

The motion was **carried**.

The meeting adjourned at 5.36pm and resumed at 5.47pm.

7 Te Awa Kairangi/Hutt River and Pinehaven Stream Annual Floodplain Management Implementation Report – Report 23.385 [For Information]

Sharyn Westlake, Principal Engineer Construction RiverLink, spoke to the report.

Noted: The Subcommittee requested future reports include:

- a Information on Stokes Valley and Waiwhetu streams
- b Implementation of Whaitua Te Whanganui-a-Tara recommendations, and Te Mana o Te Wai

8 Te Awa Kairangi/Hutt Valley Flood Risk Management Report – Report 23.495 [For Information]

Sharyn Westlake, Principal Engineer Construction RiverLink, spoke to the report.

Noted: The Subcommittee requested that future reports include an update on the Pinehaven Stream works.

9 Fly Tipping on Te Awa Kairangi Update – Report 23.459 [For Information]

Myfanwy Hill, Manager, Environment Operations and Joby Mills, Senior River Ranger, spoke to the report.

10 River Trail as a Transport Corridor – Report 23.460 [For Information]

Myfanwy Hill, Manager, Environment Operations, spoke to the report.

Noted: The Subcommittee requested a review of the environmental strategy for Te Awa Kairangi / Hutt River corridor.

11 Whaitua Te Whanganui-a-Tara Reference Group Establishment – Report 23.580 [For Information]

Nicola Patrick, Director, Catchment, spoke to the report.

Karakia whakamutunga

The Committee Chair closed the meeting with a karakia whakamutunga.

The public meeting closed at 6.30pm.

Councillor R Connelly

Chair

Date:

Te Awa Kairangi / Hutt River Valley Subcommittee
12 March 2024
Report 24.89



For Information

[WATERCOURSES AGREEMENT WHAITUA AND WAIWHETŪ STREAM HISTORY](#)

Te take mō te pūrongo

Purpose

1. This report and the attached presentation have been prepared to provide an overview of the Watercourses agreement across the region and how that specifically applies to Te Awa Kairangi and the Waiwhetū Stream. The report will also cover some more general matters related to the Waiwhetū catchment.

Te horopaki

Context

2. Information is primarily contained within the presentation in **Attachment 1**. The information is characterised into four sections:
 - a The first section is in relation to the law under which Greater Wellington undertakes its activities. This has influenced how we manage which water courses and why.
 - b The second section relates to Te Awa Kairangi more generally and some of the influences on how the land is used today.
 - c The third section relates to the Waiwhetū Stream specifically and the activities that have been undertaken in recent years.
 - d The fourth section refers to the relevant outputs from the Whaitua process in respect to the Waiwhetū Catchment.
3. In addition to this it is intended to have public participation in the meeting from the Friends of the Waiwhetū Stream about the work they are doing.

Te tātaritanga Analysis

4. The detailed background to the extent and levels of flood protection service for the rivers and streams maintained in the Hutt Valley is difficult to define. The Hutt River Scheme has come from an amalgamation of the numerous river boards that have existed since the first “scheme” was put in place in the 1890’s. Extensions to the scheme and improvements to levels of service have occurred over the years, with the most recent extension occurring as part of a Government initiative in the 1980s with the development of River Road. The upstream extent is now the confluence of the Hutt and Akatarawa Rivers, which was the upper extent of the urban development at the time. Following that extension, a comprehensive review of the scheme was undertaken and resulted in the development of the Hutt River Floodplain Management Plan 2001. This document guides our approach to management of the flood risk from Te Awa Kairangi.
5. Numerous tributaries have been included in Greater Wellington’s maintenance work under a number of different agreements over the last 130 years. These original agreements were confirmed in 1977 as part of the Watercourses agreement. This agreement was developed following the devastating flood in December 1976 when a localised storm event caused flooding of many of the tributaries to the Hutt River. Debris blockages at many culverts and bridges caused extensive flooding, and an agreement was necessary to deal with the common law requirement for a landowner to maintain a river or stream clear of blockages so as to allow “water to pass from a superior to an inferior” property. This was considered extremely difficult for individual landowners to undertake in an urban environment so Greater Wellington, using powers in the Soil Conservation and Rivers Control Act 1941, took on the responsibility for specific reaches. The various boroughs in the valley were rated for the local share of this work and Greater Wellington funded the balance (about 60%). At the time the Greater Wellington share was then able to be claimed back from Government subsidies that existed at the time. These subsidies no longer exist and Greater Wellington has now funded the 60% of the work through general and targeted rates. The Territorial Authorities (TAs) are currently invoiced for their local share.
6. The specific reaches of rivers and streams that we maintain in the western part of the region are shown in the following link: <https://www.gw.govt.nz/your-region/emergency-and-hazard-management/flood-protection/our-work/rivers-and-schemes/other-rivers-and-streams/>.
7. More general influences on the management of the Hutt River and the associated floodplain are many and varied. Of note related to this presentation are geological influences, and particularly earthquakes, the subdivision and sale of land, and physical works to straighten the river and protect the floodplain from flooding.
8. The Waiwhetū Stream appears to have been an old meander of the Hutt River. Over many years it has become disconnected from the main flow, through earthquake movement over the last 1000 years and, more recently, through works confining the river to its main course. The presentation shows some of the major activities in the stream over the last 100 years and a summary of the current situation.

Whaitua te Whanganui-a-Tara

9. Between 2019-2021, Greater Wellington convened the Whaitua Te Whanganui-a-Tara process to support giving effect to the National Policy Statement for Freshwater Management 2020 (NPSFM). Two documents were produced which both emphasise the importance of the Waiwhetū Catchment.
 - a Te Mahere Wai o Te Kāhui Taiao (Te Mahere Wai) (**Attachment 2**)
 - b Te Whaitua te Whanganui-a-Tara Implementation Programme (WIP) (**Attachment 3**)
10. From **Te Mahere Wai**:
 - a While the lower reach of the Waiwhetū Stream is heavily channelised and polluted, the mid-range of the awa still retains āhua (natural character) and the awa remains an icon for mana whenua.
 - b Although there has been considerable investment in its restoration by the local community, and councils have spent tens of millions of dollars in recent years to improve water quality, there is still work to be done before it is safe to eat eels or watercress.
 - c The stream is identified as Ngā Taonga Nui a Kiwa (the treasured inheritance of Kiwa refers to those waterbodies of most importance to mana whenua identified in Schedule B of the Natural Resources Plan (NRP) for Ngāti Toa Rangatira and Taranaki Whānui. It has sustained iwi over many centuries, with Waiwhetū Pā and Ōwhiti Pā being two important pā on the awa.
 - d Te Awa Kairangi ngā ngutu awa (the river mouth), the Waiwhetū Stream and the Waiwhetū Estuary were regarded as important sources of mahinga kai and freshwater for mana whenua. The river mouth is recognised as a significant natural wetland and is characterised by significant indigenous biodiversity value, providing habitat for threatened native fish and birds.
11. Mana whenua have assessed the Waiwhetū Stream as wai kino (dangerous/polluted) due to the presence of human waste (*E. coli*), which poses a health risk and means that contact with the water should be avoided.
12. Wāhi tapu sites are at Waiwhetū Pā (Ōwhiti), and Te Ngohengohe and Pūhara-keke-tapu are significant places of battle along the Waiwhetū Stream.
13. The WIP emphasised the importance of the Waiwhetū aquifer and the risk of saltwater intrusion as a result of sea-level rise. The WIP recommended Greater Wellington develop a monitoring network for aquifer ecosystem health to better understand:
 - a The hydrogeology of aquifers (such as groundwater sources and flow paths, and water availability)
 - b Indicators of aquifer ecosystem health, such as stygofauna
 - c Stressors on aquifer ecosystem health, such as contamination from *E. coli* and land uses
 - d Risks to the sources of human drinking water.

14. Recommendations for water quality targets for the Waiwhetū Stream from the WIP and Te Mahere Wai have been incorporated into Proposed Change 1 to the Natural Resources Plan for the Wellington Region (Proposed Change 1) notified in October 2023.
15. Proposed Change 1 requires that Freshwater Action Plans be developed for the Waiwhetū Stream for Macroinvertebrates, Deposited fine sediment, Dissolved oxygen, Dissolved reactive phosphorus, Dissolved copper, and Dissolved zinc.

Ngā hua ahumoni
Financial implications

16. There are no financial implications related to the report.

Ngā Take e hāngai ana te iwi Māori
Implications for Māori

17. Some of the implications for Māori have been noted in the Whaitua section 10 above. Staff will continue to engage with iwi directly in relation to matters related to the Waiwhetū Stream.

Ngā tūāoma e whai ake nei
Next steps

18. The background information in this report has been used in the development of specific work programmes. No further actions are required.

Ngā āpitihanga
Attachments

Number	Title
1	The Water Courses Agreement and the Waiwhetū Stream
2	Te Mahere Wai o Te Kāhui Taiao
3	Te Whaitua te Whanganui-a-Tara Implementation Programme

Ngā kaiwaitohu
Signatories

Writers	Graeme Campbell – Principal Advisor Flood and Resilience Tim Sharp – Catchment Manager Te Whanganui-a-Tara
Approvers	Jack Mace – Director Delivery, Environment Group Lian Butcher – Kaiwhakahaere Matua, Taiao Group Manager, Environment

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or with Committee's terms of reference</i> This report fits with the Environment Committees wider consideration of watercourses management
<i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> Information report only. No consideration to the annual plan required.
<i>Internal consultation</i> All of Environment Group and Te Hunga Whiriwhiri have been engaged in the preparation of this report
<i>Risks and impacts - legal / health and safety etc.</i> None. Information report only

The Water Courses Agreement and the Waiwhetū Stream

Update for Te Awa Kairangi /Hutt River Valley Sub Committee 12 March 2024

Te Awa Kairangi

TE AWA KAIRANGI

Kei runga i ngā kōtihi moununga
Ko ngā puna wai mātao
E rere kau ana mai
Ki te awa kai i te rangi
Ka maringi mai ngā mahara kei roto i aku kamo
Ngā puna wai wera e!

"Atop the lofty mountains
The fresh, crisp, bubbling waters flow
To the river that feasts on the heavens
And as I reminisce my flowing tears remember!"

Peterson Pei

Water Courses Agreement

Purpose

This presentation aims to provide an overview of the Water Courses agreement across the region and how that specifically applies to Te Awa Kairangi and the Waiwhetū Stream.

- **Overview of the Water Courses agreement**
- **A modern historical context to Te Awa Kairangi**
- **Waiwhetū Stream Specific.**

Overview of the Water Courses Agreement and why we manage certain sections of Te Awa Kairangi and its Tributaries Capability

Attachment 1 to Report 24.89

Common Law

The Land Drainage Act 1908

The Soil Conservation and Rivers Control Act 1941 (an enabling act)

Local Government Act 2002 (amendment)

Watercourses Administration



Common Law

[*kā-mən 'lō*]

A body of unwritten laws based on legal precedents established by the courts.

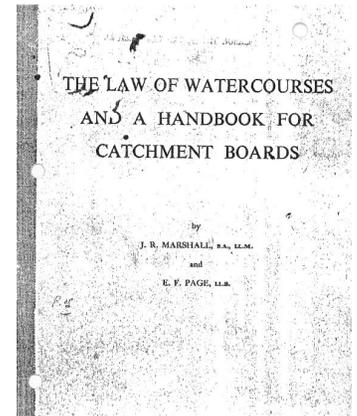
Investopedia

Version as at 23 December 2023



Soil Conservation and Rivers Control Act 1941

Public Act 1941 No 12
Date of assent 29 September 1941
Commencement 29 September 1941



Local Government Act 2002 (Amendment)

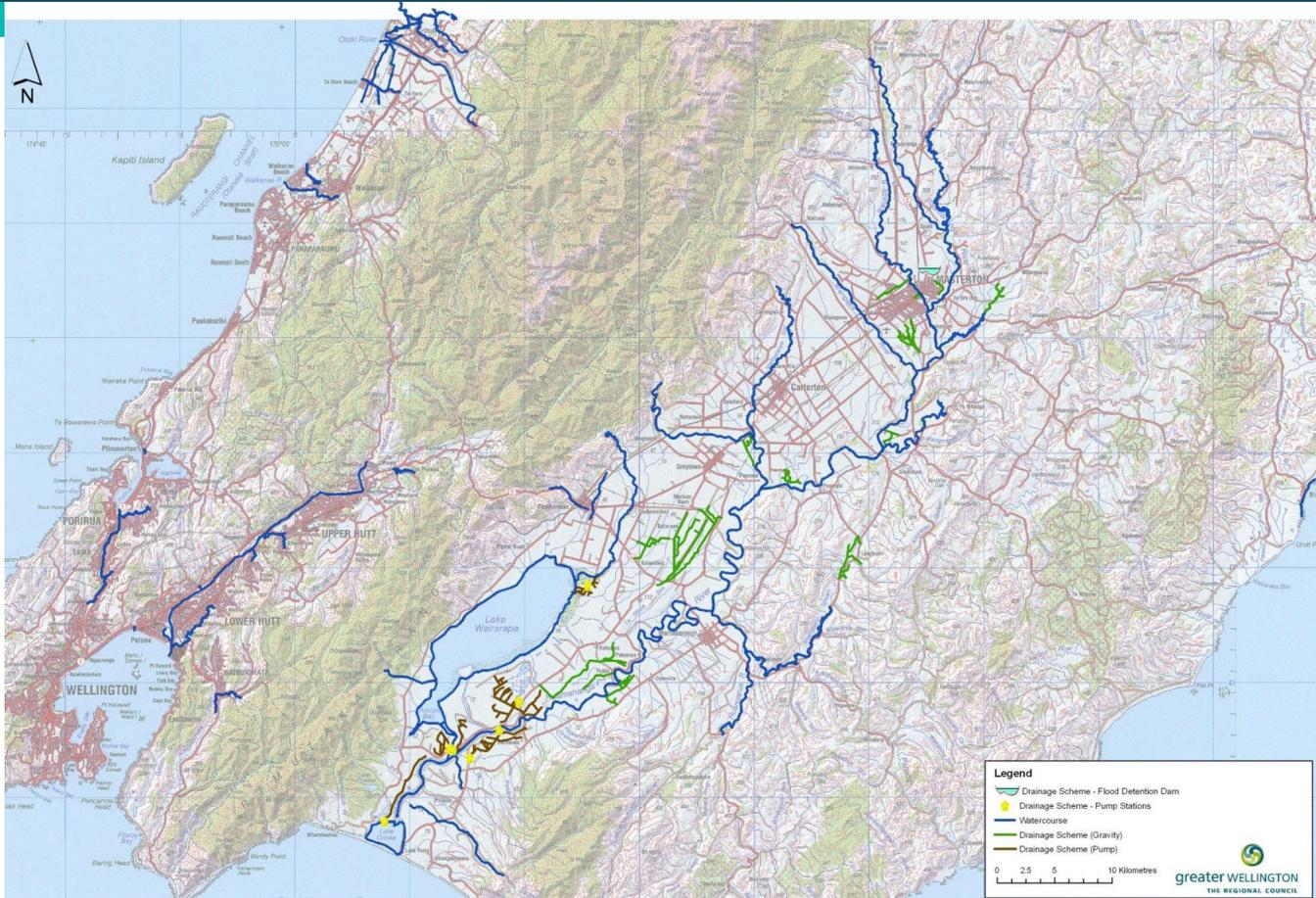
2 Groups of activities

- (1) A long-term plan must, in relation to each group of activities of the local authority,—
- (a) identify the activities within the group of activities:
 - (b) identify the rationale for delivery of the group of activities to which the group of activities primarily contributes:
- (2) In this schedule, each of the following activities is a group of activities:
- (a) water supply:
 - (b) sewerage and the treatment and disposal of sewage:
 - (c) stormwater drainage:
 - (d) flood protection and control works:
 - (e) the provision of roads and footpaths.

3 Capital expenditure for groups of activities

- (1) A long-term plan must, in relation to each group of activities of the local authority and for each financial year covered by the plan, include a statement of the amount of capital expenditure that the authority has budgeted to—
- (a) meet additional demand for an activity; and
 - (b) improve the level of service; and
 - (c) replace existing assets.

Map of Region and Schemes



Water Courses Under Management

- This relates to approximately 1000km of rivers and streams out of a total of 25,000 km of rivers and streams in the region

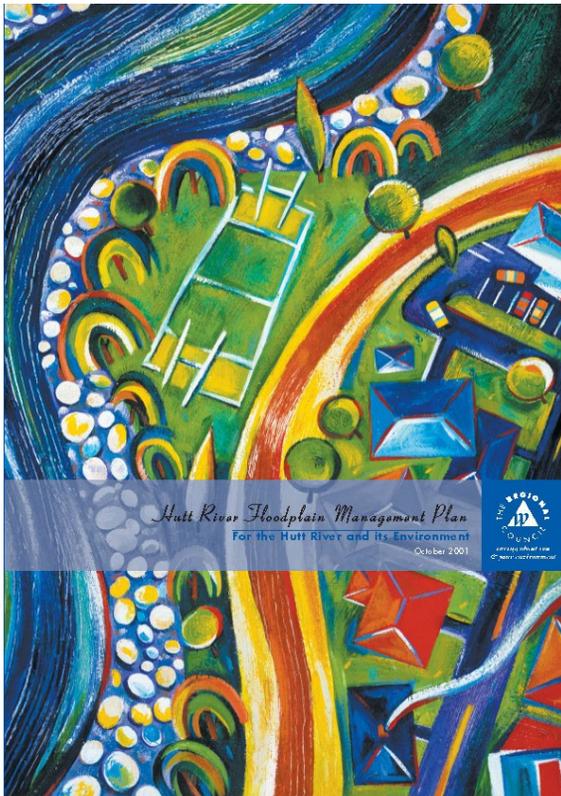
Flood Plain Management Plans in Te Awa Kairangi

Specific Floodplain Management Plans (FMPs) have been developed for the following catchments

- Hutt River Scheme
- Pinehaven
- Waiwhetu (in development)

In the case of the Hutt River and Waiwhetu, the FMPs were undertaken on the basis of known greatest risk from a regional perspective. In the case of the Pinehaven, the FMP was developed in part as a requirement of the agreement to hand responsibility for managing the Pinehaven Stream over to Upper Hutt City Council.

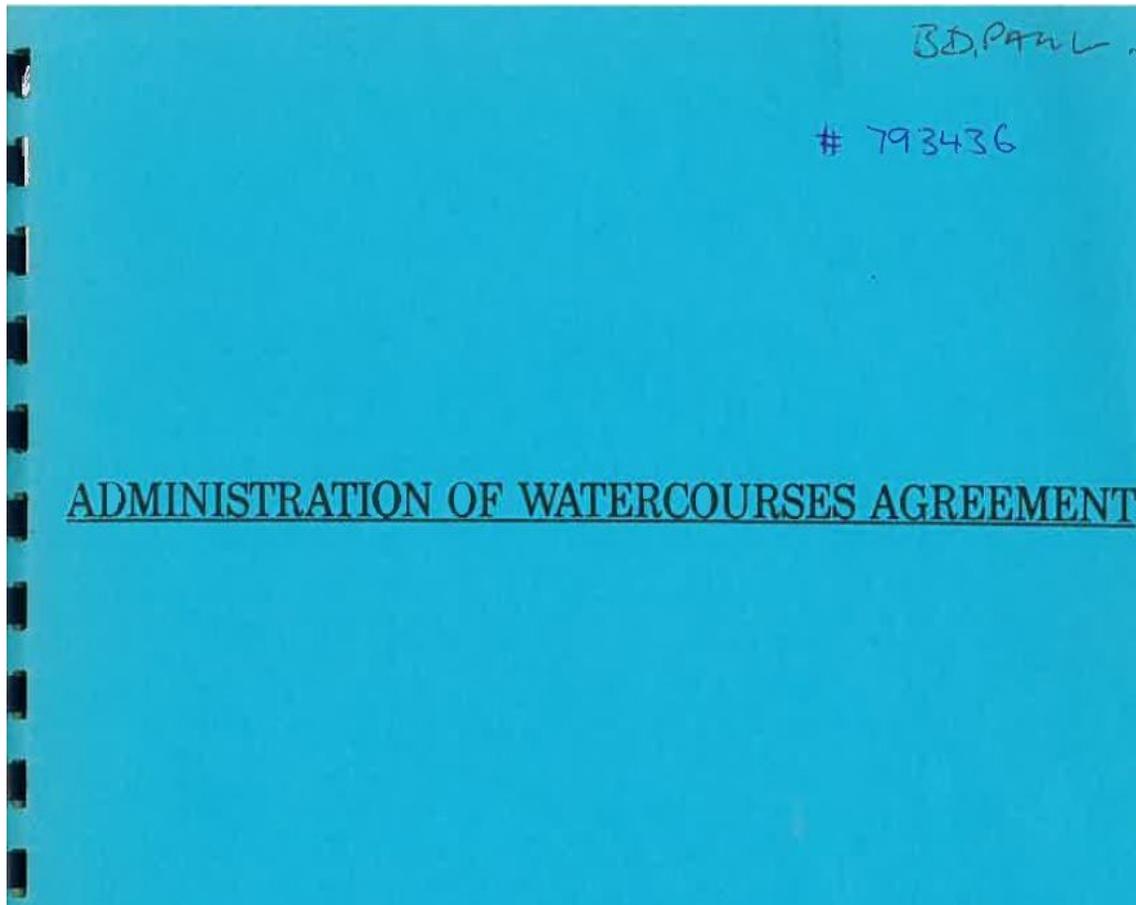
How has this been applied. The implementation of Schemes



Hutt River Floodplain Management Plan 2001

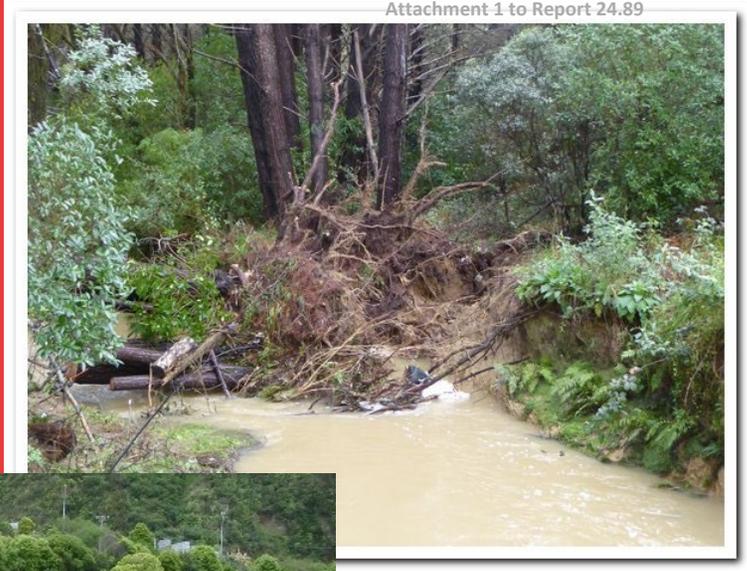
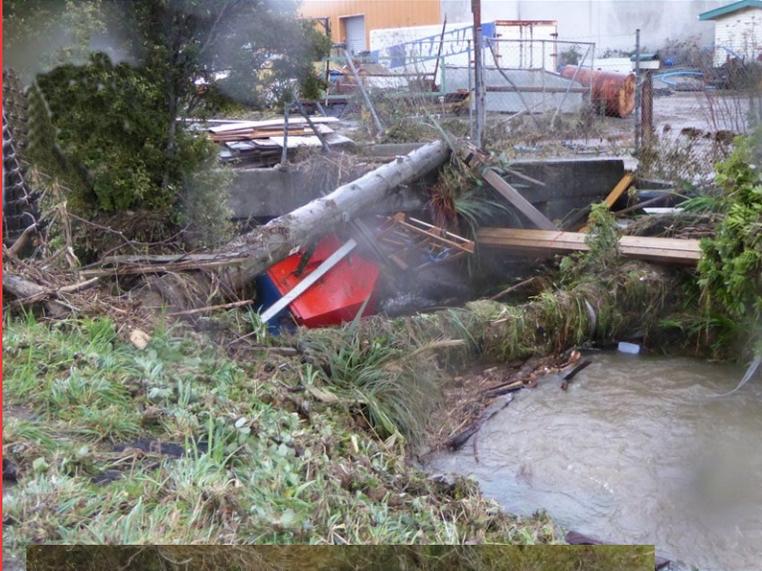
- This is the foundation document and the general principles of how the community will manage the flood risk from the Hutt River.
- Meets the requirements under the various Acts related to our work.

What about areas where we do not have schemes



Water Courses Agreement 1977

- This is an exchange of letters setting out the agreement with the various local authorities in the region on how we will manage certain urban sections of water courses.





What is not included!

EROSION



**Porirua Stream – Tawa Street erosion
(16 February 2004)**



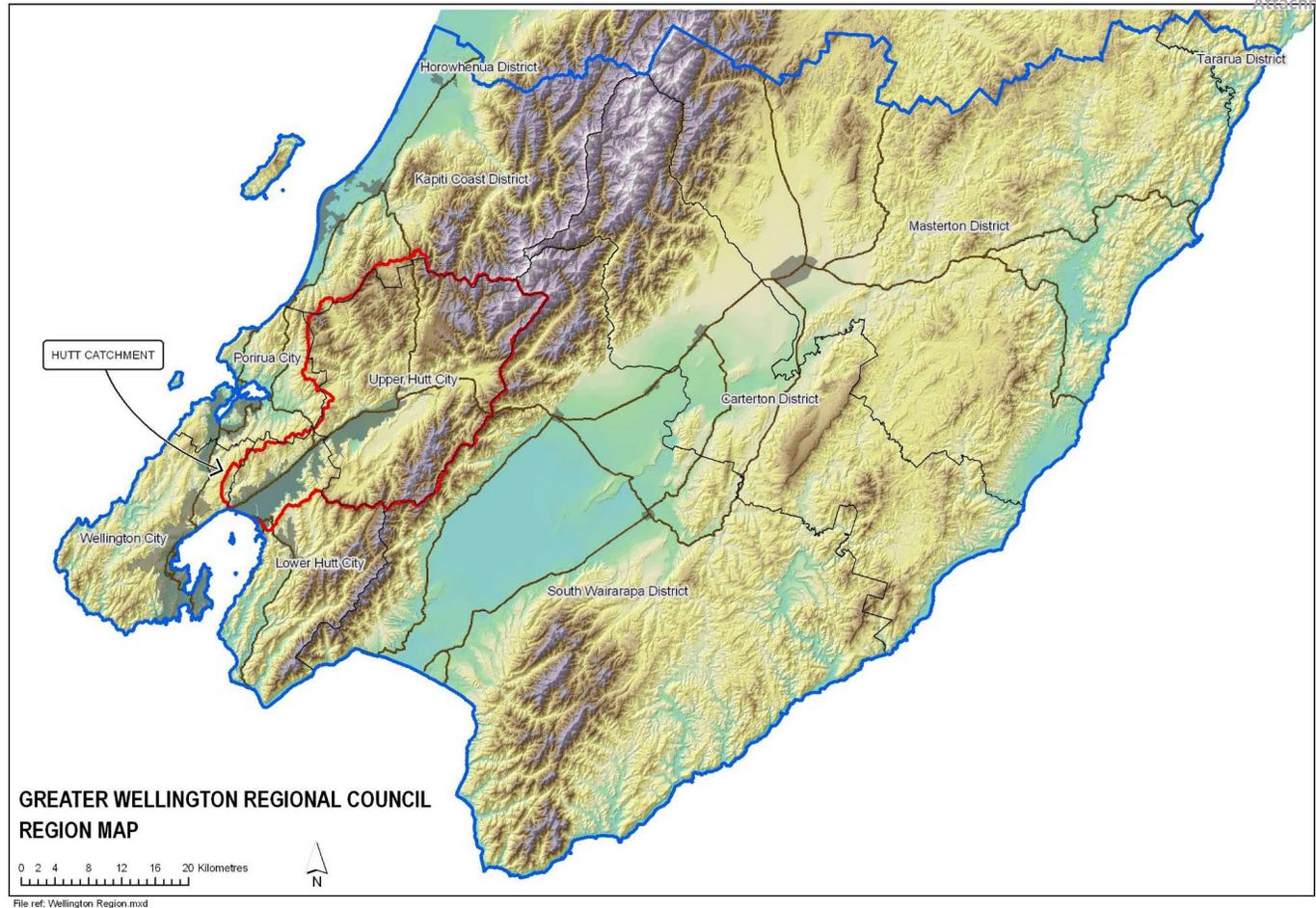
**Porirua Stream – Linden erosion
(4 August 2006)**

What if we do not have a scheme or watercourses agreement?

Private Landowner Responsibility

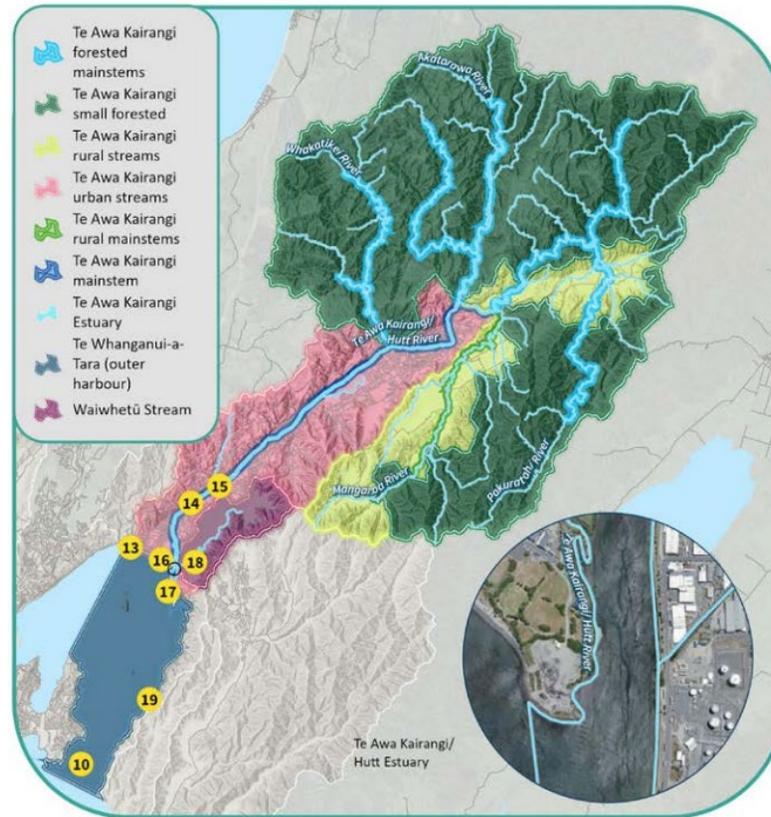
- Must keep the waterway clear of obstructions (common law)
- Some isolated works funding available in certain circumstances for these areas.

A Historical Context

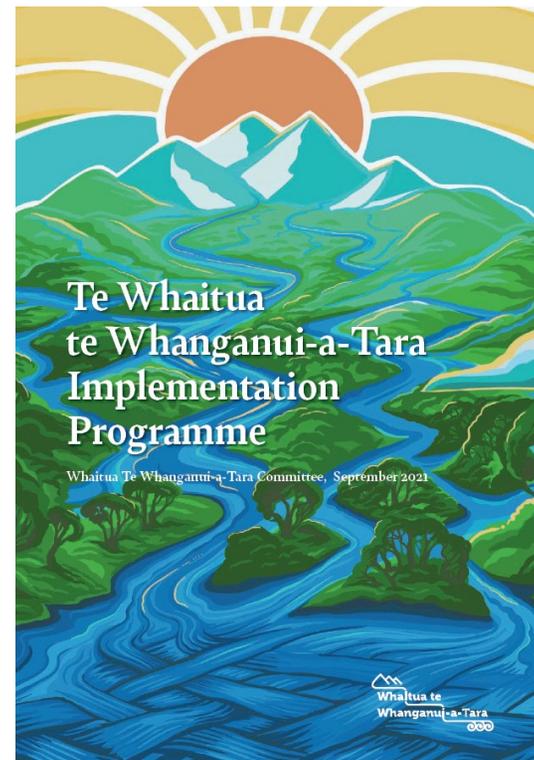
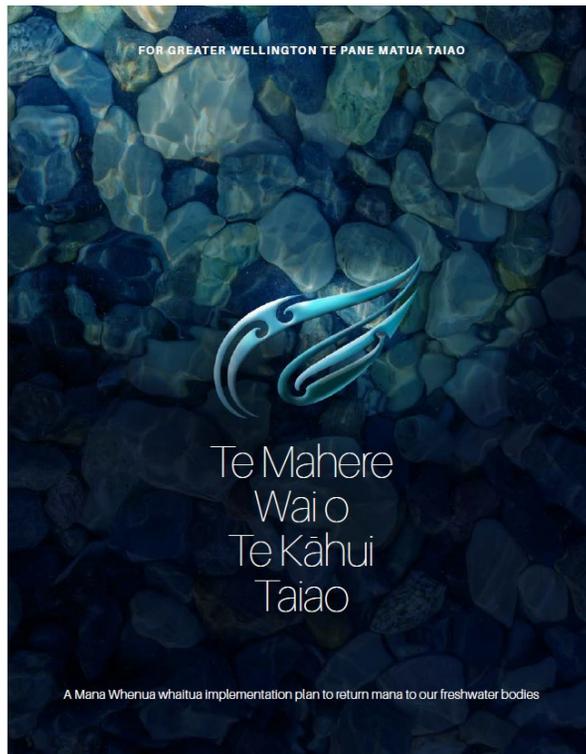


Te Awa Kairangi

Areas in the Te Awa Kairangi catchment



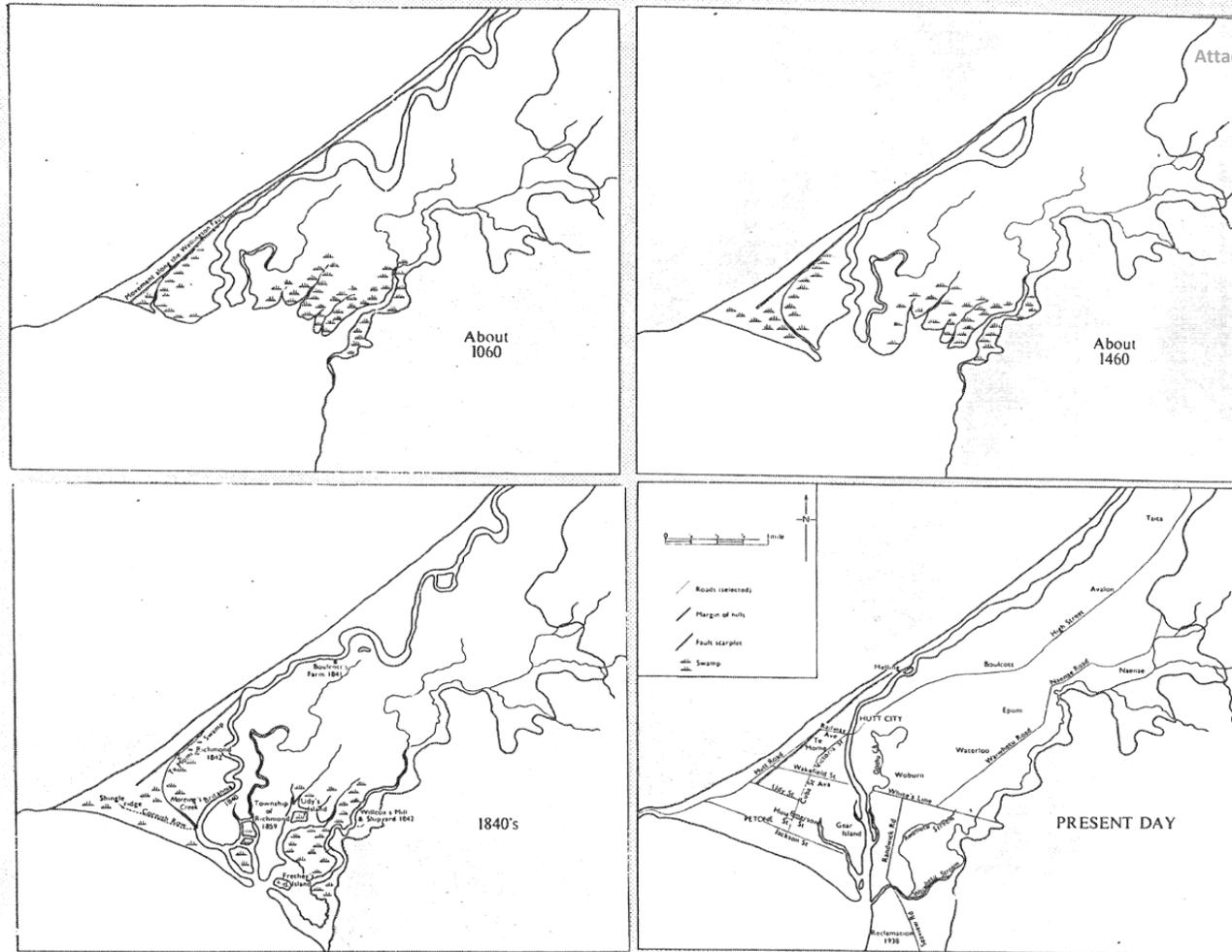
Te Whanganui-a-Tara Whaitua Implementation Programmes



Te Oranga Wai Assessment for Waiwhetu

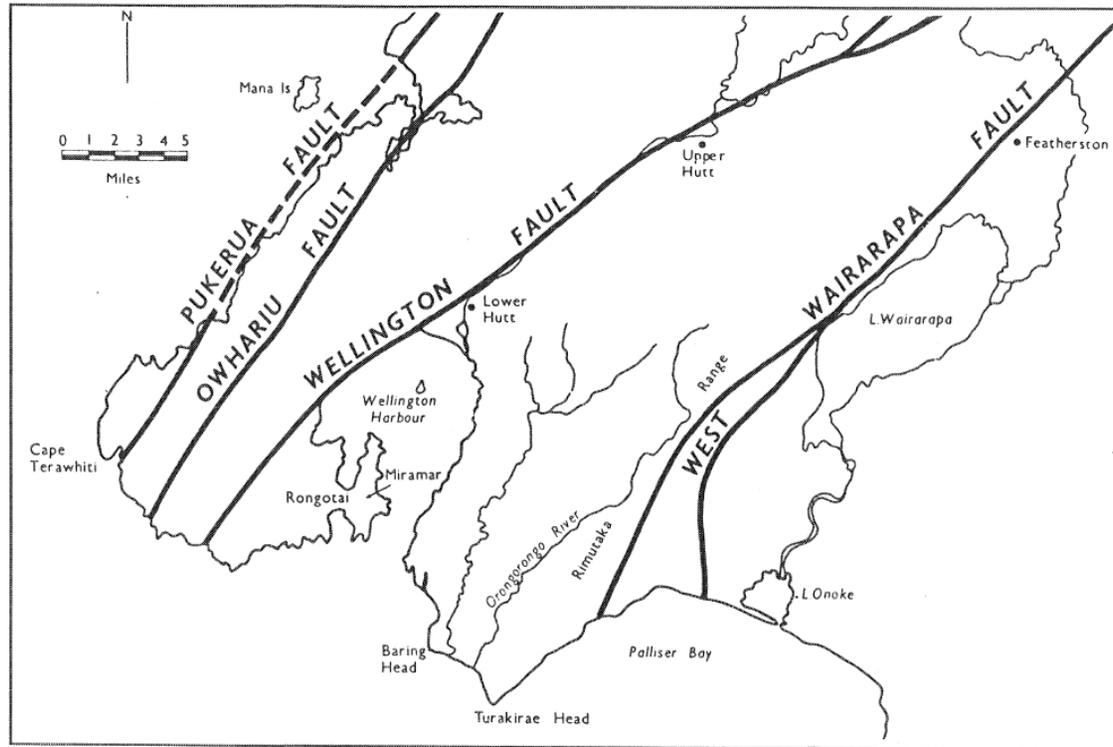
Kaupapa	Āhuatanga Attribute	Tūnga Āhuatanga Whāinga mō Te Wai Ora Wai Ora attribute state	Aromatawai ā-kaupapa arowhānui Overall current kaupapa assessment	Ngā tikanga o Te Mana Whenua Mana Whenua target attribute state	Rārangi Wā e Tutuki ai Te Wai Ora Timeframe to reach Wai Ora
Water quality/ quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the awa	Wai Kino.	Wai Māori mai uta ki tai (long-term).	Long term
Water quantity	Develop assessment of wadeable awa through cultural framework	To be determined. Turanga waka. Navigability for the lower reach.	Wai Kino.	To be determined.	To be determined.
	Development of cultural flows	Develop cultural framework for water allocation for all of the whaitua, small streams and large (these are not environmental flows).	Wai Mate.	Wai Ora (short term).	Short term
Mahinga kai	Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	Wai Kino.	Wai Ora (short term).	Short term
	Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	Wai Kino.	Wai Māori (medium term).	Long term
	Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	Wai Kino.	Wai Māori (medium term). Maintain pristine areas.	Long term
	Species presence/ abundance	Five or more mahinga kai species present.	Wai Kautū.	Wai Māori (medium term), some uncertainty between medium and short term.	Long term
	Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.	Wai Kino.	Improve Wai Māori (medium term). Is a rāhui relevant to raise awareness and provide protection?	Long term

				Waiwhetū Stream					
				Waiwhetū S. @ Whites Line East			Part FMU default TAS ¹		
				Baseline		TAS ¹			
Parameter	Unit	Statistic	Timeframe	Numeric	State	Numeric	State		
Periphyton biomass ²	mg chl-a/m ²	92 nd %ile	By 2040	Insufficient data		≤200	C	M	
Ammonia (toxicity)	mg/L	Median		0.027	B	≤0.02	A	!	
		95 th %ile		0.076		≤0.05			
Nitrate (toxicity)	mg/L	Median		0.5	A	M	A	M	
		95 th %ile		0.9					
Suspended fine sediment	Black disc(m)	Median		1.1	A		A		
<i>Escherichia coli</i> (<i>E. coli</i>)	/100mL	Median		495	E	≤130	C	!	
		%>260/100mL		73		≤34			
		%>540/100mL		42		≤20			
		95 th %ile		5,800		≤1200			
Fish	Fish-IBI	Latest				≥34	A	M	
Fish community health (abundance, structure and composition)		Expert assessment ³			Insufficient data		N/A ³	C	!
Macroinvertebrates (1 of 2)	MCI	Median		55.4	D	≥90	C		
	QMCI	Median		2.2		≥4.5			
Macroinvertebrates (2 of 2)	ASPM	Median		0.1	D	≥0.3	C		
Deposited fine sediment ²	%cover	Median		30	D	≤29	C		
Dissolved oxygen	mg/L	1-day minimum		Insufficient data		≥7.5	A		
		7-day mean minimum				≥8.0			
Dissolved inorganic nitrogen ⁴	mg/L	Median		0.56		M	M		
Dissolved reactive phosphorus ⁴	mg/L	Median		0.024		≤0.018	!		
		95 th %ile	0.049		≤0.049				
Dissolved copper	µg/L	Median	1.0	C	≤1	A			
		95 th %ile	4.0		≤1.4				
Dissolved zinc	µg/L	Median	18.3	D	≤8	B			
		95 th %ile	51.5		≤15				

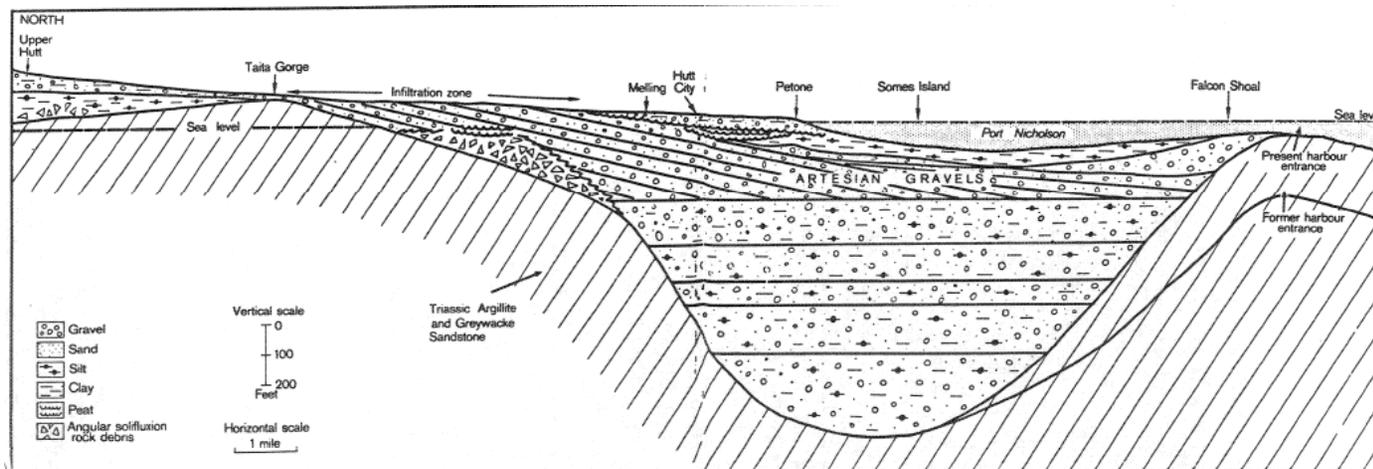


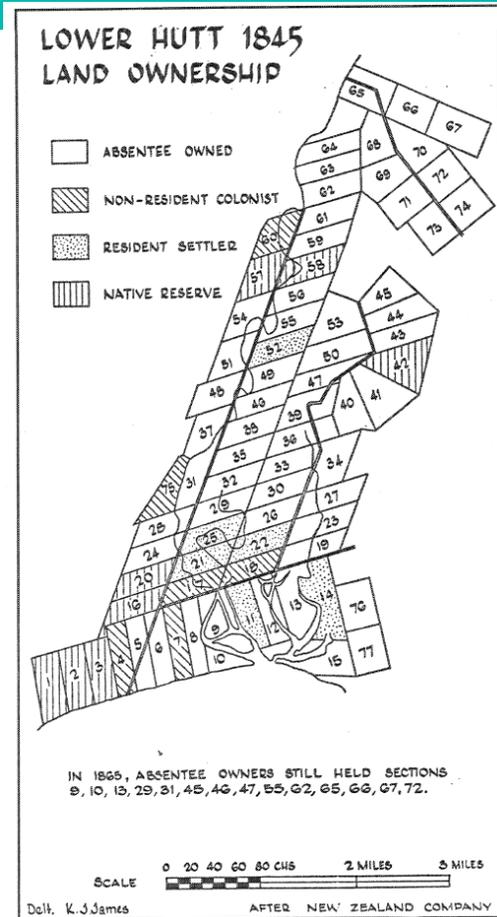
Petone foreshore and Hutt River Estuary

Major faultlines in the Wellington Area



Hutt Valley Artesian System





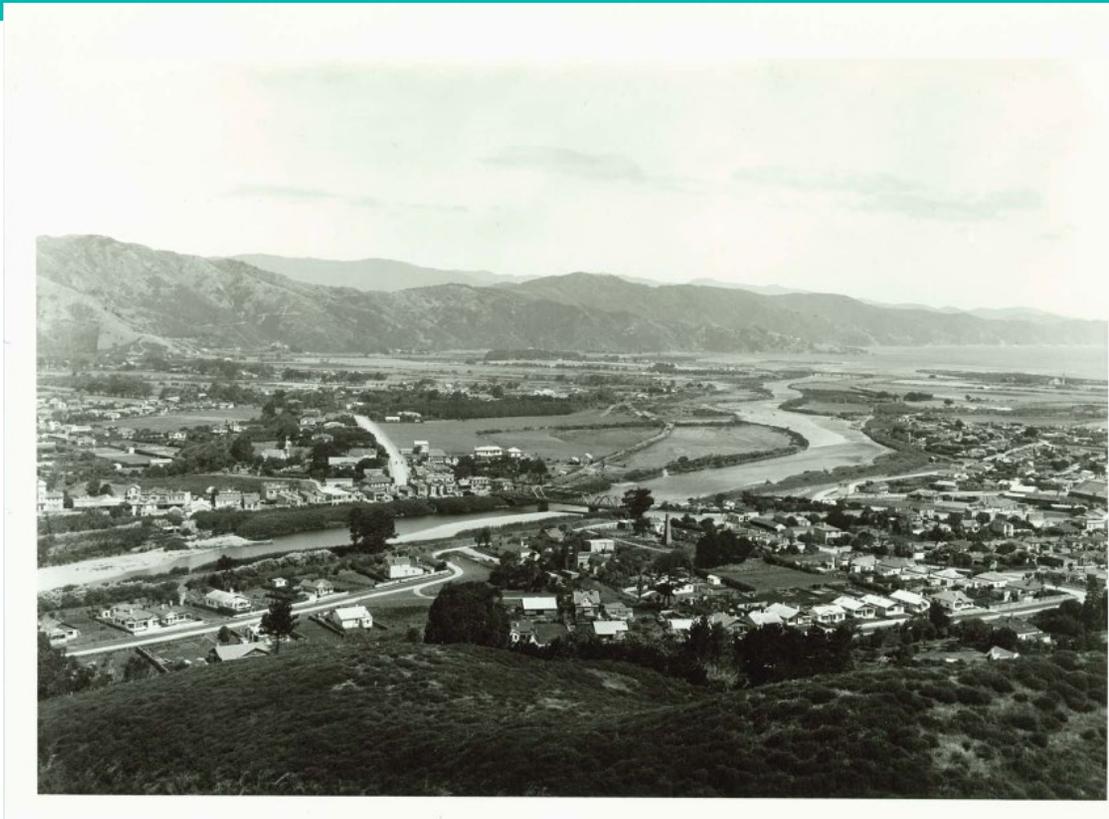
Port Nicholson from the Hills above Petone, 1847





Lower Hutt 1870

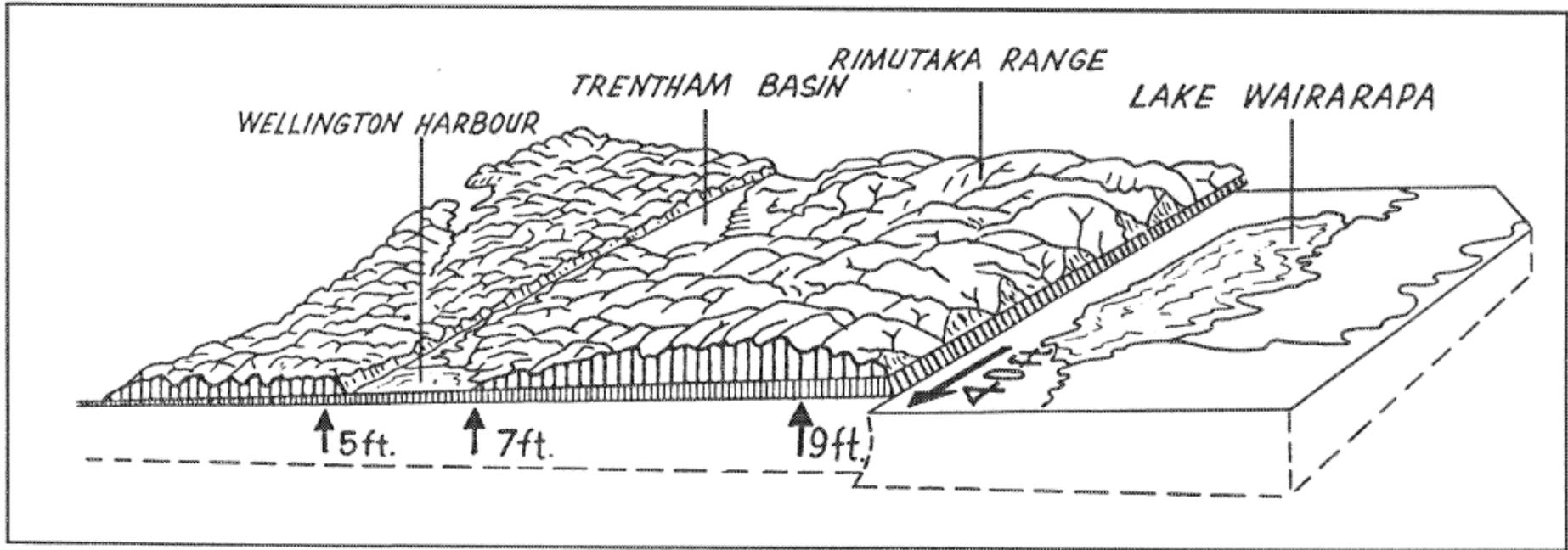
Hutt City c. 1920



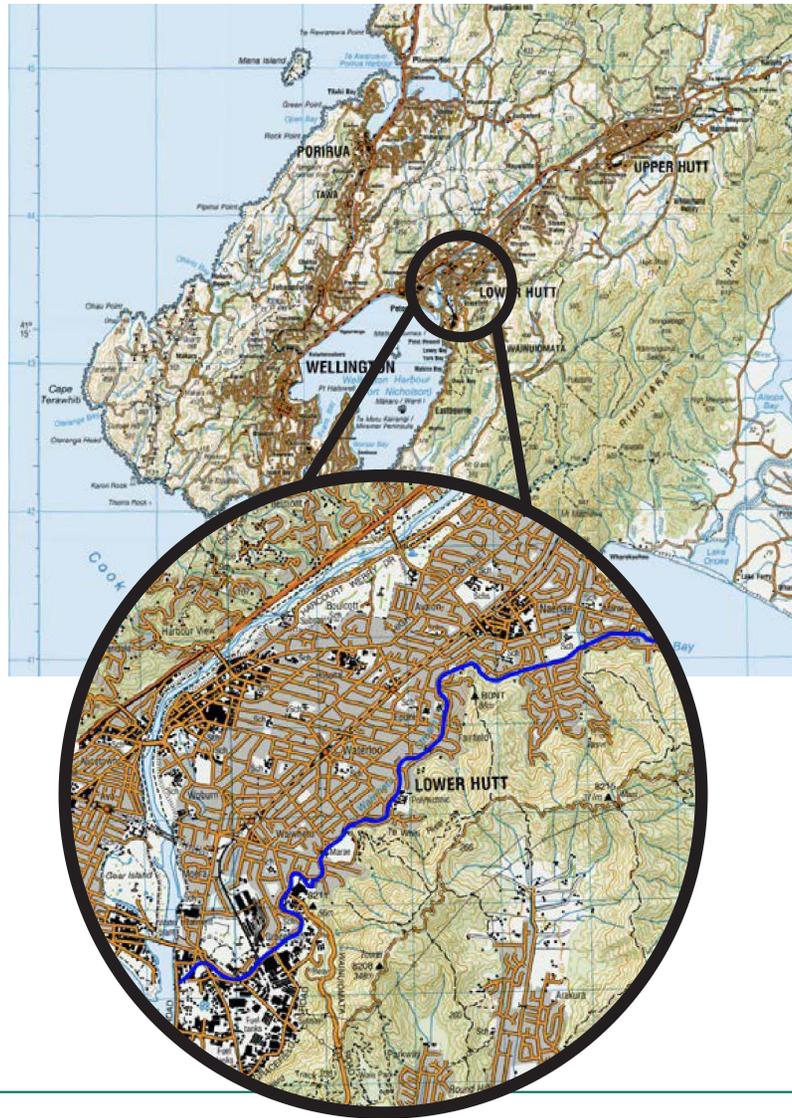
Hutt City c. 2010



Fault movement, 1855 earthquake



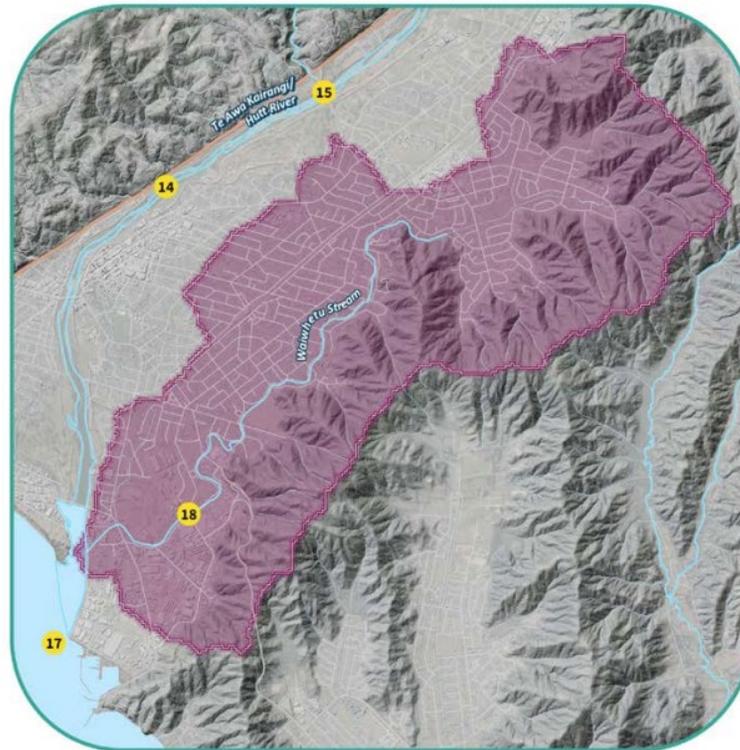
Waiwhetu More Specifically



Waiwhetu Catchment

Waiwhetū

within Te Awa Kairangi catchment



Overview

The Waiwhetu Catchment

- Catchment Area **18km²**
- People directly affected by flooding **20,000**
- Property affected by a flood **4000** (4700 buildings)
- Stream Length **9km**
- Stream Length Maintained by GW **7.4Km** (up to Waddington Dr)

**C. 1930s The Estuary prior to the first reclamation. Waiwhetu
timbered outlet channel constructed**

Attachment 1 to Report 24.89



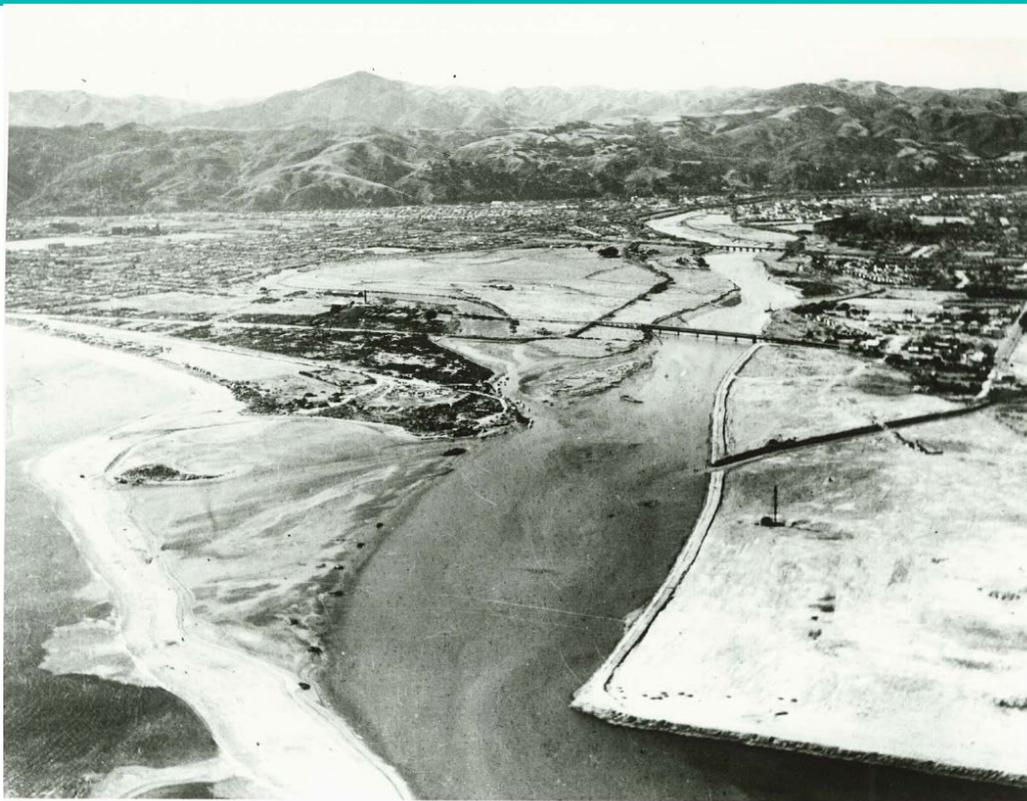
Mouth of the Waiwhetu Stream, Hutt River 1921



Shingle filling of the First Reclamation, c. 1934



The first reclamation c. 1934 showing the Ava Rail Bridge and the (Jackson Street) Pipe Bridge



Lower Hutt today showing reclaimed land

Waiwhetū
Stream Mouth



2004 Flood Riverside Drive



Contaminated Sediment Clean Up 2009



Improved Flood Capacity 2010





TE WAIWHETŪ

FRIENDS OF WAIWHETŪ STREAM

OUR STREAM – OUR TAONGA

A TEN-YEAR JOURNEY TOWARDS RESTORATION (2011-2021)



Fig. 9 Article in the Hutt News, 7 May 2014



Fig. 7 The stream in 1961 dominated by Cape pondweed



Fig. 8 The same stretch of stream after Cape pondweed was removed



Giant bully



Kōura



Pukeko and juvenile



Little shag

What's Next - Current Flood Hazard

FOR GREATER WELLINGTON TE PANE MATUA TAIAO



Te Mahere
Wai o
Te Kāhui
Taiao

A Mana Whenua whaitua implementation plan to return mana to our freshwater bodies

Tohu Created by Manukorihi Winiata

(Ngāti Raukawa, Te Ātiawa, Ngāti Awa)

Our tohu is inspired by two natural elements of the environment. The overall form is shaped like a water droplet to make that connection to the wai or water, and tilted horizontally to give the perspective of a landscape. Within the droplet you can also see an awa (river) drawn in perspective. The simple gestural lines further celebrate the connection between the design and the wai.

The top section of the design makes a direct reference to mahinga kai. The koru above curling upward represent the mahinga kai sites that are associated with wai māori (fresh water). The koru below curving in towards the awa represents all the mahinga kai sites associated with waitai (sea water).

The bottom section of the design represents Taranaki Whānui and Ngāti Toa Rangatira coming together which can be seen in the two different tones of colour. The pattern here is two interlocking puhoro, a symbol which is predominantly found painted underneath the hull of a waka (canoe). It speaks about the two iwi being on the same waka to achieve the same goal. This section of the pattern sits under the awa, as it represents the mana whenua.

When both top and bottom sections of the design come together, it forms a river in the negative space flowing from the top of the mountain down to the river mouth and out to sea.

The negative space represents the unseen, in this context it is the spiritual connection to the wai. It represents the wāhi tapu, wāhi tupuna and wāhi maumahara.

The intent here was to keep the tapu separate from the mahinga kai and mana awa/wai whenua sections of the design.

FOR GREATER WELLINGTON TE PANE MATUA TAIAO

NOTE: the term "Greater Wellington" used throughout this report refers to the regional council of Greater Wellington Te Pane Matua Taiao.



TE RŪNANGA O
TOA RANGATIRA



TARANAKI WHĀNUI
KI TE UPOKO O TE IKA



Te Mahere Wai o Te Kāhui Taiao

A Mana Whenua whaitua implementation plan to return mana to our freshwater bodies



Te karanga a Te Awa Kairangi

Tēnei au te tangi ake nei, te wairua o ngā mea katoa i tukua ki ngā tāngata o Te Whanganui-a-Tara e ōku tūpuna – ngā wai tuku kiri o ngā mātua tūpuna. He rite tonu au ki te toto o Papa-tū-ā-nuku (the element of earth), mā ōku wai hei whāngote i ngā tgata, i ngā tupu, i ngā puna kai, i ngā pepeke, i ngā kararehe, i ngā manu, me ngā ika katoa o tēnei takiwā. I tīmata mai au i konei i ngā roimata i maringi i te wehenga o Ranginui rāua ko Papa-tū-ā-nuku (the element of earth), ko rāua hoki ngā tūpuna o te tangata. I takea mai ao i te tīmatanga mai o te ao mārama, hei mutunga atu mō ngā wā o te Pō. Ko ēnei roimata e rere nei i roto i ahau, he roimata māturuturu mai i ngā tihi maunga whāngai i ahau, i ngā maunga tiaki i ahau – ko Kaitoke tērā, ko Akatārawa tērā, ko Tararua, ko Remutaka, ko mātou ki te tuku wai ki te moana o Raukawakawa.

I pekapeka haere au, i kawea haere i ngā wai nei i te taha o aku kaitiaki, o te Huia, o te Tūi, o te Kererū, nō mua iho, nō mua iho. Nō te taenga mai o ngā tāngata tuatahi, ka timata tō mātou noho ngātahi. Ka huri au hei tupuna mō te tangata – he awa tupua, ā, ko rātou ka noho hei kaitiaki i ahau. I mihi nui anō mātou ki a mātou anō, nāwai ā, ka takoto ake he whakapapa, he kawa, ngā āhuatanga o te tapu, o te noa, ā, ka pai te noho tahi. I hā taku manawa, anana, he wai ora!

I ētehi wā kua titiro ki runga kua kite au i taku hoa i a Rehua. I te taenga mai o Rehua kua mōhio te tangata, kua tae ki ngā marama o te aroaromahana, kua kaukau i roto i aku wai mātāo. I ngā wā e rite ana, ka tohia ngā pēpi e ngā tohunga i roto i ahau, nā te para kore o ōku wai. I ngā rā katoa ka haere mai te iwi ki te inu i te wai, ki te kōutuutu tahā, ā, i te aranga ake o tēnā reanga, o tēnā reanga ka ako i ngā ānau o taku tinana – kua mātau hoki ki ngā wāhi pai hei rapu kai, hei whakawhata kai. Ka whāia e ngā tamariki ngā tuna i roto i taku puku, ka mānu rātou i te ia o te wai, he heke whaka-te moana, ki Raukawakawa. I reira kua kata tahi mātou, kua pārekareka i te noho tahi. Te kitenga atu o Takurua i te pō, kua mōhio au, tēnei a Tāwhirimātea te whakatata mai nei. Ka pūrena katoa au i tana ua, ka rurea ahau e ana hau, ka rūrūtia e ia ngā toka i roto i ahau i te kaha o tōna whaitiri – e mōhio ai tātou ki tōna kaha, ki tōna mana. I reira ka piki ōku wai, ka torotoro, ka whāinuinutia ngā repo, ngā harakeke, kua piki anō te ora o te ngahere.

Kua taikuiatia ahau ināiane, kua nohoia hoki e te tini o te tangata. Kua mate ā-moa taku hoa, taku kaitiaki, te Huia i nuku-taiao, kua kore anō e kitea mai. Ko ngā ngahere i noho hei korowai mōku, kua waerea katoatia, mō te āhuatanga noho o te ao hou. Kua karapotingia ahau e ngā whare mō ngā whānau, e ngā whare tiketike mō ngā kaimahi me ngā huarahi tino nui mō ngā waka whenua o nāiane. Kua haea mai he tiwhana hou, kua hē te takoto o ōku taupā. E tū ana ētehi whare, ētehi hanganga nui i ngā wāhi i rere noa ai ōku wai i mua. Kua whakaurua he ngongo ki taku kōpū. Ēnei mea katoa hei tāmi i ahau, hei whakakī i ahau ki ngā mea poke, ahakoa pea, ka kīa he poke i taku tinana. He tini tonu ngā tāngata e haere mai ana.

Kua rapu tautiaki au ināiane, ā, ka tauawhi tonu au i te taiao i whakakorowai i ahau i mua. Ka pā te pōuri nui mō aku tūpuna. Mō Tangaroa, e takoto nei hei tukunga nei mō ōku wai, meāke ka ara ake ki te whakatumā i te tangata. Kua tū mai a Tāwhirimātea, kua korikori, kua haka, kua huripoki i te ao. Ka rerekē haere tonu ōku wai, te tae, te kakara, te piro rānei. Ka nui haere ngā para i roto i taku kōpū, ka pipi ki ngā awaawa, ki ngā riu, ka turu ki ngā hōpua wai, te wai takaro o ngā tamariki. Ko tēnei karanga, he karanga kia whawhai, kei pēnei te mutunga atu, he karanga ki ngā kaitiaki whakaruruhau i ahau.

He mea tito tēnei mō te tini o te tangata e mahi nei mō te aroha kia whakahokia mai te mana ki ngā awa wai māori, ki ngā awa, ki ngā repo hoki o Whanganui-ā-tara

He mea tuhituhi nā Hikitia Ropata

He mea whakamāori nā Piripi Walker

He tohu aroha tēnei ki te Rōpū Mahi o Te Kāhui Taiao



The voice of Te Awa Kairangi

I am the essence of all life gifted to the people of Whanganui-a-Tara by my ancestors – ngā wai tuku kiri o ngā mātua tūpuna. Like the blood of Papa-tū-ā-nuku (the element of earth), my waters support all people, plant life, food sources, insects and animal life across this place. My time here began with the tears of separation of our sky father Ranginui and earth mother, Papa-tu-ā-nuku (the element of earth). I was created at the beginning of light coming to the world of darkness. These tears flow through me from the peaks of the mountains who feed and protect me – Kaitoke, Akatārawa, Tararua, Remutaka and together we feed the waters of Raukawakawa.

I once meandered down these waters alongside my kaitiaki, the Huia, the Tūi and the Kererū, nō mua iho – since forever. When the first people began to arrive, we began to live together. I became their ancestor – a tupua awa and they became another kaitiaki to protect me. We respected each other and over time we would share a whakapapa (genealogy), sacred rituals and we lived in harmony with each other. I could breathe and I was wai ora!

Sometimes I would look to the night sky and would see my old friend Rehua. When Rehua arrived, I knew it was a time for people to be cooled by my flowing waters. At special times, my waters were so pure that tohunga would bathe their new pēpi in me. Everyday, the people could drink from me and with each generation they learnt the contours of my body – finding places to source and store food. Tamariki (child/children) would chase the eel inside my belly and float on my currents towards Raukawakawa. We would laugh together and enjoy each other's company. When Takurua arrived in the night sky, I knew Tāwhirimatea would soon reveal himself. His rain would fill me, his fierce winds would push me, his thunder would shake rocks inside me – reminding us of his power and presence. My waters would rise and spread, and I could feed the wetlands, the harakeke and the ngahere giving way to new life.

I am very old now and many more people have arrived. My noble kaitiaki and friend the Huia has left this earthly world, never to be seen again. Ngahere that once surrounded me have been cleared to make way for a new way of living. I am now surrounded by houses for families, tall buildings erected for workers and highways for transport. Machines have invented new curves and distorted my edges. Structures stand where my waters used to flow easily. Pipes have been inserted into my belly. All these conspire against me and have filled me with impurities that will always remain foreign to me. Many more people are yet to arrive.

I seek refuge now and embrace the Taiao who once shouldered me like a cloak. I feel great disappointment for my ancestors. Tangaroa, who waits to receive me, will rise in an act of defiance. Tāwhirimatea stands upright, beside me ready to call with his haka in an act of revolution. My waters will continue to change in colour and odour. The foreign residue forming and flowing in my belly will amble their way down these valleys and gullies filling pools of water where innocent feet will play. My lament is a call to arms, to the guardians who will protect me.

Inspired by the many people who volunteer their time to return mana to freshwater rivers, streams and wetlands of Whanganui-ā-tara.

Written by Hikitia Ropata, translated by Piripi Walker

Dedicated to Te Kāhui Taiao Project Team

Te Ara Tupua

E ngā iwi, e ngā reo, tēnā koutou katoa. Kia hoki ake tātou ki ngā rā o nehe, ki te orokohanga mai o ēnei motu, kāhore kau he tangata kia takahi i ōna takutai, ko te wā tērā o te hīnga mai o Te Kāhui Maunga i te rire o Te Moananui-a-Kiwa, hei huaki i te waha o Te Ika-a-Māui.

I muri i te aranga mai o ngā ika whenua o te puku o te ika, ka tonoa Te Kāhui Maunga e Ranginui ki te upoko tonu o te ika, mā roto i Te Au Rona me Te Au Kukume, ā, ka huihui mai ki te tihi o Pukeatua. Te taenga ki Pukeatua, ka takohatia ētehi karakia tapu hei tono i ētehi tupua e rua, mai i te roto wai māori o reira. Te tononga mai o ngā karakia o nehe, ka tonoa ngā tupua tawhito, a Ngake rāua ko Whātaimai, kia huaki i te waha o te Ika-a-Māui.

I wātea ia tupua ki te whai i tōna ake ara ki te ao tūroa mai i te roto wai māori, arā, i rerekē anō te ara i kōwhiria e tētehi, e tētehi, ki te huaki i te waha o te ika nui a Māui, kia puta atu ki te aotūroa. I haere tētehi o aua tupua mā te taha rāwhiti o te roto, ka kōwiri haere, ka haea e ia te whenua. Ka koropana whakawaho ia me te tuki atu i ngā maioro, i ngā pari me ngā toka, kia puta rawa ia i te roto wai māori ki te ao e tatari ana i waho, ki Hine-moana. Ko te tūtakitanga tuatahi tērā o te roto wai māori ki te wai tai. I muri i te tūkinga, ka waiho mai e Ngake ngā tohu whenua e kitea ana e tātou i ēnei rā.

I whai te Tupua tuarua, ko Whātaimai te ingoa, i te ara ki te hauāuru, timata mai i te korokoro o te Ika-a-Māui, arā, i te Korokoro-o-te-Ika, nō muri mai ka tapā ko Te Korokoro-a-Mana, nāwai ā, ka tae ki Ngā Ūranga, ka pōkaikai katoa tana tinana. Engari, i mua atu i tana takatū kia rere ia ki waho, kua tukia kētia e tana hoa taua ara turaki toka, whakaheke hoki i te ritenga o te wai. I roto i ngā

wai e whakamimiti haere ana i mua i ana karu, kāore i kaha te tupua tuarua, kua pōrori noa tana haere, ā, ka mau i te tāhuna. Kāhore i kaha ki te nuku whakamua, ā, ka noho i reira mō tētehi wā, me te māreparepa o ngā wai ki tana tuarā.

Ka taka te hia mano tau, kātahi ka whakaarangia ia ki runga rawa, me te noho mārakerake o tana tinana ki ngā āhuratanga o te ao nui, ā, ka mate rawa ia i reira. Nō te hemonga, ka rere tana wairua hei manu ko Te Keo te ingoa, ā, mohoa noa nei, e whai tonu ana ia i te mārāmatanga tūturu o te hinengaro.

I tonoa ēnei Tupua e rua kia huaki i te waha o te Ika-a-Māui, ā, i whāia e rāua ō rāua ara ake, rerekē hoki. Nā tētahi i waihanga te ara whakaroto o te whanga, me tana waiho mai i ngā tohu whenua ingoa-nui o Te Awa Kairangi, o ngā moutere o Matiu, o Mākaro, o Mokopuna me Te Au-a-Tane.

I whai te tuarua i te ara whakaroto o te whanga, timata mai i te korokoro o te Ika-a-Māui me te waiho mai i ngā tohu ingoa-nui o Horokiwi, o Waihinahina, o Parikararanga, o Parororangi, o Tahataharoa me Ngā Ūranga.

Ko ēnei Tupua tokorua i hanga tō tātou whanga, ā, hei wāhanga taketake o ōna tohu, o ōna rerenga wai o ōna tāngata, me ōna takotoranga whenua, e karapoti nei, e tuku nei i ō rātou wai ki Te Whanganui-a-Tara.

Nā Kura Moeahu (Hereturikōkā/ Ākuhata 2019)

(Te Kāhui Maunga, Te Āti Awa, Ngā Ruahine-rangi, Ngāti Mutunga Taranaki Tūturu, Ngāti Tama, Ngāti Ruanui, Ngāti Toa)

Te Ara Tupua ANCIENT PATHWAY

Let me take you back to time immemorial well before man walked upon these islands – when the Te Kāhui Maunga (mountain clan) were hauled from the great depths of Te Moananui-a-Kiwa (the great ocean of Kiwa) to open the mouth of the great fish Māui.

Following the procreation of the mountain ranges of the central plateau, Ranginui summoned Te Kāhui Maunga to the head of the fish through Te Au Rona and Te Au Kukume, where they gathered on the summit of Pukeatua. Upon reaching Pukeatua, they were gifted the ritual incantations to summon from the depths of the freshwater lake two ancient phenomena. Reciting the ancient incantations, they instructed the two Tupua, Ngake and Whātaimai, to prise open the great mouth of the great fish of Māui.

Each responsible for their own freedom from the freshwater lake, both Tupua took different pathways to prising open the mouth of the great fish of Māui and their ultimate freedom. One Tupua commenced his journey on the eastern side of the lake, winding himself up and leaving behind a destructive pathway. He hurled himself towards the distant barriers, he bashed through escaping the freshwater lake to freedom, unto the great maiden ocean, Hine-moana. It was at this point the freshwater lake met the saltwater for the very first time. After the devastation, Ngake left behind the geographical features we see today.

The second Tupua, Whātaimai, opted to take the western pathway, commencing from the throat of the great fish of Māui (Korokoro-o-te-lka, later to be named Te Korokoro-a-Mana), arriving at Ngā Ūranga where he began to wind himself into a coil. Before he could ready himself for his escape, his companion had already broken through leaving a pathway of destruction and causing the water level to recede. In the ever-

shallowing waters, the second Tupua, still intent on escape was unable to generate enough speed and momentum and quickly he became stuck on a sandbar. Unable to move any further, he remained there for some time as the water washed over his back.

Aeons passed by where a great land mass uplifted him out of the water exposing his body to the open-air elements bringing his life to a sudden end. In passing, his spirit took the formation of a spiritual bird, Te Keo, who to this day continues to pursue the pathway of enlightenment.

These two Tupua were both tasked with prising open the mouth of the great fish of Māui and, in doing so, opting to take alternative pathways. One created the eastern inner harbour pathway and, in doing so, left us with the geographical iconic formations of Te Awa Kairangi, the islands of Matiu, Mākaro, Mokopuna and Te Au a Tane.

The second created the western inner harbour pathway, commencing from the throat of the great fish of Māui, leaving behind the icons of the eastern harbour Horokiwi, Waihinahina, Parikaranga, Paroro-rangi, Tahatahara and Ngā Ūranga.

These two Tupua are the original creators of our harbour and are intimately tied to the landforms, waterways, people and landscapes that surround and feed into Te Whanganui-a-Tara.

Kura Moeahu (August 2019)

(Te Kāhui Maunga, Te Āti Awa, Ngā Ruahine-rangi, Ngāti Mutunga Taranaki Tūturu, Ngāti Tama, Ngāti Ruanui, Ngāti Toa)

Whakapapa

HISTORICAL BACKGROUND



Whakapapa

HISTORICAL BACKGROUND

Taranaki Whānui ki te Upoko o te Ika whakapapa

Historical background of Taranaki Whānui ki te Upoko o te Ika

When the Treaty of Waitangi was signed (6 February 1840), the iwi (tribal group) living in Te Whaitua o Te Whanganui-a-Tara (Wellington Harbour) area originated from the Taranaki region of the North Island. The collective name given to this iwi is Taranaki Whānui ki Te Upoko o Te Ika (Taranaki Whānui). Taranaki Whānui are those people who descend from one or more of the recognised tūpuna (ancestor) of Te Āti Awa, Taranaki, Ngāti Ruanui, Ngāti Tama, Ngāti Mutunga and other iwi from the Taranaki area. Their occupation at the time and continued residence gives Taranaki Whānui the rights and duties of Mana Whenua. They are traditional guardians of Te Whanganui-a-Tara and associated lands.

Taranaki Whānui migrated to the Wellington area in the 1820s through to 1830s. Since then, Taranaki Whānui has maintained ahi kā (permanent occupation). Taranaki Whānui established kāinga and papakāinga around the Wellington Harbour (and other areas). The traditional kāinga, papakāinga, māra kai (gardens) mahinga kai (food gathering areas) and other sites of cultural significance have now been largely subsumed by urban development. Yet, Taranaki Whānui remain. Migration has meant that Taranaki Whānui are now a minority within their tribal takiwā (tribal area).

The takiwā of Taranaki Whānui extends from Pipinui to Remutaka, down to Turakirae, across to Rimurapa and back up to Pipinui. Taranaki Whānui has overlapping interests with Ngāti Toa Rangitira, Rangitāne o Wairarapa and Ngāti Kahungunu ki Wairarapa.

As Mana Whenua of the capital city of Aotearoa/ New Zealand, Taranaki Whānui's vision is to ensure that their members not only maintain their place within the takiwā but are thriving and prosperous. The loss of land and the fragmentation of Taranaki Whānui descendants and whānau (family group) over the decades creates significant challenges as they seek to restore the rightful place of their members and descendants.

The Port Nicholson Block Settlement Trust (PNBST) was established in August 2008 to receive and manage the Taranaki Whānui Treaty settlement package as well as social, cultural, economic and environmental interests of Taranaki Whānui. As part of their Treaty settlement, Taranaki Whānui has a statutory acknowledgement over Te Awa Kairangi, Te Whanganui-a-Tara (the harbour), the Coastal Management Area, and holds significant interests in all waterways within Te Whaitua o Te Whanganui-a-Tara.

Ngāti Toa Rangatira whakapapa

Historical background of Ngāti Toa Rangatira

Ngāti Toa Rangatira (Ngāti Toa) are a Tainui iwi descended from the eponymous ancestor Toa Rangatira, and those tūpuna who established their mana to the Raukawa Moana (Cook Strait) region through take raupatu (confiscation of land after conquest) and ringa kaha (military force) in the 1820s. Ngāti Toa established

important historical and cultural associations within the rohe defined as “Mai i Miria te Kākara ki Whitireia, whakawhiti te Moana Raukawa ki Wairau ki Whakatū” (“From the place known as Miria te Kākara in the Rangitikei to Whitireia in Porirua, across Cook Strait to the Wairau Valley and the Nelson area.”)



Brees, Samuel Charles, 1810-1865 :Pitone Pa, Wellington, 59. Ref: PUBL-0020-20-1. Alexander Turnbull Library, Wellington, New Zealand. /records/23047273



Brees, Samuel Charles, 1810-1865 :The beach at Te Aro. Ref: A-109-037. Alexander Turnbull Library, Wellington, New Zealand. /records/22527537



Smith, William Mein 1799-1869 :Courtyard in Pipitea Pa at Wellington. Drawn in 1842. Ref: PUBL-0011-04-1. Alexander Turnbull Library, Wellington, New Zealand. / records/23151660



Brees, Samuel Charles 1810-1865 :Aglionby Arms (Burcham's) River Hutt [Between 1842 and 1845] Ref: A-109-024. Alexander Turnbull Library, Wellington, New Zealand. /records/23212340

The area of Te Whaitua o Te Whanganui-a-Tara is intrinsic and integral to the maritime domain of Ngāti Toa and our allied iwi of Te Āti Awa, Ngāti Tama, Ngāti Mutunga and other iwi of Taranaki, Ngāti Rangatahi, Ngāti Koata, Ngāti Rārua and Ngāti Raukawa. We also acknowledge the interests of Ngāti Kahungunu and Rangitāne o Wairarapa east of Te Tuarā Tapu o Te Rangihaeata (Remutaka and Tararua ranges).

Ngāti Toa authority, connection and values with Te Whanganui-a-Tara are constantly challenged, however, it is the vision of Te Rūnanga o Toa Rangatira “kia tū ai a Ngāti Toa Rangatira hei iwi toa, hei iwi rangatira”.

Ngāti Toa, and Te Rūnanga o Toa Rangatira, acknowledge and affirm our responsibility to uphold the mana, rangatiratanga and mauri/mouri of the land, waters, natural resources and people within the rohe as consistent with our kawa, tikanga and values.

The Ngāti Toa Rangatira Treaty Settlement with the Crown acknowledges the legitimacy of the customary rights and interests of Ngāti Toa in the area of Te Whaitua o Te Whanganui-a-Tara. Te Rūnanga o Toa Rangatira will work in partnership with Crown authorities and iwi partners to advance the kawa, tikanga and values of Ngāti Toa within the whaitua of Te Whanganui-a-Tara.

He kupu whakataki

FOREWORD



He kupu whakataki

FOREWORD

Tēnei ka tukuna atu ngā mihi kia koutou katoa.

Te Mahere Wai is a unique indigenous body of work informed from a collaboration and partnership between Taranaki Whānui and Ngāti Toa Rangatira.

Both Taranaki Whānui and Ngāti Toa Rangatira recognise the individual, shared and collective history of both iwi (tribal group) within Te Whaitua o Te Whanganui-a-Tara. In giving effect to the shared kaitiaki (guardian's) responsibilities and whakapapa-based (genealogy-based) relationship with our natural environment, representatives from both iwi groups recognised the need to formulate a unique and unified Mana Whenua voice.

Mana Whenua representatives established Te Kāhui Taiao to enable iwi to discuss, debate and decide their contribution in wānanga (formal discussions to share knowledge) in a culturally safe space. Te Kāhui Taiao worked with iwi members at marae across the rohe (traditional area) to ensure the work reflects the heart and voice of what our people have told us, which informed our approach to our work and includes application of a:

1. Generational-mokopuna (grandchild/grandchildren) model to inform and influence our expected timeframes for change to freshwater bodies. This means that real change happens within the lifetimes of our grandchildren.
2. Holistic approach to freshwater bodies that reflect the interconnectedness of waters that flow from our key water sources, from mountains to coastal waters – known as “mai ki uta ki tai” (from the interior to the coast).
3. Māori worldview based on relationships with the taiao (natural world) – our mountains, rivers and tributaries are our ancestors. Therefore, our role is to protect and respect them as taonga (treasure) through the provision of kaitiakitanga (guardianship) to ensure their survival.
4. Shifting of our relationship from “managing water” to “healing water”, in order to recognise our whakapapa (genealogy) relationships and the respect that water deserves in our lives.

In developing Te Mahere Wai, Te Kāhui Taiao met on a weekly basis, participated in wider Whaitua committee (regional committee) meetings and workshops, and attended and led numerous engagements with iwi members and kaitiaki (guardians). Te Mahere Wai is born out of a shared and collective sense of responsibility for our waters and is informed by Western science, community members, policy advisors

and most importantly the voice and aspirations of our kaitiaki, uri (descendants) and kaumātua (guardians, descendants and elders). This approach ensured our work was implementable and grounded in kaitiaki knowledge (traditional knowledge of guardianship) and practices.

Te Mahere Wai is a Mana Whenua Whaitua Implementation Programme for Te Whanganui-a-Tara. It is a Te Tiriti o Waitangi partnership response specifically aimed at ensuring the voices of local Mana Whenua – Taranaki Whānui and Ngāti Toa Rangitira – sit alongside the voices of Crown partners and non-Māori communities. Te Mahere Wai is a companion document to the mainstream Whaitua Implementation Programme, and they should be considered and actioned together because they share an inter-dependency of knowledge, information and priorities.

Te Kāhui Taiao recognise that this report has been developed within a context of significant system change across New Zealand’s public policy landscape including the Resource Management Act 1991 (RMA) reform, local government reform and a new national direction to protect and improve our rivers, streams, lakes and wetlands. These factors have been considered in the development of Te Mahere Wai and reinforce the expectation that upholding Te Mana o te Wai is the responsibility of regional councils, territorial authorities and the Crown (Mana Kaunihera) which has the

legislative and regulatory authority for change. However, achieving implementation will require collaboration between the Crown, Greater Wellington, territorial authorities and Mana Whenua. This will mean the sharing of power and resources enabling stronger Te Tiriti o Waitangi partnerships.

Te Kāhui Taiao have heard very clearly from their people that their expectations are high and that returning mana to the freshwater system of this whaitua (catchment) is a priority that cannot be achieved alone. We are strongly of the view that Greater Wellington will need to act quickly to build its organisational capability and confidence to fulfil its Tiriti obligations, responsibilities and commitments, starting with authentic relationships with iwi and Māori.

Te Mahere Wai will also look to draw from and support the Te Whanganui-a-Tara Whaitua Implementation Programme.

Formed in early 2020, Te Kāhui Taiao is made of up Taranaki Whānui representatives Sam Kāhui and Kara Puketapu-Dentice, and Ngāti Toa representatives Naomi Solomon and Hikitia Ropata. The group was supported by a project team of highly experienced advisors – Vanessa Tipoki, Aaria Ripeka Dobson-Waitere, Te Rangimārie Williams, Mike Grace, Morrie Love, Phillip Barker, Brent King, Tui Lewis, Gabriel Tupou, Nora Moore, Emily Osborne and others.

Nā mātou tahi me te rere tonu o ngā mihi.



Sam Kāhui



Kara Puketapu-Dentice



Naomi Solomon



Hikitia Ropata

Ngā kai o roto

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tahi

HE KUPU WHAKAMĀRAMA





1 He kupu whakamārama

INTRODUCTION

1.1 Mātauranga Māori

Māori knowledge

Whakapapa (genealogy) is one part of a fundamental value and belief system that is important in traditional Māori society. Whakapapa forms a Mana Whenua (iwi recognised as having mana over a region) understanding of the world around us, and when we build whakapapa connections we come to an understanding and realisation that nature has its own way of doing things, of acting and responding and we, the ira tangata (people), are only one piece of that interconnected and interdependent system. Our responsibility within that system is to maintain and uphold a positive and meaningful whakapapa-based (genealogy-based) relationship with our environment. As Mana Whenua, we are not above the environment – we are tūpuna (ancestors) and uri (descendants).

The korero tuku iho (inherited traditions) of Taranaki Whānui and Ngāti Toa Rangatira tell us that there is no good or bad, punishment or reward for how we act toward one another and our environment. Within our world, there are

only consequences. When we sit in solemnity with our environment, we will hear and feel the vibrations of whakapapa. When we feel those vibrations, we know intimately what must be done.

1.2 Tō mātou Mana Whenua

Our Mana Whenua authority

Within the Treaty of Waitangi Settlement Acts for both Taranaki Whānui and Ngāti Toa Rangatira there is a clear expression of relationship and connection to the waters and environment within Te Whaitua o Te Whanganui-a-Tara.

These Settlement Acts place a codified marker on sites and environments where Mana Whenua have a whakapapa-based relationship with our environment. Acknowledgement of these sites and environments means the Crown and its agents are bound to recognise and provide for whakapapa-based association with our waters. Iwi can thus exercise their mana (authority), and care for the mauri/mouri (life force) of their waters.¹

Mana Whenua and the wider community have much to gain from strengthening our connection to our environment, learning its stories, feeling its vibrations of whakapapa, and giving heed to its identity. These are the foundations that will assist us as we respond to the changing needs surrounding climate change and resilience in Te Whaitua o Te Whanganui-a-Tara.

Mana Whenua see Te Mahere Wai as a crucial means of changing how things were done in the past. We must create new ways of operating, thinking and doing to ensure that te mana me te mouri/mauri o te wai is enhanced for our community of today and our mokopuna (grandchildren) of tomorrow.

1.3 Te Māhere Wai

The Plan for Water

Te Mahere Wai charts a path of innovation – a tupuna pathway that, through its implementation, will see the change in our collective behaviours that ensure within this takiwā/rohe (district/traditional area) we may be closer to a whakapapa-based relationship with our waters.

Te Mahere Wai seeks to correct the relationship we have with our environment through the articulation of our ways of being, which are sourced from our Mana Whenua relationship with Te Whaitua o Te Whanganui-a-Tara.

Te Mahere Wai challenges us as Mana Whenua to remain true to who we are and apply that in a manner consistent with our respective tikanga (customs) and kawa (traditional protocols). With our partners and friends, we will recreate something that others may see as unique, but, to us, will be a mirror of our not-so-distant past.

Te Mahere Wai establishes a Te Oranga Wai measurement framework that assesses Mana Whenua confidence in the mauri/mouri of our wai and enables the expression of our kaitiakitanga.

¹ Two dialect variants.

rua

WHAKARĀPOPOTOTANGA HORO



2 Whakarāpopototanga horo

EXECUTIVE SUMMARY

Te Mahere Wai is the guiding framework developed by Te Kāhui Taiao and reflects our Mana Whenua perspective and direction in giving effect to the National Policy Statement for Freshwater Management 2020 (NPSFM 2020) within Te Whaitua o Te Whanganui-a-Tara.

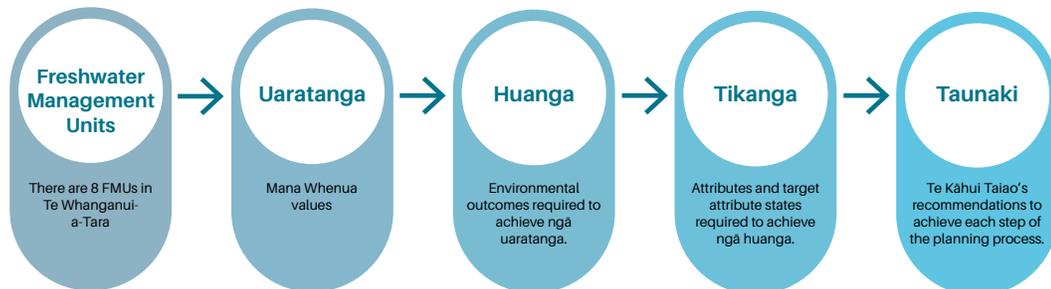
This document establishes the mana whakahaere (authority to manage) of our iwi in the management of our fresh and coastal waters for Whaitua Te Whanganui-a-Tara.

It is our intention that the issues raised in Te Mahere Wai are addressed through the application of our kaitiakitanga (duty of care as guardians) and associated tikanga (practices) and mātauranga ā-iwi (iwi knowledge).

Te Kāhui Taiao have worked with Mana Whenua, kaitiaki (guardians) and kaumātua (elders) in the region to capture values and

aspirations for Te Whanganui-a-Tara. This includes setting down a Taranaki Whānui and Ngāti Toa Rangatira approach to giving effect to Te Mana o te Wai, which applies the hierarchy of NPSFM 2020 obligations, adopts an integrated approach “mai uta ki tai” (from mountain to sea) and describes how mātauranga Taranaki Whānui and Ngāti Toa Rangatira can be utilised in freshwater management. It includes recommendations that will inform future plan changes and new management frameworks that implement our values.

Te Mahere Wai: Planning and decision-making process



Te Kāhui Taiao recognise that, in order to give effect to the aspirations of Taranaki Whānui and Ngāti Toa Rangatira uri as it relates to wai, there is a need to create an alignment between

Te Mahere Wai and the National Objectives Framework (NOF). This approach recognises the two-world view and knowledge systems that Mana Whenua have to navigate.

The key NOF process steps in Te Mahere Wai are set out below. They each have their own section in this document.

-
1. **Ngā take** – Summarising key water issues held by Mana Whenua for the whaitua.

 2. **Ngā wai whakatupuranga** – Identifying and describing long-term visions for the whaitua from a Mana Whenua perspective.

 3. **Te Mana o te Wai** – Articulating statements about what Te Mana o te Wai looks like in Te Whanganui-a-Tara.

 4. **Wāhi Wai Māori** – Identifying eight spatial areas called Freshwater Management Units (or FMUs) for the region.

 5. **Uaratanga** – Identifying Mana Whenua freshwater values (uaratanga) that apply to an FMU or part of an FMU in the region.

 6. **Huanga** – Setting environmental outcomes (huanga) for each uaratanga for each of the eight FMUs.
 - 6.1. **Tikanga** – Identifying attributes (tikanga) for each uaratanga.
 - 6.2. **Te Oranga Wai** – Setting target attribute states to support the achievement of the environmental outcomes (huanga).
 - 6.3. Addressing environmental flows and levels to support water quantity environment outcomes.

 7. **Ngā Taunaki** – Outlining a series of recommendations to Greater Wellington including future developments through plan changes.

Ka rite te wai nei ki wai Kimihia

“The water here is like that of Kimihia.”

Taylor records that, when Turi settled at Pātea, he had a spring that was said to be as good as the one named Kimihia in Hawaiki. No 1118, P 183, Ngā Pepeha a Ngā Tūpuna VUW Press 2001.

toru

TE MANA O TE WAI



3 Te Mana o te Wai

THE MANA OF WATER

Te Mana o te Wai ensures that our Mana Whenua responsibilities and interests are voiced, heard and acted upon.

Iwi have always asserted their right to sit at the table as a partner to the Crown including regional councils. Unfortunately, this model of partnership has had limited success largely due to the Crown's (and regional councils') lack of desire and ability to appropriately provide for iwi/Māori rights and interests. In addition, regional councils have, through regulation, policy, monitoring and management practices, assumed sole authority and responsibility for upholding the health and wellbeing of our waters. To date, poor legislation has failed to recognise the rights and interests of iwi and hapū in the freshwater space.

When Mana Whenua are afforded a space within the governance and management of our waters, regional councils fail to provide the necessary resourcing meaning that any progress made is fatally flawed due to the lack of funding. The assumed authority that regional councils have had over the governance

and management of water undermines rangatiratanga and has played a significant part in why our future generations will inherit a significantly degraded freshwater environment.

Mana Whenua demand a change to the status quo. Achieving Te Mana o te Wai requires active and meaningful participation and partnership with Mana Whenua – there is no other remedy. For this reason, Mana Whenua see the National Policy Statement for Freshwater Management 2020 (NPSFM 2020) as a “game changer” in how we as iwi Māori participate and lead in the governance and management of freshwater today and into the future.

The NPSFM 2020 requires the management of freshwater through a framework that gives effect to the fundamental concept of Te Mana o te Wai. Te Mahere Wai is an expression² of Te Mana o Te Wai for Taranaki Whānui and Ngāti Toa Rangatira.

² This is an expression of Te Mana o Te Wai. However, it is not the only expression.

3.1 He Whakapuaki Kaupapahere ā-Motu National Policy Statement for Freshwater Management

Under the NPSFM 2020, regional councils must now **actively involve** tangata whenua (Mana Whenua) in the practice of freshwater management, which includes decision-making processes.³ This directive from central government is irrefutable. The change in approach is supported by a set of legal requirements that direct regional councils to actively involve Mana Whenua in the development of their regional plan, the Proposed Natural Resources Plan (PNRP).

This is a significant shift from Greater Wellington's earlier engagement with whaitua in the past. For example, for the Te Awarua-o-Porirua and the Ruamāhanga Whaitua, Greater Wellington was only required to **reflect** tangata whenua values and interests in freshwater management and decision-making.

The new national policy statement also says that councils **must give effect** to Te Mana o te Wai.⁴ Te Mana o te Wai in this context has six principles⁵ that describe how tangata whenua and the wider community can be involved to inform freshwater management in the future. These six principles are outlined below:

- **Mana whakahaere:** the power, authority and obligations of tangata whenua to make decisions that maintain, protect and sustain the health and wellbeing of, and their relationship with, freshwater.
- **Kaitiakitanga:** the obligation of tangata whenua to preserve, restore, enhance and sustainably use freshwater for the benefit of present and future generations.
- **Manaakitanga:** the process by which tangata whenua show respect, generosity and care for freshwater and for others.
- **Governance:** the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and wellbeing of freshwater now and into the future.
- **Stewardship:** the obligation of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations.
- **Care and respect:** the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

³ See clause 3.4 of the NPSFM 2020.

⁴ See Policy 1 and clause 3.2(2) of the NPSFM 2020.

⁵ Clause 1.3(4) of the NPSFM 2020.

3.2 Mana whakahaere

Authority to manage

Taranaki Whānui and Ngāti Toa Rangatira hold Mana Whenua authority over Te Whanganui-a-Tara (they are the iwi recognised as having mana over the region). Te Kāhui Taiao expect and anticipate that Greater Wellington will formalise power sharing with Mana Whenua through tools enabled by the RMA. These power-sharing tools include such instruments as joint management arrangements, mana whakahono ā rohe and transfer and delegations of powers and resources, as a way of giving effect to mana whakahaere (authority to manage) and Te

Mana o te Wai. These are key provisions that every regional council must investigate when determining how to involve Mana Whenua in freshwater management.⁶

As such, whilst mana whakahaere is not a phrase that is generally adopted by Taranaki Whānui and Ngāti Toa Rangatira, it does reflect the need to involve Mana Whenua in decision-making that affects the mauri/mouri (life force) of freshwater, and the relationship between Mana Whenua and freshwater.

3.2.1 Te whakatau take me te Mana Whenua

Partnered decision making with iwi recognised as having authority

There are varying models adopted by Mana Whenua throughout Aotearoa/New Zealand that express decision-making at a partnered (or more) level.

In terms of partnered decision-making for the new regional freshwater plan, the Te Kāhui Taiao model is one of a variety of models that could be adopted by Mana Whenua to ensure partnered decision-making. At the very least, partner decision-making models must:

- ensure at least 50% Mana Whenua representation on any decision-making bodies, and
- ensure adequate resourcing of Mana Whenua to participate in the process.

⁶ See clause 3.4(3) of the NPSFM 2020.

3.3 Te whakatāhuhutanga o ngā herenga o Te Mana o Te Wai Hierarchy of Te Mana o Te Wai obligations

Te Mana o te Wai sets out a hierarchy of obligations, which means that all decision-making must prioritise the health and wellbeing of water before providing for other consumptive uses.⁷ The hierarchy is:



1. First, to protect the health and mauri/mouri of the water,



2. Second, to provide for the essential human health needs, such as drinking water, and



3. Third, to enable people and communities to provide for their social, economic and cultural wellbeing, now and in the future.

These considerations have been foremost in all of Te Kāhui Taiao’s aspirations, values, outcomes and recommendations and resonate with Te Ao Māori world view. While Te Mana o

te Wai obligations are set at a national level, Te Kāhui Taiao and Mana Whenua are defining what it should look like at a local level.

3.4 Mahinga kai – Te Karu Wai Tai o Te-Ika-a-Māui Harvesting food in the saltwater eye of the fish of Maui (the Wellington Harbour region)

Te Mahere Wai addresses water quality and quantity requirements of the NPSFM 2020 through the Mana Whenua relationship with mahinga kai.

Mahinga kai is a compulsory national value in the NPSFM 2020. The PNRP states that the viability of mahinga kai (whether the species, the habitat or the activity of cultural harvest) is recognised as the Mana Whenua lens and cultural determinant for assessing the mauri/mouri of Te Whanganui-a-Tara water quality and

⁷ See clause 2.1 of the NPSFM 2020.

quantity. The ability of Mana Whenua to fulfil their role as kaitiaki of mahinga kai and express their manaakitanga (hospitality, generosity and care for others) to others through provision of mahinga kai to manuhiri (honoured guests at customary events) are central constructs to Mana Whenua identity and wellbeing.

In many cases, Mana Whenua have been unable to maintain their kaitiaki relationships with mahinga kai due to loss or contamination of species and loss of habitat.

Te Mahere Wai uses a unique Mana Whenua assessment framework called Te Oranga Wai to measure water quality and quantity and set target attribute states and timeframes for improvement against Mana Whenua huanga (outcomes) across eight spatial units. Te Mahere Wai and Te Oranga Wai assessment models focus on the wellbeing of mahinga kai, a compulsory national value and key aspect of understanding Te Mana o Te Wai. Mahinga kai is a uniquely indigenous construct that explains our relationship with water and te taiao (the natural environment).

Mahinga kai is not a value that is able to be measured by regional councils or Crown agencies. Regional councils rely largely on Mana Whenua measures, limits and targets in order to meet the requirements of the NPSFM 2020 and to give effect to Te Mana o te Wai. To achieve mahinga kai huanga, Mana Whenua must be able to exercise mana whakahaere and implement mātauranga-a-iwi monitoring frameworks and the transfer of that information into regulation.

Te Whanganui-a-Tara is Te Karu Wai Tai o te Ika, the salty eye of Te Upoko o Te Ika a Maui (the head of the fish of Maui), the freshwater eye being Wairarapa Moana. A Mana Whenua view of water is formed through the eye of the fish and the health and wellbeing of our harbour. We understand the health and wellbeing of our water through understanding the health

and wellbeing of our fish and taonga species (highly esteemed species), and the places that they live. We assess their health and that of the water through our mahinga kai cultural harvest practices. These practices are informed by the wairua and whakapapa (genealogy) connections we have with our awa tupua (ancestral rivers), our water, our environment and the knowledge passed down to us, that informs our kaitiakitanga relationships.

In summary:

- Our kaitiaki relationship with water is through mahinga kai.
- Mahinga kai are the places where we practise our cultural harvest.
- Mahinga kai are the taonga species; plants, birds, fish and animals that we provide for as kaitiaki.
- Mahinga kai are the activities that we undertake as kaitiaki.
- Mahinga kai activities enable us to maintain and transfer kaitiaki knowledge between generations.
- Mahinga kai supports cultural wellbeing through manaakitanga; the provision of kai to our guests.
- Mahinga kai enables us to assess the wellbeing of water and all that it supports; including people.
- Te Oranga Wai is a wai ora assessment framework that measures the health of our environment through Te Karu o Te Ika a Māui; mātauranga ā-iwi, the knowledge held by our people and observed through time, and our seasonal interaction with our waters.

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NGĀ TAKE



4 Ngā take

THE ISSUES

Ngā take are the key freshwater issues of Mana Whenua in Te Whanganui-a-Tara. Te Kāhui Taiao consider that a completely new framework for freshwater management is required so that Greater Wellington tackles water degradation “head on”, provides equity for Mana Whenua partners, and remedies the appalling lack of investment in the region’s waterways.

Greater Wellington and territorial authorities have made it clear that they are under-resourced to maintain water quality. This limits their monitoring and compliance role, and there is no unifying strategy to address water quality at a whaitua scale.

As a result, Mana Whenua have not been able to maintain their kaitiaki relationships with their awa (river). This is largely due to a lack of equitable partnership and resourcing, the

loss or contamination of species and the loss of habitat. This has had a significant impact on Mana Whenua who have been prevented from exercising their rangatiratanga (chiefly autonomy) and manaakitanga (hospitality, generosity and care for others). The degradation of waterways, dwindling mahinga kai stocks and increasing limited access to sites mean that iwi and hapū are no longer able to host or feed manuhiri (visitors). A fundamental value of Māori society is now at risk.

4.1 Te kounga o te wai

Water quality

Water quality is linked to the mauri/mouri (life essence) of rivers, streams and coastal waters. Water quality is impacted by point source discharges and leaching and run-off from urban and rural sources. Pollutants include phosphorus and nitrogen (and the resulting increase in algal growth), sediment, effluent, heavy metals, bacteria, organic outputs, and hydrocarbons. Water abstractions also impact on water quality through loss of dilution factors.

Estuaries and coastal mahinga kai areas are of particular significance to Mana Whenua and suffer the worst impacts of uncontrolled sediment loss to water. Sediment also has a disproportionate effect on the many small streams that are habitat for mahinga kai and that are traditional kohi kai (food gathering) places.

4.2 Ngā tukunga wai paruparu

Wastewater discharges

Protection of the mauri/mouri and the ecological values of individual waterways is a priority for Mana Whenua. Discharges can impact on the ability of a waterway to undertake its role in supporting life contained within and around it.

Discharges of human and animal waste diminish the mauri/mouri of fresh and coastal waters. The flow of contaminated water through the environment impacts all Mana Whenua values, undermining whakapapa (genealogy) relationships with ngā atua (gods) to support hauora (wellbeing) through their interactions with each other and te ira tangata (people).

Wastewater directly impacts the mana of water and waterbodies by limiting its ability to cleanse itself and provide for other forms of life. The awareness that water and waterbodies are degraded is the cause of immense grief to Mana Whenua who associate their own wellbeing and identity directly with that of their ancestral wai (waterways), awa and takutai (coast).

The presence of human waste in fresh and coastal water has undermined the cultural identity of Mana Whenua, by disabling their relationship with their takiwā (traditional region), and in many instances completely halting cultural practices and the transmission of intergenerational knowledge.

The pervasive presence of human waste in waterbodies across the whaitua is the singular most significant issue for Mana Whenua and the matter that should be given greatest priority by Greater Wellington. Te Mahere Wai measures Mana Whenua values for fresh and coastal water. These values are fundamentally different

than those used in the measurement of water by Western science monitoring tools. This difference is most clearly seen within the tapu (restricted) – noa (available) construct utilised by Mana Whenua to assess water quality.

To Mana Whenua, the mere presence of human waste (ie, anything that comes from the body; blood, human ashes, hospital and mortuary waste, and sewage) contaminates water and creates a spiritual and cultural risk to community.

Water becomes tapu for food gathering or customary cleansing through contamination by human waste. Its use can only be restored through the removal of human waste. This is clearly different from models that show degrees of contamination for specific contaminants but are not conclusive in directing how communities should respond to the individual and cumulative effects of contaminants.

The impact of wastewater discharges into the coastal environment is both significant and not well understood, and this is particularly true for mahinga kai in the receiving marine environment.

Sewage leak spill, Woodward Street, Wellington –
Photo: Stuff Limited



4.3 Ngā tukunga rerenga waipuke

Stormwater discharges

Stormwater carries a large array of contaminants and their presence directly impacts on the cultural identity of Mana Whenua. During high rainfall events, stormwater systems transport large volumes of water quickly to streams and rivers, causing rapid increases in water levels that have a detrimental impact on taonga species, fish habitat and bank stability.

Te Kāhui Taiao are particularly concerned about cross connections between sewage and stormwater that deliver sewage directly to waterways and groundwater. The absorption of stormwater into wastewater pipes also routinely overwhelms treatment plants, forcing direct discharges of untreated sewage to fresh and coastal waters.

4.4 Ngā tangohanga wai

Water takes

The flow, level and variability of flows in a watercourse is key to supporting the uaratanga (value/values) of Mana Whenua. If a river cannot express its character at a range of flows over the seasons, then Te Mana o te Wai cannot be given effect to.

Te Kāhui Taiao are very concerned about the water allocation process of regional councils. There is limited monitoring of conditions of consents, or flows, and very little enforcement in place for those who break the rules. Low flows have a direct impact on the mauri/mouri of freshwater and the impacts of low flow on mahinga kai species and habitat, customary use and human health are significant.

Water takes can also have an impact on the hydrology and ecology of local water bodies, and water quality. Low flows limit fish passage and habitat, increase temperature and concentrate pathogens that harm mahinga kai species.

Te Kāhui Taiao are also concerned about the cumulative effects of current permitted takes on smaller streams. Small streams are particularly vulnerable during low flow, and even minor changes to conditions or use can have significant effects on mahinga kai. Small streams are not monitored and low-flow settings are based on national modelled data and are therefore not specific to the individual stream.

Inefficient use of water can have a disproportionate impact on the smaller streams, including permitted takes for farms and lifestyle blocks. Diminished flow and increases in water temperature can promote nuisance algal growth and this directly impacts on Mana Whenua access for spiritual and ceremonial purposes, including the availability of wai ora (living water) for tohi (baptism).

Identifying acceptable limits for our waterways is therefore essential to maintaining their ecological and cultural health, and Mana Whenua have a key part to play in this.

4.5 Ngā tangohanga wai tāone

Municipal takes

Water takes are also an issue for Te Kāhui Taiao and Mana Whenua. Water abstracted in Te Whanganui-a-Tara is predominantly for domestic use and industrial use. Te Awa Kairangi, Wainuiomata and Ōrongorongo rivers and the Waiwhetū Aquifer provide water for municipal use. These takes are also mixed and piped to Porirua. The result of mixing is that the mauri/mouri and mana of each awa is significantly reduced. In addition, there is

little public recognition for the role these awa play in providing clean drinking water to the wider region.

While recognising that water take consents are already over-allocated, Te Kāhui Taiao demand that a rāhui (temporary prohibition) be placed on any new consent applications until equity issues are addressed and a better process is developed for issuing consents.

4.6 Ngā waiheke

Smaller streams

Āku waiheke describes the smaller streams in the catchment and it literally means descending waters.

Te Kāhui Taiao are concerned that small waterways and drains have little protection despite their ecological value and function. First order streams in Te Whanganui-a-Tara represent 70% of the lineal length of all freshwater bodies in the region.

Smaller water bodies are disproportionately affected by the cumulative effects of permitted water takes, discharges from old septic wastewater treatment systems and from stock access and pugging.

Smaller water bodies have a value disproportionate to their size both individually and collectively. This is not recognised in existing freshwater management practice. Taken as a group, they carry a significant proportion of total water volume in the catchment and are more important as habitat and breeding areas than mainstem, high-flow environments. Traditionally, these were the places that supported kāinga (home places) for domestic supplies of water as well as mahinga kai, ritual use and other purposes. They have effectively lost their identity and mana through urban and sub-urban development.



Āku waiheke are imbued with layers of historical, cultural and spiritual meaning of the many generations baptised in ngā wai heke (small water bodies), ngā manga (streams) and awa iti (small rivers) that ran past kāinga. Indigenous fish rely on the rich food sources, riparian values (shading and temperature) and diverse morphology of smaller water bodies and estuaries for spawning and habitat. These are also the places where they would typically

be harvested according to the season and the all-important transfer of customary knowledge would occur from one generation to the next.

The small estuaries of these streams and the shellfish beds adjacent to them are particularly important for mahinga kai and are the places most affected by the cumulative effects of non-point source discharge of sediment, pathogens and nutrients throughout the catchment.

4.7 Ngā wai huna

Concealed waterbodies

Ngā wai huna are concealed waterbodies and they include aquifers.

In Wellington City, all urban streams have portions that are piped and have lost their identity and natural form as a result. This has disconnected Mana Whenua from their whakapapa relationships with these important streams as their values are no longer visible like Ahumairangi in Tinakore, where five streams form. These processes have had the effect of concealing rather than diminishing their mana as important waterbodies and receiving waters for Te Whanganui-a-Tara. Recognition of these waterbodies is required to enable communities to reconnect with their local waterways and support their health.

The aquifers in Te Awa Kairangi are highly valued for municipal water supply and the essential contribution they make to human health and wellbeing. Aquifers, springs, rivers and wetlands are naturally connected, so when there is pressure on water quality or water levels in the mainstem rivers, there is the risk that groundwater levels are also affected. These aquifers need to be carefully monitored and managed to eliminate the risk of saltwater intrusion brought about by over-abstraction,

and to ensure they retain their wai māori (freshwater supply) values and core ecological function.

Clean water is measured by mauri/mouri, wairua and connection to the atua (ancestral elements). In the Māori world, piped water does not have the same level of protection as other wai (water) as it cannot access atua like Tane (ancestor of terrestrial element) and Tangaroa (ancestor of water element). It should also be noted that piped streams are typically considered part of the stormwater network and are not recognised for their ecological values by the Proposed Natural Resources Plan (PNRP) or the RMA. Therefore, should the piped stream be disturbed by an activity (for example, construction), there is no requirement for ecological values to be considered or even for Greater Wellington ecologists to be notified.

In addition, badly designed or managed weirs, piped streams and culverts pose a problem for the movement of native fish species throughout a catchment by blocking upstream and downstream passage. The rectification and retrofitting of fish passage structures to existing culverts, dams and weirs is required.

4.8 Ngā ritenga kaupare waipuke Flood protection practices

Mana Whenua struggle to have a place at the table when dealing with the current flood protection framework, which relies heavily on historical engineered approaches to flood risk. The reliance on an engineering model marginalises the knowledge and values of Mana Whenua and their management of awa. Many of the key flood protection activities are identified as high potential impact activities and require discretionary activity resource consent under the PNRP. These methods often directly impact on the remaining natural form and character of the region's rivers and streams. High-risk activities destroy mahinga kai species and habitat, āhua (natural character), Mana Whenua sites of significance and the mauri/mouri of the awa. Often species like tuna (eels), fish, kākahi (freshwater mussels) and kōura (freshwater crayfish) are dug out with sediment and die on the riverbanks or are crushed by the digging equipment.

The development and maintenance of flood protection infrastructure affects mauri/mouri through loss of natural morphology (shape) and flow patterns of waterbodies.

The channelisation of rivers and streams for flood protection directly diminishes Te Mana o te Wai, constraining the ability of the awa to express its identity through form and character.

Te Awa Kairangi and Wainuiomata have both been significantly modified over the years and their design channels are constrained and there is not enough room for scour, deposition, erosion or accretion to occur. By confining and straightening these waterbodies, the diversity of mahinga kai habitat is reduced, as are pools and areas for customary or recreational use. Continuous works in the bed of rivers and estuaries (such as grading and gravel removal) affects mauri/mouri through the release of sediment and contaminants. In particular, the continuous release of fine sediment from flood protection work is directly related to the release of contaminants and the resulting proliferation of toxic algae.

Te Kāhui Taiao expect that Greater Wellington will undertake best practice in all future river management including, in particular, those length of rivers that they own.



Teri Puketapu inspecting a section of the Waiwhetu Stream – Photo: Stuff Limited

4.9 Ngā mātāpuna me te pānga o te whanaketanga me ngā ngahere nā te tangata i whakatō

Headwaters and impacts of development and plantation forestry

Te mātāpuna (headwaters) are recognised as the source of wai ora, or pristine water. They are critically important for Māori because of their high-water quality. Protection of the source of drinking water must be prioritised to guard against water contamination and illness. These sites often lack recognition and protection because they are more likely to be remote and forested. Their location does not necessarily give them protection as their steep morphology and higher rainfall makes them vulnerable to soil loss if not treated with respect.

In addition, as reported by Greater Wellington, there is little regulatory oversight, particularly around plantation forestry. The effects of clear-fell forestry and the significant impact of sedimentation and chemical application on these areas expose headwater catchment areas to extended periods of sediment run off and contamination.

Te mātāpuna are also affected by poorly designed greenfield housing developments. Te Kāhui Taiao consider that piping, infill or reclamation of mātāpuna should be avoided.

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HE WAI MŌ NGĀ WHAKATUPURANGA



5 He wai mō ngā whakatupuranga

WATER FOR GENERATIONS TO COME

He wai mō ngā whakatupuranga are the moemoeā (long-term vision/aspirations) of Te Kāhui Taiao for the water bodies and freshwater ecosystems in the region.⁸ We give a generational perspective of how Mana Whenua envisage the waterways might look from a generational approach. It is about our mokopuna (grandchildren). We have the expectation that our mokopuna will see real improvement in water quality in their lifetimes based on the implementation of the recommendations we have laid down in Te Mahere Wai.

These long-term visions set goals that are ambitious, reasonable and timebound, and outline the wishes of Mana Whenua for waterbodies and how they foresee the catchment could look in the future.⁹ It is our expectation that Greater Wellington will assess whether these moemoeā are being met and that he wai mō ngā whakatupuranga form objectives in the Regional Policy Statement.

Te Kāhui Taiao have set out a series of vision statements for waterbodies and catchments in Te Whanganui-a-Tara for the short, medium and long term. These have been taken through into our Te Oranga Wai model for assessment of change required and the establishment of timeframes for implementation.

8 See clause 3.3(3) of the National Policy Statement for Freshwater Management 2020 (NPSFM 2020).

9 See clause 3.3 long-term vision for freshwater in NPSFM 2020.



Māori children collecting sea eggs in Wellington Harbour (circa 1979) - Photograph taken by Ian Mackley. Dominion Post (Newspaper): Ref: EP/1979/0120/11a-F. Alexander Turnbull Library, Wellington, New Zealand. /records/22710537

Pēpē me ngā tamariki (short term 0 – 10 years)

Babies and children (short term 0 – 10 years)

- All freshwater decision-making recognises and treats waterbodies as having their own intrinsic values and identity including spiritual dimensions immediately.
- Te mātāpuna (headwaters) are wai ora in the Te Awa Kairangi, Akatārawa, Pākuratahi, Whakatikei, Mangaroa, Ōrongorongo and Wainuiomata forested catchments within 10 years.
- Mana Whenua have safe access to wai ora sites and can protect the cultural safety of the wai within 10 years.
- Pēpē (baby/babies) can be baptised in the Te Awa Kairangi, Ōrongorongo and Wainuiomata forested catchments in the short term.
- Waiora mai i uta ki tai (life-giving waters from mountains to sea) are identified and protected within 10 years.
- Tamariki (child/children) can safely accompany whānau (family group) in activities that connect them with their water, like waka ama (outrigger canoes), kōhi kai (food gathering) and mahi pārekareka (relaxation and recreation) in Te Awa Kairangi, Wainuiomata and Ōrongorongo within 10 years.
- Tamariki can safely swim at all traditional swimming places, like the Double Bridges, Kaitoke, Māoribank, Taitā Rock, Pākuratahi Forks and the Akatārawa and Pākuratahi Awa, within 10 years.
- Greater Wellington delegates decision-making power to Mana Whenua for identified sites in the short term.

Rangatahi me ngā mātua/pakeke (medium term 10 – 30 years)

Children and parents (medium term 10 – 30 years)

- All waterbodies in Te Whanganui-a-Tara are suitable for kaukau (swimming) by 2041.
- Native fish have access to move freely up and down the entire length of the catchment to complete their life cycle, within 20 years.
- Iwi can safely harvest and eat (identified species) of local mahinga kai throughout the catchment in 20 years.
- Within 20 years, mahinga kai species are plentiful enough in all catchments for long-term harvest including for manuhiri and to exercise manaakitanga.
- Tamariki support mātua, tuākana and whānau, hapū and iwi to restore and protect awa (rivers) using tools like iwi kaitiaki plans (iwi guardianship plans), within 20 years.
- Pakeke (adults) are active in paid mana whakahaere roles overseeing monitoring, management and improvement of wai ora in 20 years.
- Taiohi (adolescents/young adults) are active kaitiaki and kaikohikai in the wider catchment and are inducted into wai ora monitoring programmes like Ngā Mangai Waiora (ambassadors for water) within 20 years.

Ngā pakeke me ngā kaumātua (long-term 30+ years)

Adults and elders (long-term 30+ years)

- All freshwater bodies in Te Whanganui-a-Tara are wai ora within 100 years.
- All estuarine areas are healthy and functioning within 100 years.
- The āhua (natural character) of the Korokoro, Kaiwharawhara, Te Awa Kairangi, Wainuiomata, and Ōrongorongo awa and Parangārehu Lakes (Parangārahu Lakes is also an acceptable spelling alternative) is fully restored in the long term.
- Pēpē can be baptised in at least three wai ora associated with their whānau in the long-term.
- Taiohi can access water in Te Whanganui-a-Tara for whakarite (preparing for an important activity/event) and whakawātea (cleansing).
- Mana Whenua are the lead agency and regulator for protection and restoration of wai ora in 20 to 50 years' time.



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⁶ He whakapuaki mō Te Mana o te Wai

TE MANA O TE WAI STATEMENTS

Te Kāhui Taiao have drafted a number of statements that outline a local approach on how to give effect to Te Mana o te Wai in Te Whanganui-a-Tara.¹⁰

These statements are important and inform other parts of Te Mahere Wai. In Te Whanganui-a-Tara, the care of freshwater gives effect to Te Mana o te Wai when:

¹⁰ See clause 3.4(1)(a) of the NPSFM 2020.

1. Mana Whenua are able to exercise kaitiakitanga and lead freshwater and coastal management decision-making.
2. Mana Whenua are able to implement and practice traditional rangatiratanga management techniques, for example, rāhui to protect the mana (dignity and esteem) and mauri/mouri of water.
3. Mana Whenua are resourced to be active and have an integral presence as Ngā Mangai Waiora (ambassadors for water) in whaitua monitoring and management. Te Kāhui Taiao guidance on how to implement Ngā Mangai Waiora is attached as Appendix 3.
4. Mana Whenua have a visible presence in the management of mahinga kai and riparian and coastal areas through nohoanga (camp) and other cultural practices.
5. The mauri/mouri and life-supporting capacity of water in Te Whanganui-a-Tara enables the customary practices of Mana Whenua such as tohi (baptism), whakarite (preparing for an important activity/event), whakawātea (cleansing) manaakitanga (hospitality) at a range of places throughout the catchment.
6. Mana Whenua are able to serve manuhiri fresh and coastal mahinga kai species by 2041.
7. The wellbeing and life of the wai (water) is primary.
8. The mana of water as a source of life is restored and this includes regarding and respecting all waterbodies (including āku waiheke (small streams)), repo (wetland) and estuaries as living entities, and naturalising, naming, mapping and protecting each.
9. Freshwater is cared for in an integrated way through mai i uta ki tai, from te mātāpuna (the headwaters) to the receiving environments like the Parangārehu Lakes, Hinemoana (the ocean), Te Whanganui-a-Tara (Wellington Harbour) and Raukawakawa Moana (the Cook Strait).
10. All freshwater bodies are managed holistically to allow them to exhibit their natural rhythms, natural form, hydrology and character.
11. Freshwater bodies are able to express their character through a range of flows over the seasons.
12. There are sufficient flows and levels to support connectivity throughout mai i uta ki tai and between rivers and their banks to support spawning fish.
13. Key areas like te mātāpuna, estuaries and repo are prioritised for protection and restoration so that they are once again supporting healthy functioning ecosystems.
14. Mahinga kai species are of a size and abundance to be sustainably harvested.
15. Areas that are not currently able to be harvested (for example, coastal discharge areas and others) are able to be harvested by 2041.
16. Te Awa Kairangi, Waiwhetū, Korokoro, Kaiwharawhara, the Wainuiomata River and its aquifers are declared "Te Awa Tupua" (an indivisible and living whole, incorporating all its physical and meta-physical elements) and given "legal personhood" in legislation.
17. Te Awa Kairangi, Wainuiomata and Ōrongorongo are publicly acknowledged for the part they play in supporting human health through their contribution to the municipal water supply, including for Porirua City.

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TE NUI O TE WAI



7 Te nui o te wai

WATER QUANTITY/ABUNDANCE

7.1 He anga hou

New framework

The NPSFM 2020 has changed the way that water quantity is addressed. The previous policy only referred to minimum flows and allocation limits, but this has now been broadened to include environmental flows and levels and variability of flows.¹¹ These flows and levels could include cultural flows that must be accounted for when setting allocation limits.

The new hierarchy of obligations also changes the way that water quantity decision-making is defined.

Te nui o te wai is a key uaratanga (value/values) for Te Kāhui Taiao in Te Whanganui-a-Tara. The current water allocation system does not support this value. A new water allocation framework is required that gives effect to Te Mana o te Wai and utilises mātauranga Māori

in the development of policy, planning and monitoring, including identifying environmental flows, levels and limits for awa (river) within Te Whanganui-a-Tara.

Te Kāhui Taiao have proposed a new allocation framework that reinforces the NPSFM 2020 hierarchy of obligations that puts the river first, the needs of people second and all other uses third.

¹¹ Clause 3.6 of the NPSFM 2020.

7.2 Te mauri ora o te wai (Taumata Tuatahi)

The life force of the water (Level One)

Water is provided to the awa first to support its mauri/mouri.

Water is the lifeblood of Papa-tū-ā-nuku (the element of earth), and it is essential that flows support the mauri/mouri of water to ensure the health of all atua and tūpuna (ancestors). Not only should Taumata Tuatahi provide for Papa-tū-ā-nuku but flows should consider how they can support the realm of all our atua, including Tangaroa and Tāne-mahuta. This will in turn support Te Mauri/Mouri Ora o te Wai.

Mana Whenua know through kaitiaki observations that water flows are depleting. Te Awa Kairangi, Wainuiomata and Ōrongorongo are all used for municipal supply and this has had a significant impact on te nui o te wai. Āku waiheke (small streams) are also particularly susceptible to low flow due to cumulative water takes and the impacts of climate change. There is also limited data available from Greater Wellington to inform limit setting, flows and levels and, therefore, Te Kāhui Taiao recommend that a **precautionary approach** for water allocation is taken until more accurate baseline data is available.

Te Kāhui Taiao recommend that a working group is established to investigate ways to reduce takes and increase flows that include:

- a. alternative water storage options, both reservoirs and individual water storage,
- b. community education to “reduce, reuse and recycle” water,
- c. water metering and water charges,
- d. tax rebates as an incentive for efficient water use,
- e. reducing commercial takes during low flow,
- f. fixing network leaks,
- g. network upgrades at water treatment plants, and
- h. harvesting water at high flow.



7.3 Whakapapa (Taumata Tuarua)

Traditional place of water in creation and human life (Level Two)

Water is available to support essential human health needs.

Taumata Tuarua is the second requirement in the hierarchy of obligations and, in order for it to be in place, there must be a sufficient amount of water available to support the essential needs of human beings. This includes the physical health of humans and ensures the continuation of whakapapa (genealogy) that extends from Papa-tū-ā-nuku through awa, the present-day generation and all future generations. Essential needs of human beings include:

- quality drinking water to support health including for marae and papakāinga,
- water to maintain cleanliness/hygiene, and
- water that supports spiritual and mental health practices.

Again, without the required data, Te Kāhui Taiao is unclear about the quantum of water required to meet whakapapa and recommends a precautionary approach to setting takes and limits is adopted until this data is available.

7.4 Ngā Mahi a ngā Tūpuna (Taumata Tuatoru)

Traditional practices of the ancestors (Level Three)

All other uses that do not impact on the mauri/mouri of the water quality.

Te Kāhui Taiao consider that there should be no additional allocation of water beyond what is currently consented until environmental flows, levels and limits are set for the whaitua (catchment). This could also include cultural flows. This could be achieved through a number

of approaches that include a moratorium on any further water takes, a “sinking lid” approach and prohibiting the transfer of allocated water.

Te Kāhui Taiao have not had the opportunity to articulate what cultural flows for the catchment might look like. This has been picked up as a recommendation in the following section.



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NGĀ TAUNAKI KATOĀ



8 Ngā taunaki katoa

Ngā taunaki are the recommendations made by Te Kāhui Taiao to support Mana Whenua values and environmental outcomes for ngā awa in Te Whanganui-a-Tara.

8.1 Ngā mōtika me ngā pānga

Rights and interests

1. The rights and interests of Taranaki Whānui and Ngāti Toa Rangatira in freshwater are acknowledged by Greater Wellington.

8.2 Ngā whanaketanga mō ngā wā kei mua mā ngā huringa ki te mahere

Future developments through plan changes

2. Mana Whenua are resourced to help complete the National Objectives Framework (NOF) process set out in section 3.7 of the NPSFM 2020 for Te Whanganui-a-Tara that includes:
 - 2.1. articulating additional attributes for Mana Whenua values,
 - 2.2. identifying baseline states for attributes,
 - 2.3. setting additional target attribute states for the different Wāhi Wai Māori Freshwater Management Units (FMUs),
 - 2.4. setting environmental flows, levels and limits for the major rivers, small streams and aquifers,
 - 2.5. articulating limits, management methods and mātauranga Māori monitoring measures,
 - 2.6. agreeing a new quantum for permitted water takes,
 - 2.7. addressing non-municipal water supply, and
 - 2.8. completing the Te Oranga Wai attributes for freshwater and coastal receiving environments for inclusion in the Proposed Natural Resources Plan (PNRP) as part of the 2022 and 2024 plan changes.

8.3 Wai ora

Water that sustains life

3. Identify and restore wai ora in all freshwater and coastal receiving environments in Te Whanganui-a-Tara **by 2071**.
4. Develop a wai ora measure that identifies the baseline state of wai ora from the mātāpuna (headwaters) through to takutai moana (the sea).

8.4 Mahinga kai

Food gathering places

5. Mana Whenua are resourced to develop and implement a measurement framework for mahinga kai as a compulsory value in the NPSFM 2020 by **2025**. The framework will be central to Greater Wellington monitoring and will provide ongoing mahinga kai measurement for both water quality and quantity across eight spatial areas identified in Te Mahere Wai. The measurement framework will identify baseline states, attributes and target states for: taonga species, mahinga kai areas, and mahinga kai activities.
6. Develop a whaitua-scale (catchment-scale) Mana Whenua monitoring and reporting framework for mahinga kai.
7. The mainstream Whaitua Implementation Programme relies on Te Mahere Wai and ongoing Mana Whenua implementation to provide the assessment of compulsory mahinga kai values required in the NPSFM 2020. It is recommended that Greater Wellington implement all mahinga kai recommendations to give effect to national policy directives.

8.5 Ngā awa tupua

Streams with a spiritual nature

8. Te Korokoro o te Mana (Korokoro Stream), Te Manga o Kaiwharawhara (including Te Māhanga and Korimako streams) and Wainuiomata are prioritised for protection and restoration.
9. The Korokoro and Kaiwharawhara streams, and the entire length of the Wainuiomata Awa are designated as outstanding waterbodies in Schedule A: Outstanding Water Bodies of the Proposed Natural Resources Plan (PNRP).
10. Te Awa Kairangi, Akatārawa, Pākuratahi, Whakatikei, Wainuiomata, Te Awa o Ōrongorongo, and the Parangārehu Lakes are classified as areas that have outstanding natural character in the PNRP.
11. The Korokoro and Kaiwharawhara streams, and the entire length of the Wainuiomata Awa, are taonga and should be protected and restored by conferring a legal personhood on each.
12. Greater Wellington works in partnership with Mana Whenua, Lower Hutt City Council, KiwiRail and Waka Kotahi to reinstate mai uta ki tai (from the inland to sea) pedestrian access between Honiana Te Puni reserve and Korokoro Stream.

8.6 Ko te Mana whenua hei Kaiwhakatau

Mana Whenua as decision-makers

13. Mana Whenua are resourced to implement Te Mahere Wai and are active and have an integral presence as Ngā Mangai Waiora (ambassadors for water) in whaitua monitoring and management of their freshwater taonga.
14. Greater Wellington enter into a partnered management agreement with Mana Whenua so that they are actively involved in all freshwater management decision-making processes in Te Whanganui-a-Tara. This includes giving effect to Te Mana o te Wai at a local level and developing, monitoring and implementing the Whaitua Te Whanganui-a-Tara Whaitua Implementation Programme (WIP).
15. Greater Wellington resources iwi management plans and joint management agreements under section 36B of the RMA where appropriate.¹²
16. Greater Wellington delegates its powers under section 33 of the RMA to Mana Whenua (where agreed) to make decisions around freshwater management that includes (but is not limited to) monitoring of awa and enforcement of resource consent conditions.
17. Greater Wellington establishes a permanent Mana Whenua decision-making rōpū (group) to help develop and implement the Whaitua Implementation Programme and Te Mahere Wai.
18. Greater Wellington and Mana Whenua agree the rating resource to be allocated and managed by Mana Whenua for the management of Ngā Awa Tupua within Te Whanganui-a-Tara.
19. Greater Wellington supports the establishment of, and provides operational funding for, a Mana Whenua kaitiaki monitoring and management programme like Ngā Mangai Waiora (ambassadors for water).
20. Greater Wellington will support the implementation of Te Mahere Wai and the Whaitua Implementation Programme through the establishment of mātauranga Māori expertise within the organisation.
21. Mana Whenua are resourced to undertake a review of traditional Māori names across Te Whanganui-a-Tara water bodies in order to promote their correct usage and retention and, where possible, restore traditional names that have been lost.

8.7 Te kounga o te wai

Water quality

22. Activities affecting water quality will ensure that the water quality standards set in the PNRP, or the A band attribute state in the NPSFM 2020, whatever is more stringent, are achieved.
23. Greater Wellington will prioritise removing the discharge of human effluent and waste to freshwater and coastal waterbodies.
24. All waterbodies and wetlands in Te Whanganui-a-Tara have planted riparian margins.
25. The steep rural land within the Southwest Coast Wāhi Wai Māori (FMU) is retired to allow native forest regeneration.

¹² This is important as Greater Wellington cannot delegate powers to make decisions on resource consents, designations or policy statements/plans to iwi authorities without a joint management agreement.

8.8 Ngā tukunga wai paruparu, wai rerenga waipuke hoki

Wastewater and stormwater discharges

- 26. There are no discharges (point source or non-point source) that impact on water quality standards that are set.
- 27. Greater Wellington along with partners, including Mana Whenua and district councils, develop a plan to remove all direct wastewater discharges to freshwater within a generation (**20 years**).
- 28. Greater Wellington immediately:
 - 28.1. reviews all consented direct point discharges to freshwater, particularly the Silverstream discharge to Te Awa Kairangi, and discharges to the Karori and Waiwhetū streams,
 - 28.2. reviews all non-consented direct point discharges that includes monitoring and remediation.
- 29. Kaiwharawhara, Korokoro, Wainuiomata and Black Creek are prioritised for an audit of cross connections.
- 30. Sanitation systems like septic tanks are audited for a number of parameters including system design, age, structural integrity, soil type and maintenance issues.
- 31. Septic tanks are required to undergo a warrant of fitness (WOF) check where an onsite servicing specialist undertakes a regular WOF service and performance check.
- 32. Stormwater is captured and treated and, where possible, utilised as a resource. Where released to streams, it is released in a manner aligned with natural flow regimes.

8.9 Ngā tukunga takutai moana

Coastal discharges

- 33. Greater Wellington along with partners, including Mana Whenua and district councils, works to remove all untreated wastewater discharges to takutai moana (the sea) within a generation (**20 years**).
- 34. Greater Wellington will immediately:
 - 34.1. identify the impacts of wastewater discharges on public health,
 - 34.2. identify the impacts of wastewater discharges on mahinga kai, customary use and Mana Whenua sites of significance through viral and faecal coliforms flesh testing of taonga species, and
 - 34.3. resource science and mātauranga Māori capacity and capability, to ensure that coastal discharges are monitored by Mana Whenua, managed and remediated.
- 35. Greater Wellington develops a wastewater management innovation programme that includes incentivising alternative waste disposal, such as:
 - 35.1. establishing incentivised compost toilet programmes including a rates rebate for those who disconnect their black water,
 - 35.2. decoupling trade waste from domestic waste that includes onsite trade waste management innovation programmes; reviews and enhances pre-treatment requirements for trade waste and stormwater from industrial/commercial sites; and penalises non-compliance.

8.10 Te nui o te wai

Water quantity

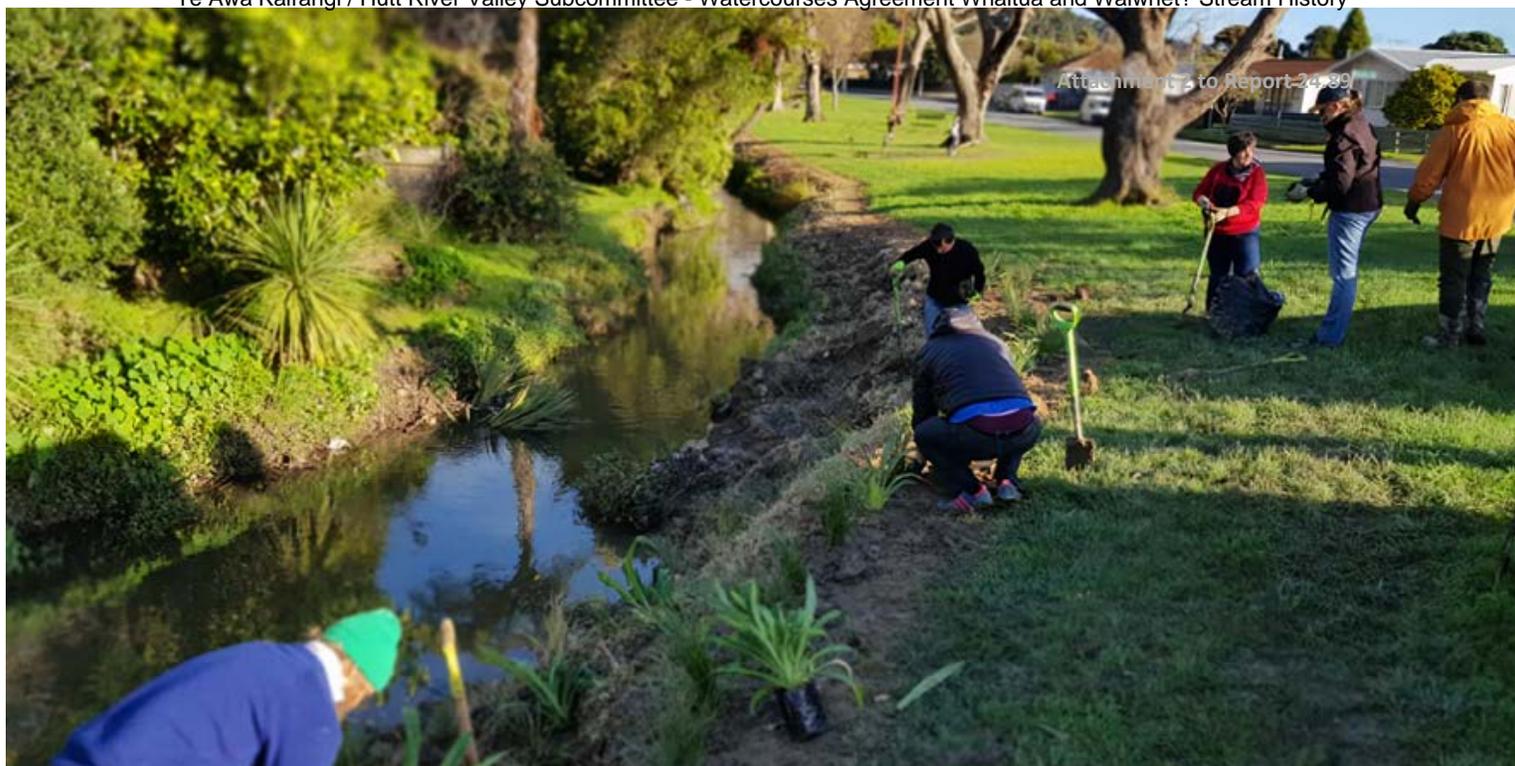
36. Water takes are managed in a way that allows all rivers and streams to be healthy and flourishing. Natural flow variability is protected, long periods of low flow are avoided, and the natural movement of water and sediment through the awa is maintained.
37. Greater Wellington and Mana Whenua establish a decision-making framework for identifying environmental flows and levels, cultural flows and flow variability for all water bodies in Te Whanganui-a-Tara **by 2024**.
38. Cultural flows must be accounted for, **before** setting allocation limits.
39. Greater Wellington and Mana Whenua are resourced to monitor and collect data that will inform water allocation and the setting of limits to achieve Te Mana o te Wai for every waterbody in Te Whanganui-a-Tara **by 2024**. The limits must be expressed as rules in the PNRP and will need to provide for environmental flows, levels and variability of flows and must clearly articulate:
- 39.1. the amount of water that can be taken,
 - 39.2. the extent of flow variability,
 - 39.3. how to safeguard ecosystem health from extended low flows,
 - 39.4. life cycle needs, particularly for native diadromous fish species and their need for connectivity between the sea and land (and riverbed to banks when spawning during high-flow events),
 - 39.5. total volume and total rate, and
 - 39.6. cease and restrict limits.
40. The limits for all streams outside the major water supply catchments are apportioned 100% Mean Annual Low Flow (MALF) for the minimum flow and 30% of MALF for the allocation amount.
41. The new minimum flow of 100% of MALF is to be implemented for small streams in the upcoming regional plan change and applied when existing consents are reviewed or new applications are received.
42. Water quantity management must achieve 90% of MALF across all main-stem waterbodies **by 2071**.
43. The minimum flow levels for Te Awa Kairangi are lifted to achieve 80% of MALF **by 2050**.
44. All existing water take consents are reviewed to ensure the new limits are applied to existing consents.
45. Place minimum flow limits on the 25 or so consented takes in Te Awa Kairangi that have no minimum flow and monitor and meter each.
46. All water takes in the region are metered, including takes below 5 litres per second.
47. All consented takes have electronic meters **by 2027**.
48. The permitted take rule in the PNRP is removed so that takes above those allowed in section 14(3)(b) of the RMA will require resource consent.
49. Greater Wellington works with Mana Whenua to clarify the meaning of “reasonable domestic use” and “stock drinking water” takes outlined in the RMA.
50. All small streams are monitored for flow.

- 51. Te Awa Kairangi, Ōrongorongo and Wainuiomata are publicly acknowledged for supplying all the potable water utilised by the communities of Te Awarua o Porirua Whaitua. This is 12% of all water taken from these rivers.
- 52. A new water allocation model will include a specific iwi allocation.
- 53. There is a rāhui (moratorium) on all future water takes, reducing the limit to existing consented amounts.
- 54. The transfer of water consents and takes is prohibited.
- 55. A “sinking lid” approach is applied to clawback allocation, where lapsed consents have their apportioned take returned to the awa or iwi as a right of first refusal.
- 56. Greater Wellington provides resources to strengthen compliance and enforcement of water takes, particularly those from or adjoining small streams.
- 57. Domestic water supply is prioritised over commercial use as articulated in the NPSFM 2020 hierarchy of obligations.
- 58. Commercial users must explore ways to use water more efficiently to reduce their water take.
- 59. Commercial takes reduce and cease during times of low flow.

8.11 Te tiaki i te awa katoa i raro i Te Mahere Wai

Te Mahere Wai holistic river care

- 60. A partnered management approach is adopted so that Mana Whenua have a meaningful role in developing, applying, monitoring and enforcing best practice holistic care for rivers.
- 61. Greater Wellington works with Mana Whenua to review the design channel, buffer zones and optimum bed levels in the relevant floodplain management plans for Te Awa Kairangi and Wainuiomata Awa.
- 62. Greater Wellington works with Mana Whenua to incorporate managed retreat and positive engineering options into the floodplain management plans for Te Awa Kairangi and Wainuiomata Awa.
- 63. Greater Wellington resources managed-retreat expertise in each level of decision-making.
- 64. The existing global flood protection consent is reviewed so that it gives effect to Te Mana o te Wai, by putting the needs of the river **first**.



8.12 Āku waiheke Smaller streams

65. Small streams are the “forgotten streams” in rural and urban areas that are extensive, steep and very vulnerable to stock. Under the existing regime, they are unmanaged and this is an anomaly. Because the streams are small, they are vulnerable to access by cattle and horses even at low stocking rates. The topography means that they are not required to be fenced because of the steep slope. We recommend stock exclusion is addressed through the farm plan process on a case-by-case basis.
66. Greater Wellington will work with Mana Whenua to:
- 66.1. exclude cattle and horses through farm plan processes,
 - 66.2. establish environmental flows and limits for āku waiheke (small streams),
 - 66.3. determine the health of mahinga kai species,
 - 66.4. investigate unconsented takes, and
 - 66.5. require resource consents for any new domestic take where the impact cannot be assessed.
67. Marginal land on the southwest coast is retired to protect āku waiheke and te mātāpuna and the receiving coastal environment.
68. Cattle are excluded from all small stream catchments in the southwest coast **within five years**.
69. Farming cattle in vulnerable catchments is not a permitted activity in the PNRP.
70. Greater Wellington works with Mana Whenua to name all āku waiheke and ngā wai huna (concealed waters) that are not named, or have anglicised names, with traditional Māori names.
71. Greater Wellington works with Mana Whenua to identify and map āku waiheke and ngā wai huna.
72. Greater Wellington works with Mana Whenua to daylight ngā wai huna where appropriate.
73. The ecological and cultural values of ngā wai huna (concealed waters) are given the same level of protection as natural streams and waterways.
74. Culverts, weirs and dams must allow for native fish migration, but block trout and pest fish access to uninvaded areas.

8.13 Te tiaki i te mātāpuna kei kino i ngā pāngā o te whanaketanga me ngā ngahere nā te tangata i whakatō

Protection of te mātāpuna (headwaters) from the impacts of development and plantation forestry

- | | |
|--|---|
| <p>75. Te mātāpuna are revered, protected and restored as the ultimate sources of mauri/mouri for freshwater.</p> <p>76. All plantation forestry near te mātāpuna must have harvest plans in place by 2026 that:</p> <p>76.1. are approved by Mana Whenua,</p> <p>76.2. include Mana Whenua values and environmental outcomes in Te Whanganui-a-Tara,</p> <p>76.3. meet best practice management requirements, including the use of riparian buffers,</p> <p>76.4. prohibit the use of ecotoxic chemicals to poison vegetation,</p> | <p>76.5. prohibit blanket spraying of vegetation,</p> <p>76.6. incorporate promoting and incentivising selective felling,</p> <p>76.7. promote the regeneration of native vegetation in the headwaters, and</p> <p>76.8. are monitored regularly for compliance by Mana Whenua and Greater Wellington.</p> <p>77. This includes all Greater Wellington land that is currently in use for plantation forestry.</p> <p>78. There is no harvesting of the existing pine plantation forestry in the Korokoro Wāhi Wai Māori (FMU).</p> |
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8.14 Ngā mātāwainuku Aquifers

- | | |
|--|--|
| <p>79. Greater Wellington and Mana Whenua work together to monitor the ecological function of Te Awa Kairangi aquifers using mātauranga Māori knowledge and the monitoring of stygofauna.</p> | <p>80. Aquifer wells in Te Whanganui-a-Tara by Matiu/Somes Island are continuously monitored.</p> |
|--|--|

8.15 Ngā momo e kīa nei he taonga Taonga species

- 81.** On the southwest coast, seabird taonga species such as kororā (penguins) and tītī (muttonbirds) are monitored, including for abundance and size to measure ecosystem health.

8.16 Ngā wāhi hira

Sites of significance

82. Greater Wellington will share decision-making with Mana Whenua so that they are actively involved in determining whether a resource consent application for an activity near or on Mana Whenua sites of significance is more than minor.
83. Greater Wellington will share decision-making with Mana Whenua so that they are actively involved in the restoration and protection of Mana Whenua sites of significance.

8.17 Ngā roto o Parangārehu

Parangārehu Lakes

84. Rōpū (group) Tiaki Mana Whenua and their iwi boards have tino rangatiratanga for setting priorities and visions for the lakes.
85. The current monitoring programme for the lakes is expanded and resourced so that it includes identifying attributes and baseline states for assessing achievement of Mana Whenua environmental outcomes.
86. Public access to the lakes is reviewed by Mana Whenua and Greater Wellington to address Mana Whenua concerns, particularly around the introduction of invasive species. Visitors (walkers and cyclists) to the lakes area must undertake biosecurity controls when entering the area.
87. The monitoring of taonga species is increased to support the long-term vision of sustainable cultural harvest of tuna and other valued species for special occasions like tangihanga.
88. Greater Wellington continues to resource investigations to understand the ecological and water quality baseline for the lakes, including their connectivity to the sea, expected species and underlying soil characteristics **by 2035**.
89. Pest management is addressed to accelerate the improvement and restoration of the lakes.
90. Stock exclusion from waterways is prioritised in the area, and Greater Wellington will provide support to affected landowners in its implementation.
91. Greater Wellington resources and supports Mana Whenua-led mātauranga Māori monitoring and care of the lakes and the whaitua (catchment).
92. If the historical material (post-earthquake) suggests connectivity to the sea for Lake Kōhangapiripiri, then Greater Wellington and Mana Whenua will develop and implement a plan for reinstating the lakes' natural ability to breach out to the sea.
93. That a public report card/dashboard tool is established for the lakes to clearly communicate the degree of achievement of the targets and outcomes. This could include mātauranga attributes.

8.18 Ngā repo

Wetlands

- 94.** All-natural wetlands (including degraded wetlands) within Te Whanganui-a-Tara regardless of size are mapped and protected by Greater Wellington.
- 95.** All wetland margins adjoining natural and induced wetlands with outstanding indigenous biodiversity are:
- 95.1. mapped by Greater Wellington,
 - 95.2. restored so that they are once again a functioning part of the main wetland, and are
 - 95.3. protected by including them in Schedule A3: Wetlands with outstanding indigenous biodiversity values of the PNRP.
- 96.** The area of land contiguous to any existing wetland that is scheduled as a wetland with outstanding indigenous biodiversity values, which includes (but is not limited to) the Maymorn Wetlands and Mount Cone Turfs, is also captured within Schedule A3: Wetlands with outstanding indigenous biodiversity values of the PNRP.
- 97.** All of the repo (wetlands) in the Parangārehu Lakes area are classified as wetlands with outstanding indigenous biodiversity values in Schedule A3¹³ of the PNRP.

8.19 Te whakahoki o ngā whakaaetanga o tēnei wā

Recall of existing consents

- 98.** Greater Wellington reviews all existing consent conditions that apply to an activity within 500 metres of an awa so that they reflect allocation limits and water quality standards in the PNRP Operative Rules, R¹⁴,¹⁵ and give effect to Te Mana o te Wai as required in the NPSFM 2020.

¹³ Wetlands with outstanding indigenous biodiversity values.

¹⁴ See section 128(1)(b) of the RMA.

¹⁵ Rule R50: Stormwater from a local authority network at plan notification – controlled activity.

8.20 Te whakaea i ō mua hē i te whaitua Catchment restorative justice

- 99.** Greater Wellington adopts a community whaitua restorative approach that punishes polluters and makes them directly answerable to the affected water body and its community. This could include the payment of damages to restore the affected area and its values. Any fines resulting from prosecution will be spent within the affected whaitua.
- 100.** Greater Wellington lobbies central government to remove the cap on fines so that they are able to be set at a level commensurate with the effect of the damage incurred.

8.21 Ngā mahi hautū o Te Pane Matua Taiao Greater Wellington leadership

- 101.** Greater Wellington adopts best management practice for managing its land that includes fencing waterways, retiring marginal land, addressing pine plantation forestry activities that affect water quality, and moving away from hard engineering options for flood management.



iwa

WĀHI WAI MĀORI E WHAKAHAERETIA ANA



9 Wāhi Wai Māori e whakahaeretia ana

FRESHWATER MANAGEMENT UNITS

Te Kāhui Taiao have identified **eight** Wāhi Wai Māori (Freshwater Management Units or FMUs) for Te Whanganui-a-Tara.¹⁶

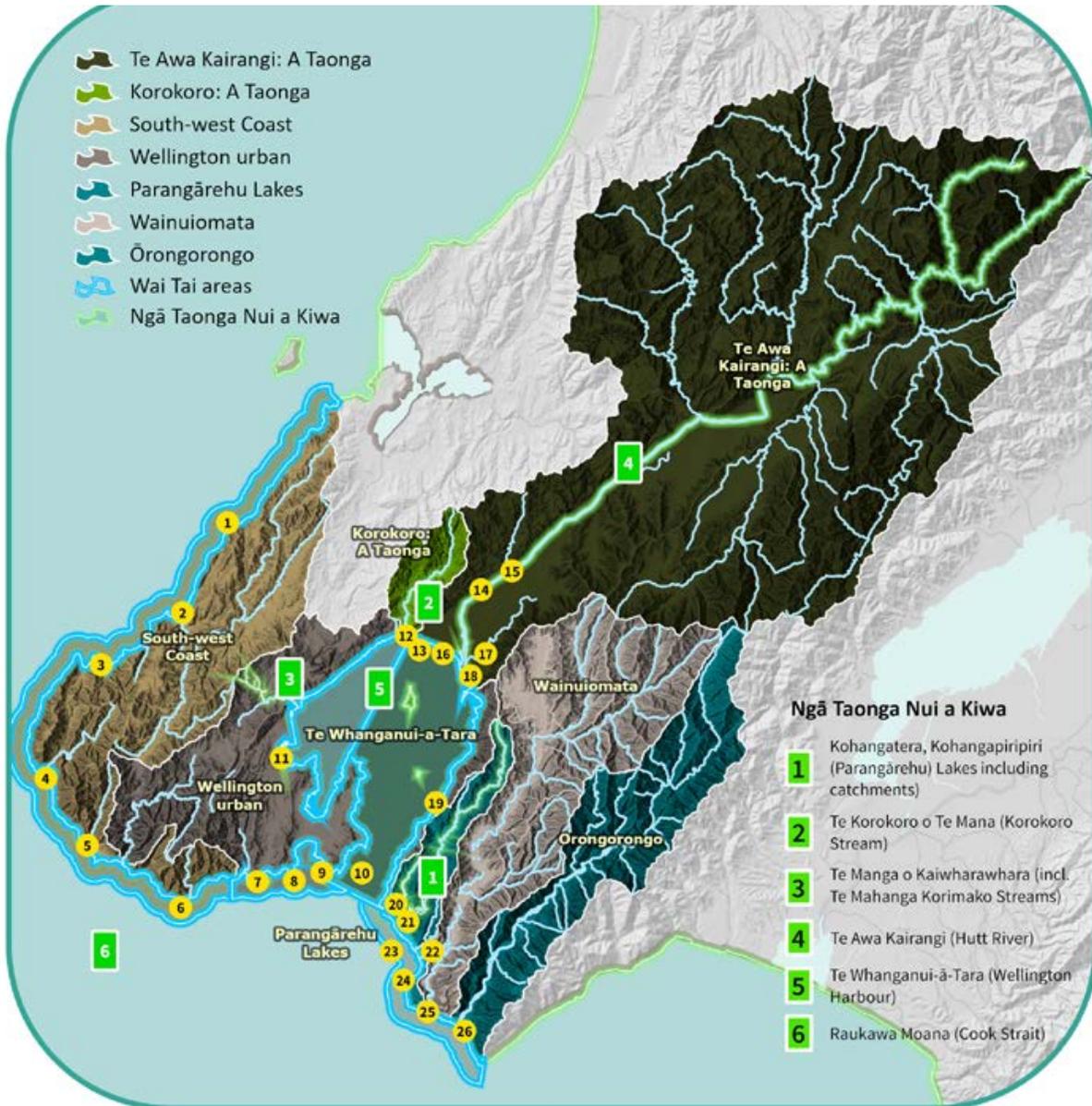
The purpose of these FMUs is all about breaking the catchment down into a scale that can be appropriately cared for and that also give effect to Te Mana o te Wai. The spatial areas are also useful for accounting purposes and are representative of monitoring sites relating to Māori freshwater values.

Wāhi Wai Māori developed by Te Kāhui Taiao are shown in the map depicted on the following page. The key whaitua (catchment) areas include Te Awa Kairangi, Korokoro, Kaiwharawhara and Wellington urban streams, Southwest Coast, Wainuiomata, Ōrongorongo, Parangārehu Lakes, Te Whanganui-a-Tara and other Wai Tai (coastal areas).

¹⁶ See clause 3.8 of the NPSFM 2020.

Photo: Dr Iain Dawe





Sites with significant Mana Whenua values

- | | | |
|---|--|--|
| 1 Kie Kie/Kia Kia (Ngutu Kākā pā) (Pipinui Point) | 10 Te Tangihanga-a-Kupe (Barrett Reef) | 19 Korohiwa (East Harbour coast) |
| 2 Ōhariu - Wharehou Bay | 11 Te Aro pā | 20 Parangārehu Lakes, Kohangapiripiri |
| 3 Te Ika a Maru - Ohau Bay | 12 Te Korokoro o Te Mana (Korokoro Stream mouth) | 21 Parangārehu Lakes, Kohangatera |
| 4 Ōterongo Bay | 13 Pito-one pā (Petone foreshore) | 22 Ōkākaho Stream |
| 5 Waiariki Stream mouth and coast | 14 Te Awa Kairangi/Hutt River - Maraenuku pā | 23 Parangārehu (Fitzroy Bay) |
| 6 Te Rimurapa - Pariwhero (Sinclair Head - Red Rocks) | 15 Te Awa Kairangi/Hutt River - Motutawa pā | 24 Baring Head/Ōruapouanui |
| 7 Tapu te Ranga - Owhiro - Haewai | 16 Hikoikoi pā, Pitoone (Petone) foreshore | 25 Wainuiomata River mouth and foreshore |
| 8 Te Raekaihau Point reef | 17 Te Awa Kairangi (Hutt River mouth) | 26 Ōrongorongo River mouth |
| 9 Hue te Taka (Wellington south coast) | 18 Waiwhetū Stream – Ōwhiti pā | |

Each of these Wāhi Wai Māori also have a series of sub-catchments and tributaries within them. The decision to land on these FMUs was developed over a number of months and they reflect the aspirations of Te Kāhui Taiao about how best to give mana to each waterbody in the whaitua.

Key considerations included:

1. Capturing whole river systems and their connection to the sea. This moved away from an earlier iteration of spatial areas that literally “chopped off” the head of awa from their tails. Each of the Wāhi Wai Māori adopted a mai uta ki tai integrated whaitua (catchment) approach that connects te mātāpuna (headwaters), āku waiheke (small streams) to takutai moana (the sea). This grouping of waterbodies with the coast recognises the interconnectedness of the whole environment and the interactions between freshwater, land, waterbodies, ecosystems and receiving environments.
2. Restoring the mana of āku waiheke by naming and mapping these “forgotten waterbodies” in each of the spatial areas.
3. Reflecting the significance of certain waterbodies by giving them their own management units. For example, Korokoro, Kaiwharawhara, Te Awa Kairangi, Parangārehu Lakes, Te Whanganui-a-Tara (Wellington Harbour) and Raukawa Moana (Cook Strait) are all Ngā Taonga Nui a Kiwa (the treasured inheritance of Kiwa refers to those waterbodies of most importance to Mana Whenua identified in Schedule B of the PNRP) to iwi and accordingly have sufficient mana to be treated as their own entities.
4. Ensuring that receiving environments were captured within the Wāhi Wai Māori. This was of critical importance to Mana Whenua as many of their sites of significance are located within Te Whanganui-a-Tara (the Wellington Harbour), around the Cook Strait and South Coast.
5. Identifying “exemplar” individual whaitua, like Kaiwharawhara, that have an existing catchment-wide approach to monitoring and restoration in place, including Sanctuary to the Sea from Zealandia to the Kaiwharawhara Estuary. This presents an opportunity for Mana Whenua and Greater Wellington to focus on specific outcomes that could include targeted restorative work and education initiatives that also recognise the connectivity with other spatial areas.
6. Prioritising special sites like the Parangārehu Lakes for immediate improvement.

tekau

NGĀ UARATANGA



10 Ngā uaratanga

THE VALUES

Ngā uaratanga (value/values) are the Mana Whenua values that Te Kāhui Taiao have identified in relation to ngā awa (rivers), ngā wai huna (concealed waters) and takutai moana (the sea) within Te Whanganui-a-Tara. Ngā uaratanga reflect the value and importance of freshwater to Mana Whenua and set standards to aspire to in the care and use of freshwater.

Ngā uaratanga are the values for all the awa in Te Whanganui-a-Tara and provide the framework for the Mana Whenua environmental outcomes, attributes and target attribute states.¹⁷

Te Kāhui Taiao have identified 27 Mana Whenua values for each of the eight Wāhi Wai Māori (Freshwater Management Units or FMUs). Some of these values were identified by Mana Whenua at hui held at Takapūwahia Marae on 12 April 2021, at Te Tātau o te Pō Marae on 16 March 2021, at Te Wai nui o Mata Marae on 18 March 2021 and at a Parangārehu Lakes workshop on 17 February 2021.

Ngā uaratanga also contain a comprehensive list of values described by kaitiaki rōpū in the development of the PNRP. Mana Whenua have identified both the significant waterbodies within their tribal areas (Ngā Taonga Nui a Kiwa in Schedule B of the PNRP) and many sites of significance (in Schedule C) within waterbodies that they consider require additional protection. A complete list of uaratanga (value/values) is set out in the table below.

Uaratanga	Kōrero whakamārama	Origins
Ngā awa tipua	This is a description of the river system from te mātāpuna (the headwaters) to takutai moana (the sea). This describes the river as a whole, its spiritual and physical dimensions, and the unity and connection of Mana Whenua with it.	Ngā Taonga Nui a Kiwa (the treasured inheritance of Kiwa refers to those waterbodies of most importance to Mana Whenua identified in Schedule B of the PNRP).
Wai ora	Is water utilised for healing. These are sacred places where rituals and ceremonies were practised by Mana Whenua, and included rituals and ceremonies.	Te Kāhui Taiao, Mana Whenua
Wai tapu	Are sacred places where rituals and ceremonies were practised by Mana Whenua.	Te Kāhui Taiao, Mana Whenua
Te mātāpuna	The headwaters are revered, protected and restored as the ultimate sources of mauri/mouri of freshwater.	Te Kāhui Taiao, Mana Whenua

¹⁷ See clauses 3.7 and 3.9 of the NPSFM 2020.

Uaratanga	Kōrero whakamārama	Origins
Āku waiheke (small streams), ngā wai huna (concealed waters and aquifers)	Small water bodies and aquifers are recognised for their individual and accumulated values including habitat and water volume. Waiheke are the small streams that are disproportionately significant, especially in terms of habitat, cultural use and connection with the community because of their good water quality and natural character. Their collective volume is considerable at a catchment scale.	Te Kāhui Taiao, Mana Whenua
Tiaki whenua	Means to take care of the land (used to describe the plantation forestry practices in many of the headwaters).	Te Kāhui Taiao, Mana Whenua
Āhua	Āhua is the natural character of an area, and may include exceptional natural, iconic or aesthetic features. Matters contributing to the natural form and character are biological, visual and physical characteristics valued by a community. Āhua is a matter of national importance in the Resource Management Act 1991.	Te Kāhui Taiao, Mana Whenua
Ngā mahi a ngā tūpuna	The interaction of Mana Whenua with fresh and coastal waters for Mana Whenua purposes. This includes the cultural and spiritual relationships with water expressed through Mana Whenua practices, recreation, and the harvest of natural materials for Mana Whenua purposes. This includes ancestral connections to the land passed down by tūpuna (ancestors) and whakapapa (genealogy).	Ngā Taonga Nui a Kiwa in the PNRP
Te nui o te wai	This addresses water quantity and means the abundance of water.	Te Kāhui Taiao, Mana Whenua
Te mana o te tangata	The mana o te tangata is the relationship between the mana of the wai and the mana of the tangata, iwi/hapū as Mana Whenua and mana whakahaere of their freshwater taonga.	Ngā Taonga Nui a Kiwa in the PNRP
Te mana whakahaere o ngā awa ki uta ki tai	Holistic river management. Addresses existing flood management activities.	Te Kāhui Taiao
Wāhi tapu	These are sacred places that are revered by Mana Whenua for their traditional, spiritual, ritual and mythological values.	See Schedule C sites of significance in the PNRP
Wāhi tupuna	These are significant ancestral places.	See Schedule C sites of significance in the PNRP
Wāhi maumahara	These are memorial places.	See Schedule C sites of significance in the PNRP
Wai Māori	Water used for drinking purposes.	Schedule M1 in the PNRP

Uaratanga	Kōrero whakamārama	Origins
Te mahi kai/ mahinga kai	Mahinga kai is the customary gathering of food and natural materials, the food and resources themselves and the places where those resources are gathered. Te mahi kai is the utilisation of the resources of this awa for spiritual sustenance and is its highest value.	Ngā Taonga Nui a Kiwa in the PNRP
Wāhi whakarite	Sites and places where very important and often restricted activities have been undertaken by Māori for many centuries. This is a place of ritual related especially to mahinga kai activities that require a specific environment to function. These practices differ from day-to-day activities like Ngā Mahi a ngā Tūpuna.	Ngā Taonga Nui a Kiwa in the PNRP
Taonga species	Are native birds, plants and animals of special cultural significance and importance to Māori.	Te Kāhui Taiao, Mana Whenua
Contact recreation and Māori customary use	This includes the interaction of Māori with fresh water and coastal waters for cultural purposes. It includes a spiritual relationship with water expressed through Māori practices, recreation and harvest of natural materials. ¹⁸ Contact recreation also supports people being able to connect with the water through a range of activities, such as swimming, waka, boating, fishing, mahinga kai and water skiing, in a range of different flows or levels.	Te Kāhui Taiao, Mana Whenua
Repo	Significant wetlands.	Schedule A3 of the PNRP
Te mahi mātaimai	Fishing and diving.	Te Kāhui Taiao, Mana Whenua
Takutai moana	The sea.	Te Kāhui Taiao, Mana Whenua
Kaimoana	The customary gathering of food and natural materials, as well as the food and resources themselves, and the places where those resources are gathered.	See Schedule C sites of significance in the PNRP
Wāhi mahara	Wāhi mahara are places of learning and where local knowledge and histories are etched into the landscape. These are essentially a place that has been central to intergenerational knowledge transmission of our tūpuna and could be used as such again in the future.	Ngā Taonga Nui a Kiwa in the PNRP
Wāhi ahurea	These are traditional places and have special value.	Te Kāhui Taiao
Wāhi whakahaumanu	Place of restoration and healing.	See Schedule C sites of significance in the PNRP
Tauranga waka	Canoe landings, landing places.	See Schedule C sites of significance in the PNRP

¹⁸ Description of Māori values in the PNRP.

tekau. mā tahi

NGĀ HUANGA



11 Ngā huanga

ENVIRONMENTAL OUTCOMES

Ngā huanga are the desired outcomes that Mana Whenua have identified for each of their uaratanga (values) that apply to a Wāhi Wai Māori (Freshwater Management Unit or FMU) or part of an FMU. Ngā huanga are of critical importance in the Proposed Natural Resources Plan (PNRP) process and will eventually form objectives in the regional plan.¹⁹

Te Kāhui Taiao have identified their own set of huanga (outcomes) for each of their uaratanga in Te Whanganui-a-Tara that apply to the eight separate FMUs. Ngā huanga describe the environmental outcome sought for each value in a way that can be assessed by Greater Wellington. Ngā huanga, when achieved, will fulfil the moemoeā (long-term vision) of Te Kāhui Taiao.

Ngā huanga also set out a timeframe for maintaining or improving outcomes as set out in He Wai mō ngā Whakatupuranga that include:

- a. **short term:** 0 – 10 years, pēpē (baby/babies) me ngā tamariki (child/children),
- b. **medium term:** 10 – 30 years, rangatahi (youth) me ngā mātua/pakeke (adults),
- c. **long term:** 30+ years, pakeke (adults) me ngā kaumātua (elders).

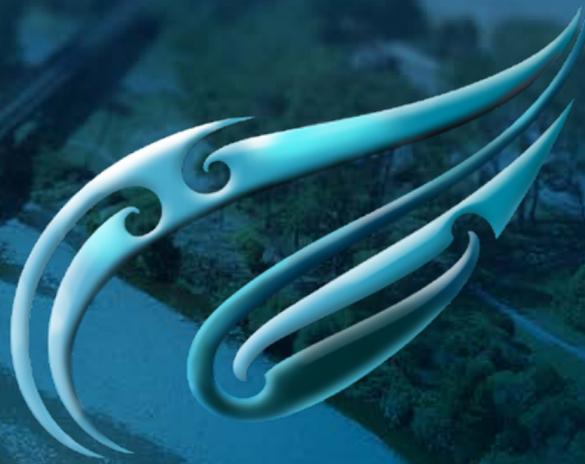
Te Kāhui Taiao huanga apply to Mana Whenua values within the following FMU spatial areas.

Spatial area/FMU	Waterbodies/sub-catchment areas
Te Awa Kairangi	<ul style="list-style-type: none"> Small, forested streams include tributaries for Te Awa Kairangi, Whakatikei, Akatārawa, Pākūratahi and Mangaroa Awa. Te Awa Kairangi mainstem rivers including Whakatikei, Akatārawa, Pākūratahi and Mangaroa awa. Te Awa Kairangi small urban streams including Hutt Valley Western Hills, Hutt Valley West Urban, Te Awa Kairangi lower mainstem, Hutt River Valley floor and the Waiwhetū Stream.
Korokoro Stream	The tributaries and mainstem of Korokoro Stream (tbd).
Wellington urban streams	These Wellington urban streams include Kaiwharawhara Stream, Karori Stream, Ōwhiro Stream and all East Harbour streams.
Southwest coast	Southwest coast streams include the Makara Stream, tributaries and coastal and estuarine areas.
Ōrongorongo River	The tributaries and mainstem of Ōrongorongo River (tbd).
Wainuiomata River	This includes Wainuiomata tributaries, small, forested streams, the mainstem and estuarine areas.
Parangārehu Lakes	This catchment area includes Gollan's Stream, Lake Kōhangaterā and Lake Kōhangapiripiri and all their tributaries.
Wai Tai	Wai Tai is the coastal area that includes Te Whanganui-a-Tara (the Wellington Harbour), Te Moana o Raukawa (Cook Strait) and Hue tā Taka (Wellington South Coast).

¹⁹ See clauses 3.7 and 3.8 of the NPSFM 2020.

tekau mā rua

TE AWA KAIRANGI: HE TAONGA



12 Te Awa Kairangi: He Taonga

THE HUTT RIVER: A CULTURAL TREASURE

12.1 Te whakamārama i Te Awa Kairangi

Describing Te Awa Kairangi

! Wai Kautū - wadeable - state of uncertainty and risk

Te Awa Kairangi is the major river system in Te Whanganui-a-Tara and is made up of many unique parts. From the headwaters in the Tararua Ranges, water flows through small, forested streams, before travelling through a number of mainstem rivers into the urban environment, and its smaller streams, and then out into Te Whanganui-a-Tara (Wellington Harbour).

Te Awa Kairangi is identified by Mana Whenua as Wai Kautū on Te Oranga Wai assessment framework. This reflects the considerable uncertainty Mana Whenua have for the state of the awa. Water takes, discharges and modifications to natural flow have had a significant effect on this awa and, while there is excellent water quality in the headwaters, the awa is vulnerable throughout its journey mai uta ki tai (from the inland to the sea). The mainstem of Te Awa Kairangi has been subject to hard flood engineering works over the years. These works are ongoing and continue to have significant impacts on mahinga kai species, Mana Whenua sites of significance and the mauri/mouri of the rivers and their tributaries.

Despite these challenges, Mana Whenua continue to value Te Awa Kairangi for its manawaroa (resilience) and have a determination to achieve the restoration of this most important taonga.



Te Awa Kairangi is a taonga and awa tupua (treasured ancestral river) for Ngāti Toa Rangitira and Taranaki Whānui. Te Awa Kairangi is the largest river in the Te Whanganui-a-Tara Whaitua and once sustained a large Mana Whenua population, providing access to forest birds, fish, rich gardening soils and numerous wild plant foods. Despite excessive land reclamations, modification and environmental damage, Te Awa Kairangi continues to support a variety of endemic wildlife, including endangered species.

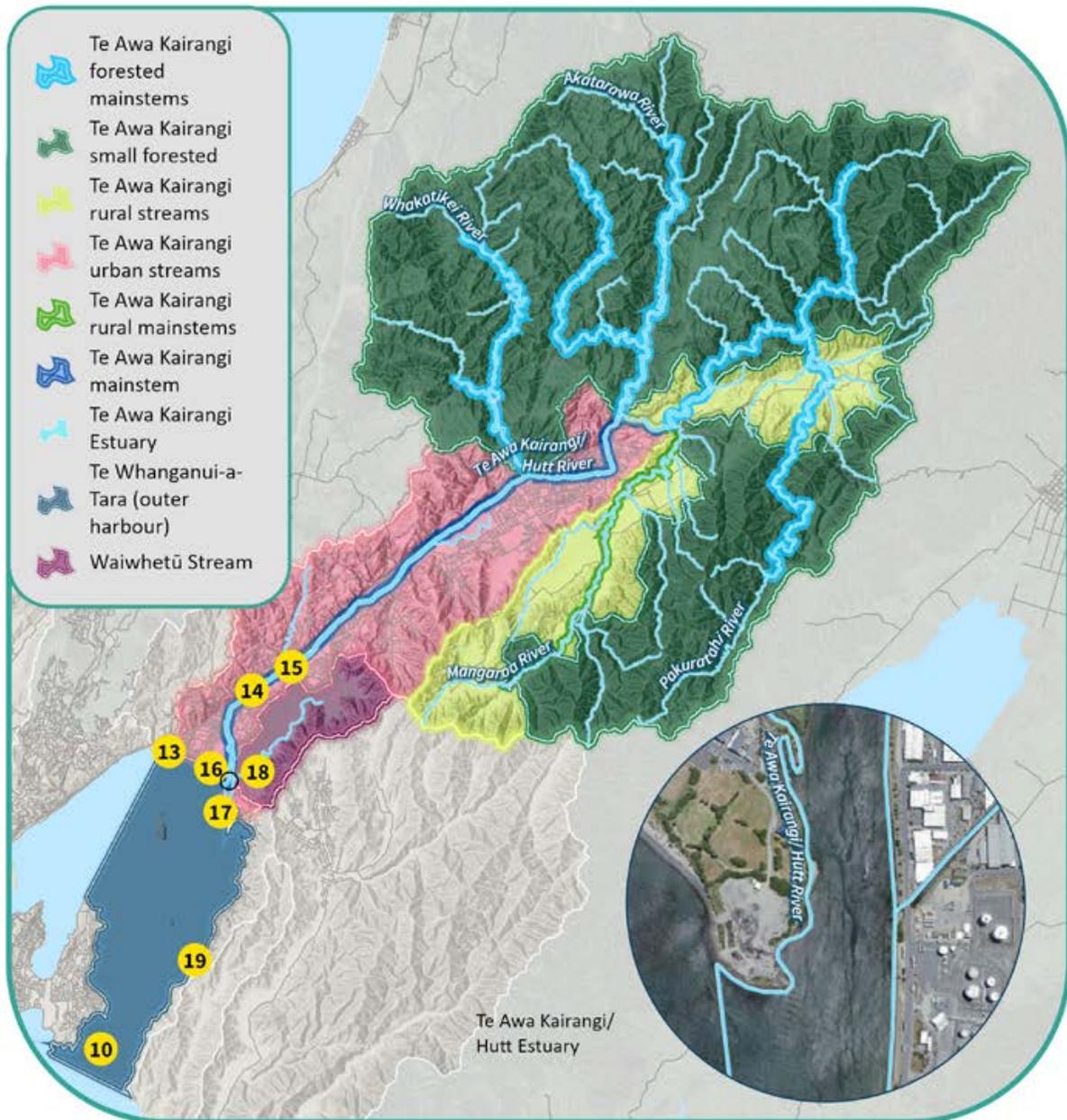
The river is of great importance as it is the largest source of freshwater in the region. Upstream of the Kaitoke Weir, the river is recognised for its outstanding indigenous ecosystem value, with high macroinvertebrate health, indigenous fish diversity and threatened

taonga fish species, including banded kōkopu, bluegill bully, giant bully, giant kōkopu, koaro, piharau, longfin tuna, redfin bully and shortfin tuna.

Like all awa in the Te Whanganui-a-Tara Whaitua, Te Awa Kairangi is a place for wānanga. Of particular note are the pā sites, the repo (wetlands) and their uses for weaving dyes and building materials.

There are many āku waiheke (small streams) in the whaitua (catchment) with unique values and mana that should be recognised and protected as well. These include Speedy's Stream, Mangaroa Awa and wetlands, Pakuratahi and Akatārawa river systems, Stokes Valley Stream, Kororipo Stream, Putaputa Stream, Waiwhetū Stream and Moonshine Stream.

Areas in the Te Awa Kairangi catchment



Sites of significance for Mana Whenua

- 10. Te Tangihanga-a-Kupe (Barrett Reef)
- 13. Pito-one pā (Petone foreshore)
- 14. Te Awa Kairangi/Hutt River - Maraenuku pā
- 15. Te Awa Kairangi/Hutt River - Motutawa pā
- 16. Hikoikoi pā, Pitoone (Petone foreshore)
- 17. Te Awa Kairangi (Hutt River mouth)
- 18. Waiwhetū Stream – Ōwhiti pā
- 19. Korohiwa (East Harbour coast)

12.2 Te whakamārama i Waiwhetū

Describing Waiwhetū

Wai Kino - contaminated by human waste

Waiwhetū Awa is the most polluted waterway in Te Whanganui-a-Tara. It is located at the lower end of the Te Awa Kairangi valley and river mouth. The stream is assessed as Wai Kino on the Te Oranga Wai Mana Whenua assessment framework. This is due to the presence of human waste (*E. coli*), which poses a health risk and means that contact with the water should be avoided.

While the lower reach of the Waiwhetū Stream is heavily channelised and polluted, the mid-range of the awa still retains āhua (natural character) and the awa remains an icon for Mana Whenua. However, although there has been considerable investment in its restoration by the local community, and councils have spent tens of millions of dollars in recent years to improve water quality, there is still work to be done before it is safe to eat eels or watercress.

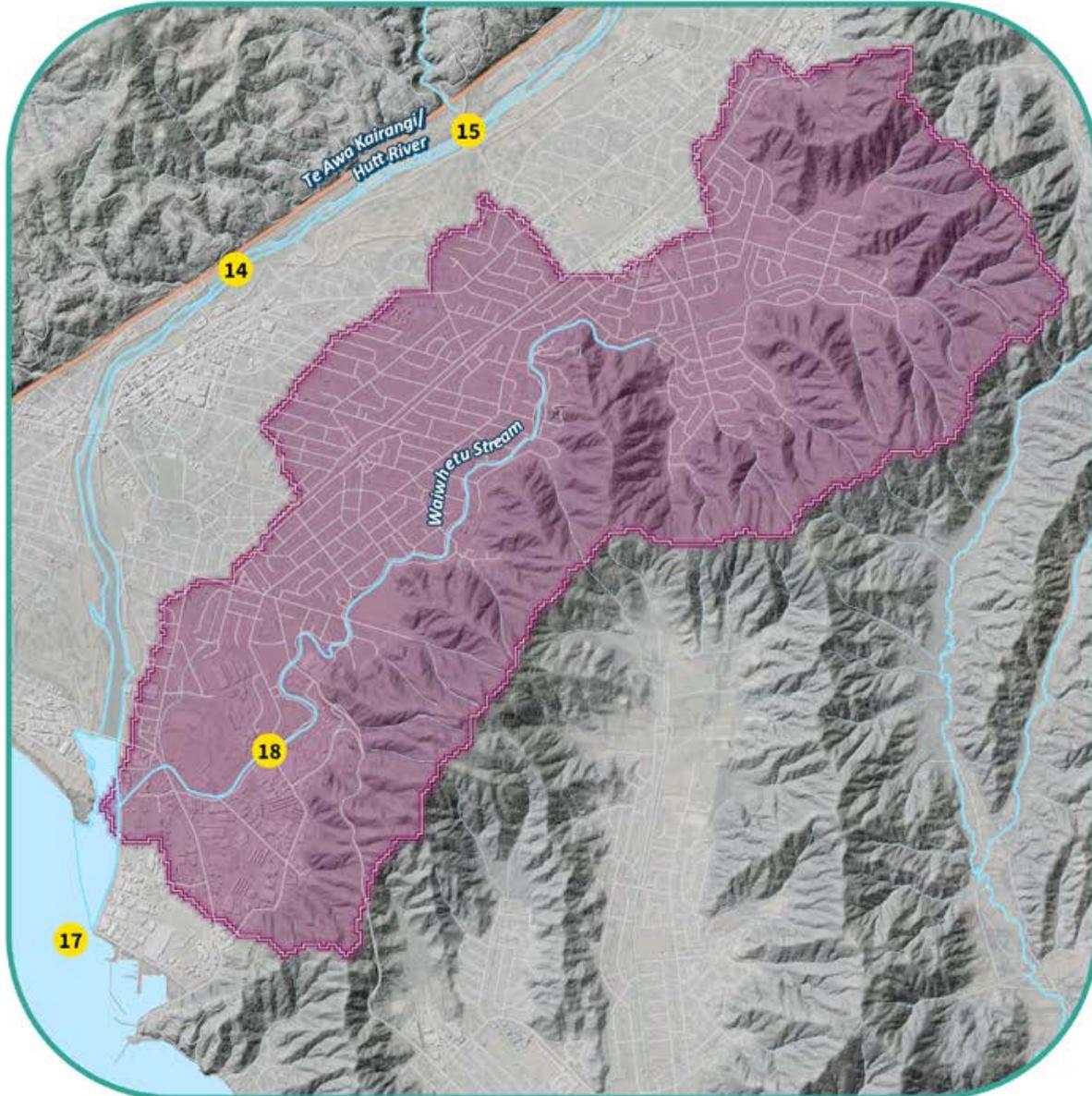
The stream is identified in regulation as Ngā Taonga Nui a Kiwa (the treasured inheritance of Kiwa refers to those waterbodies of most importance to Mana Whenua identified in

Schedule B of the PNRP) for Ngāti Toa Rangatira and Taranaki Whānui. It has sustained iwi over many centuries, with Waiwhetū Pā and Owhiti Pā being two important pā on the awa. Te Awa Kairangi ngā ngutu awa (the river mouth), the Waiwhetū Stream and the Waiwhetū Estuary were regarded as important sources of mahinga kai and freshwater for Mana Whenua.

The river mouth is recognised as a significant natural wetland and is characterised by significant indigenous biodiversity value, providing habitat for threatened native fish and birds.

Waiwhetū

within Te Awa Kairangi catchment



Sites of significance for Mana Whenua

- 14. Te Awa Kairangi/Hutt River - Maraenuku pā
- 15. Te Awa Kairangi/Hutt River - Motutawa pā
- 17. Te Awa Kairangi (Hutt River mouth)
- 18. Waiwhetū Stream – Ōwhiti pā

12.3 Ngā whainganga mō Te Awa Kairangi

Objectives for Te Awa Kairangi

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for Te Awa Kairangi.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>E mōhio nuitia ana te pepeha o ngā iwi o Whanganui mō tō rātou awa, 'ko au te awa, ko te awa ko au (I am the river, and the river is me).' The sentiments encapsulated in this treasured saying belonging to the iwi of Whanganui are deeply felt by all iwi, in relation to their waterways.</p> <p>The awa (rivers) of the district are recognised and considered as whānau and taonga by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri (life force).</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Wai ora	<p>The water is wai matua o tūāpapa (or virgin water) that is of pristine quality, and the river margins are safe and accessible for Mana Whenua to practise traditional rituals and ceremonies like:</p> <ol style="list-style-type: none"> 1. tohi (baptism), 2. karakia (prayer), 3. whakatapu (placing of rāhui), 4. whakanoa (removal of rāhui), and 5. taonga tuku iho (gifting of knowledge and resources for future generations). <p>The water quantity and flow of the streams allow for hapū/iwi to practise cultural immersion throughout the year.</p> <p>Outside of these uses, access to the sites is managed to protect the cultural safety of the wai.</p>	Short term
Te mātāpuna (headwaters)	<p>The origins of Te Awa Kairangi are high in the Tararua Range and are not used for recreational or commercial fishing purposes, and te mātāpuna:</p> <ol style="list-style-type: none"> 1. are clean and serene, 2. are a source of mauri/mouri and pristine waters, 3. have an abundance of native vegetation and native biodiversity, and 4. ngā rongoā like titoki, makomako, manamana, kawakawa and rangiora are present. 	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>Te mātāpuna are places of great beauty, and Mana Whenua rights as kaitiaki are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. are empowered and resourced to make decisions around the use, monitoring, restoration and protection of te mātāpuna, 2. can access natural resources for customary purposes, and 3. can develop measures like rāhui, to protect against exploitation like fishing and four-wheel drive activity, that are enforceable. 	
<p>Āku waiheke, ngā wai huna (concealed waters and aquifers)</p>	<p>The small streams like Kororipo Stream, the Putaputa Stream, Moonshine Stream, Speedy’s Stream and Stokes Valley Stream, and all other tributaries including ngā wai huna and aquifers, are enhanced:</p> <ol style="list-style-type: none"> 1. By naming piped or unrecognised streams. 2. All āku waiheke (small streams) and ngāwai huna traditional names are used. 3. All āku waiheke and ngā wai huna that are not named, or have anglicised names, are given traditional Māori names under the guidance of Mana Whenua.²⁰ 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Monitoring for water quality/quantity and for the presence of indigenous biodiversity and ecological function. <p>Streams that are currently piped are daylighted as far as practicable and are able to take their natural form and path.</p> <p>Where streams cannot be daylighted, their ecological values are recognised.</p> <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	Short term
<p>Tiaki whenua</p>	<p>The land around small streams is managed sensitively so that:</p> <ol style="list-style-type: none"> 1. the headwaters are in native vegetation, 2. Mana Whenua are involved in the decision-making around activities that may have an adverse impact on these streams, and 3. large areas of land are not left cleared of vegetation at the same time. 	Short term

²⁰ It is noted that non-traditional names are used within the document for some places as the process of renaming hasn’t occurred yet.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āhua	<p>The mainstem awa (rivers) have a natural variation of flows, can meander and have natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest and the forest floor.</p> <p>The voice and personality of the awa can be heard and seen. The presence of native flora and fauna can be observed and heard in the water spaces.</p> <p>The voice and personality of the awa reflects the natural variations in flow, the movement of bed material, and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	Long term
Ngā Mahi a ngā Tūpuna	We show respect for the awa and our tūpuna by ensuring that all waterbodies are clean and healthy.	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te nui o te Wai	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna (headwaters) and āku waiheke (small streams) through to takutai moana (the sea), 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. Mana Whenua can practise cultural immersion and other traditional and modern cultural uses, 4. rangatahi (youth) can swim from November through to April, 5. all life stages of taonga species are catered for, including drift-feeding fish, 6. the natural rhythms and hydrology of the river are supported – the awa can be calm, but she is also allowed to be riri (angry), 7. the flow is sufficient so that it keeps the river mouth open, 8. there is connectivity between the awa and its banks to support spawning fish, 9. those areas valued for tauranga waka are deep enough for waka to navigate, 10. the bed of the awa does not dry up during summer months, 11. it supports an abundant and diverse range of aquatic life including microbes, invertebrates, indigenous fish species, native birds and indigenous plants, and 12. whānau can use water for economic purposes without causing the level of water in the awa to drop. 	Medium term
Te mana o te tangata	<p>Mana Whenua exercise their rights as kaitiaki and mana whakahaere is in place so that iwi, hapū and marae:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how the awa will be managed, 2. are contributing to the community’s understanding of te ao Māori, Mana Whenua values and historical relationship with the awa, 3. can use mātauranga Māori, Mana Whenua ecological monitoring, and observational data to inform decision-making around the awa, 4. practise ruranga (a word meaning guest – express duties of a host), the sharing of management of the awa with the wider community and existing care groups, and 5. can exercise whakatapu and whakanoa. 	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana whakahaere o ngā awa ki uta ki tai	<p>A partnered management approach is adopted so that Mana Whenua work with Greater Wellington to develop, apply, monitor and enforce holistic river management practices.</p> <p>The flood hazard risk to communities near Te Awa Kairangi is managed so that the river is able to exhibit its natural form and character rather than being constrained and that river management includes opportunities for positive design, such as recreating ngā ūranga.</p> <p>The existing global flood protection consent is reviewed so that it achieves these outcomes.</p>	Short term
Wāhi tapu	<p>There are significant wāhi tapu sites adjoining Te Awa Kairangi, including kāinga and pā at Haukaretu (Māoribank), Whakataka Pā (which was across the bank from what is now Te Mārua), Māwaihakona (Wallaceville), Whirinaki, Motutawa Pā (Avalon), Maraenuku Pā (Boulcott), Paetutu Pā and the mouth of the river, Ngutu ihe pā, Hikoikoi Pā to the west and the Waiwhetū Pā (Ōwhiti) to the east. Te Nghohegohe and Pūhara-keke-tapu are significant places of battle along the Waiwhetū Stream.</p> <p>Wāhi tapu sites support the healthy wairua of the tangata (people) because:</p> <ol style="list-style-type: none"> 1. Whānau are able to access these sites and manage them according to tikanga. 2. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater management for wāhi tapu sites that includes (but is not limited to) monitoring and restoration. 3. Whānau can practise cultural rituals and ceremonies, such as tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu and whakanoa (placing and removal of rāhui) and tuku taonga (gifting of knowledge and resources to future generations). 4. The wai is clean and safe for use. 5. Ngā ūranga (landing/arrival places) are established along the river corridor and these are accessible by Mana Whenua, including by waka. 	Short term
Wai māori	Te Awa Kairangi is a key source of community drinking water. The water is suitable for drinking and available within flow limits for that purpose. ²¹	Medium term
Te mahi kai/ mahinga kai	<p>The whole catchment supports the entire life cycle of mahinga kai species.</p> <p>Mahinga kai species are safe to harvest and eat.</p>	Medium term

²¹ See Schedule M1: Surface water community water supply abstraction point of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>Mahinga kai sites include kāinga and pā at Haukāretu (Māoribank), Whakataka Pā, Māwaihakona, Whirinaki, Motutawa Pā, Maraenuku Pā, Paetutu Pā and the mouth of the river, Ngutu ihe Pā, Hikoikoi Pā, Waiwhetū Pā (Owhiti), Te Ngohengohe and Pūhara-keke-tapu.</p> <p>At mahinga kai sites, these fish and macroinvertebrate species are present: longfin tuna, shortfin tuna, īnanga, piharau (lamprey), pātiki (flounder), kanae (mullet), ngaore (smelt) kōura and kākahi.</p> <p>At mahinga kai sites, these plant species are present: harakeke, raupō, pūhā, kawakawa, fernroot, and plants for weaving and healing.</p> <p>Other mahinga kai, like stones used for tool making and mud for weaving dyes, are present.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.²²</p>	
	<p>Mana Whenua make decisions around the harvest of mahinga kai and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing, that are able to be enforced, 4. practise tikanga and other preferred methods of harvest safely and at the most appropriate time of the year, and 5. exercise customary practices to the extent desired. 	Short term
Wāhi whakarite	<p>The water is clean and safe to interact with, and the river margins are safe and there is space for whānau to:</p> <ol style="list-style-type: none"> 1. access traditional pā sites, 2. access traditional wāhi mahara (places of learning) to share information about local knowledge and histories of the landscape, 3. practise rituals like planting at Puanga/Matariki, 4. hold wānanga to continue indigenous practices like living by the maramataka (lunar calendar), 5. collect water to use in mauri/mouri-enhancing ways including waitohi (water for baptism) and for mate (rituals relating to death and cleansing), and 6. share intergenerational knowledge and resources with whānau and manuhiri. 	Short term

²² See Schedule C4 and Map 6 of the PNRP. The Waiwhetū Estuary is a site of significant indigenous biodiversity values in the coastal marine environment (see Schedule F4 and Map 19 of the PNRP).

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Taonga species	<p>The water conditions, level and habitat in the awa, and its corridor, support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs, including kōura and kākahi, 2. at-risk and threatened indigenous fish species like banded kōkopu, giant kōkopu, dwarf galaxias, kōaro, bluegill bully, giant bully, Cran's bully, redfin bully, piharau (lamprey), longfin tuna and shortfin tuna,²³ and 3. native birds, like kererū and kākā. <p>The lower reaches provide healthy inanga spawning habitat.</p>	Medium term
Contact recreation and Māori customary use for identified sites	<p>The water is clean and cool all year round and there are enough deep pools for a range of interactions to take place, so that:</p> <ol style="list-style-type: none"> 1. people can immerse themselves in the water (swimming, bathing, being in the water to replenish mauri/mouri) without getting sick and/or developing skin rashes, 2. rangatahi can do bombs into the waterholes and can safely mahi pārekareka i te wai (play in the water), 3. the corridor and banks are easily accessible and shaded by native vegetation that allows elderly whānau to mahi pārekareka (relaxation and recreation) ki te wai (relax alongside the awa) and 4. the water levels in traditional swimming places do not drop below hip level. <p>This includes (but is not limited to) the traditional swimming places at Double Bridges, Kaitoke, Maoribank, Taitā Rock, Pākuratahi Forks and both the Akatārawa and Te Awa o Pākuratahi.²⁴</p>	Medium term
Swimming	The water is suitable for primary contact throughout the catchment.	Medium term

23 See Schedule F1 of the Proposed Natural Resources Plan.

24 The Pākuratahi and Akatārawa rivers are significant contact recreation freshwater bodies in Schedule H1 of the PNRP and shown on Map 20.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Repo	<p>The water quality and health of wetlands, which include te ngutu awa o Te Awa Kairangi (the river mouth), the Maymorn Wetlands, Mount Cone Turf Bog²⁵ and Blue Mountain Bush Swamp Forest, support abundant and diverse biota, which includes microbes, invertebrates, native macrophytes (raupō) and native manu (birds) like cormorants, ducks, teal, tōrea (oyster catchers), sand pipers, curlew and red-legged waders.²⁶</p> <p>At repo (wetland) sites, these fish species are present: banded kōkopu, giant kōkopu, longfin and shortfin tuna, kōaro, inanga, redfin bully, bluefin bully and piharau (lamprey).</p> <p>Fish species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest, including for manuhiri and to exercise manaakitanga.</p> <p>The wetland margins are restored and given protection so that they are once again a functioning part of the main wetland.</p>	Medium term
Te mahi mātaimai	<p>People are able to practise te mahi mātaimai and te mahi hī ika particularly at coastal sites like te ngutu awa (river mouth) of Te Awa Kairangi. The awa and estuarine area supports:</p> <ol style="list-style-type: none"> 1. fishing of species allowed to be caught and eaten like trout, kahawai, shortfin tuna, mullet, kākahi and kōura, and 2. safe fishing conditions with good water clarity, safe access and healthy algal growth. 	Medium term
Takutai moana	<p>The Te Awa Kairangi estuary is prioritised for protection and restoration so that it is a healthy functioning estuary.</p>	Long term

25 See Schedule A3: Wetlands with outstanding indigenous biodiversity values: Maymorn Wetlands and Mount Cone Turf Bog and Maps 1 and 18a in the PNRP.

26 See Schedules F1 and F4 in the PNRP.

Kaupapa ūnga summary for Te Awa Kairangi

Sub-catchment areas	Water Quality		Water Quality		Mahinga Kai		Habitat	
	S	M	S	M	S	M	S	M
Te Awa Kairangi small forested	Blue	Blue	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Awa Kairangi Forested mainstems	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Awa Kairangi Rural mainstems	Orange	Orange	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Awa Kairangi rural streams	Orange	Orange	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Awa Kairangi urban streams	Red	Red	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Awa Kairangi Lower mainstem	Orange	Orange	Yellow	Yellow	Blue	Blue	Blue	Blue
Hutt Estuary	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue
Te Whanganui-a-Tara (outer harbour)	Green	Green	Yellow	Yellow	Blue	Blue	Blue	Blue

Notes

1) The assessment and ūnga for this Kaupapa are driven by the E. coli attribute.

1) Assessments and ūnga are expressed around the swimmable attribute for this Kaupapa.

2) Developing a cultural framework for allocation is sought in the short term for all of the small streams and large catchments and unsure how the swimmable attribute relates to smaller streams. This might become more apparent as other attributes are developed for this Kaupapa.

4) No assessment for ūnga in coastal places as yet.

1) Wai Ora assessment above reservoir for watercross, tuna and harakeke. Ūnga maintain the pristine areas.

2) Wai Kaurū below the reservoir, with ūnga to improve to Wai Maori through medium then Wai Ora in long term.

1) There is high variation in the individual attribute assessments, making an overall Kaupapa assessment difficult.

In particular, Te Awa Kairangi mainstem had some Wai Kaurū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.

2) Ūnga are shown as Wai Maori in medium term - though riparian cover attribute is seeking Wai Maori by short term and Wai Ora in long term.

3) Some attributes seek faster time frames to Wai Ora than shown.

Scale level	Description
Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wai Maori	This is referred to as ordinary water which runs free or unrestrained and it has no sacred associations.
Wai Kaurū	Wadable, however there is uncertainty about water quality and concern about potential risks.
Wai Kino	Dangerous/polluted water. The mauri (life force) of the water has been altered through pollution and has the potential to do harm to all living things (including humans and ecosystems). Also refers to dangerous water such as rapids.
Wai Mate	This is effectively dead water. It cannot sustain life. It is dangerous to all living things (including humans and ecosystems) because it can cause illness or misfortune.

Note - The colours used to help illustrate the scale of Wai Mate to Wai Ora are the same used to illustrate the attribute states in the NOF. This does not indicate equivalence of the scales.

Sub-catchment areas	Flora and fauna		Teanga species		Wāhi Tapu		Relationship audit		Mātauranga	
	S	M	S	M	S	M	S	M	S	M
Te Awa Kairangi small forested	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Awa Kairangi Forested mainstems	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Awa Kairangi Rural mainstems	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Awa Kairangi rural streams	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Awa Kairangi urban streams	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Awa Kairangi Lower mainstem	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Hutt Estuary	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Te Whanganui-a-Tara (outer harbour)	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue

Notes

1) The ūnga illustrated are largely based around flora. This recognises that reestablishment of fauna may follow on a slightly longer timeframe.

1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.

1) Top end of the catchment is not accessible, while the bottom is accessible but modified.

Timeframe descriptions

S - Now - 10 year timeframe
 M - 10 - 30 year timeframe
 L - 30+ year timeframe

12.5 Kaupapa ūnga summary for Waiwhetū

Sub-catchment areas	Water Quality			Mahinga Kai			Habitat			
	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L	
Waiwhetū Stream										
Notes	<p>1) The assessment and ūnga for this Kaupapa are driven by the E. coli attribute.</p> <p>2) Developing a cultural framework for allocation is sought in the short term for all of the small streams and large.</p>	<p>1) Assessments and ūnga are expressed around the 'swimmable' attribute for this kaupapa.</p> <p>2) Developing a cultural framework for allocation is sought in the short term for all of the small streams and large.</p>	<p>1) Assessments and ūnga are expressed around the 'swimmable' attribute for this kaupapa.</p> <p>2) Developing a cultural framework for allocation is sought in the short term for all of the small streams and large.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	<p>1) There is high variation in the individual attribute assessments, making an overall kaupapa assessment difficult. This range covered some Wai Kautū, some Wai Kino and some Wai Mate. The hatched colour reflects this range.</p> <p>2) Ūnga are shown as Wai Māori in medium term - though riparian cover attribute is seeking Wai Māori by short term and Wai Ora in long term.</p> <p>3) Some attributes seek faster time frames to Wai Ora than shown.</p>	
Notes	<p>1) The ūnga illustrated are largely based around flora. This recognises that reestablishment of fauna may follow on a slightly longer timeframe.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>

Scale level	Description
Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wai Māori	This is referred to as ordinary water which runs free or unrestrained and it has no sacred associations.
Wai Kautū	Useable, however there is uncertainty about water quality and concern about potential risks.
Wai Kino	Dangerous/polluted water. The mauri (life force) of the water has been altered through pollution and has the potential to do harm to all living things (including humans and ecosystems). Also refers to dangerous water such as rapids.
Wai Mate	This is effectively dead water. It cannot sustain life. It is dangerous to all living things (including humans and ecosystems) because it can cause illness or misfortune.

Note – The colours used to help illustrate the scale of Wai Mate to Wai Ora are the same used to illustrate the attribute states in the NOF. This does not indicate equivalence of the scales.

Timeframe descriptions
S - Now - 10 year timeframe
M - 10 - 30 year timeframe
L - 30+ year timeframe

Sub-catchment areas

Sub-catchment areas	Flora and fauna			Taonga species			Wāhi Tapu			Relationship audit			Mātauranga		
	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L	Kaupapa assessment	Ūnga S M L	Ūnga S M L
Waiwhetū Stream															
Notes	<p>1) The ūnga illustrated are largely based around flora. This recognises that reestablishment of fauna may follow on a slightly longer timeframe.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>	<p>1) Kaupapa assessment is largely driven by intergenerational knowledge transfer. There are not enough people to give effect to this.</p>

tekau mā toru

KOROKORO: HE TAONGA



13 Korokoro: He Taonga

TE KOROKORO STREAM: A CULTURAL TREASURE

13.1 Te whakamārama i Korokoro

Describing Korokoro

! Wai Kautū - wadeable - state of uncertainty and risk

Mana Whenua are very concerned about Te Korokoro o Te Mana and they regard it overall as being Wai Kautū, or only having the confidence to wade in it, based on the Te Oranga Wai Mana Whenua assessment. It would not support full immersion.

This is largely due to a lack of formal monitoring and information about water quantity and quality in the catchment. Anecdotal evidence suggests that the awa is degrading, with invasive plant species choking out mahinga kai species and prolonged sedimentation plumes from plantation pine pruning and other forestry activities. Expected pine harvest in the headwaters is considered a significant threat to the stream and its receiving environment. It is recommended that existing pines are not harvested in this catchment.

Despite this, Te Korokoro o Te Mana retains many important values for Māori, and Mana Whenua hold an aspiration for the entire length of the waterbody to be restored to its former pristine state. Te Korokoro o Te Mana is a taonga for Taranaki Whānui and it is also a site of significance.

Korokoro Stream is recognised and protected as an exemplar catchment, commensurate with its cultural status as Te Korokoro o Te Ika a Maui (the throat of the fish of Maui). This is reflected in the gurgling sounds made by the stream. Te mātāpuna of the Korokoro Stream are still pristine and have provided Taranaki

Whānui with a vital supply of high-quality drinking water for the Pito-one Pā for many generations. The stream is of exceptional value to iwi due to the abundant spiritual sustenance it provides. Whānau (family group), hapū and iwi carry out rituals, collect rongoā and continue to share stories of its healing practices and teachings. It is also tōhu tūpuna for the hapū of Taranaki Whānui and Te Ātiawa as a vital food and water supply.

The mouth of the Korokoro Stream is an important source of mahinga kai, particularly renown for whitebait, longfin tuna and shortfin tuna. The Pito-one Pā / Te Tatau o te Po on the Petone foreshore is a significant wāhi ahurea (historic) site positioned near the mouth of Te Korokoro o Te Mana.

It is envisaged that the new Te Ara Tupua shared pedestrian and cycle path that links Wellington and Lower Hutt will raise the profile of the stream and give it a stronger connection with the wider community. Mana Whenua consider Te Ara Tupua an important opportunity to focus efforts on stream restoration as part of this development.

Areas in the Korokoro catchment



Sites of significance for Mana Whenua

- 12. Te Korokoro o Te Mana (Korokoro Stream mouth)

13.2 Ngā whaingā mō Korokoro

Objectives for Korokoro

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for the Korokoro Stream.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>The awa is recognised and considered as whānau and taonga by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Te mātāpuna (headwaters)	<p>The waters of te mātāpuna are pristine and are not to be used for recreational or commercial fishing purposes.</p> <p>Mana Whenua have access to te mātāpuna, and their rights as kaitiaki are in place so that they can access natural resources for customary purposes, and can make decisions around the use, restoration, monitoring and protection of te mātāpuna including through the use of whakatapu (placing of rāhui) and whakanoa (removal of rāhui).</p>	Short term
Āku waiheke (small streams) and ngā wai huna (concealed waters)	<p>The small streams like Speedy's Stream, Stokes Valley Stream, and all other tributaries including ngā wai huna (concealed waters) and aquifers, are enhanced:</p> <ol style="list-style-type: none"> 1. By naming piped or unrecognised streams. 2. All āku waiheke and ngā wai huna traditional names are used. 3. All āku waiheke and ngā wai huna that are not named or have anglicised names are given traditional Māori names under the guidance of Mana Whenua. 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Monitoring for water quality/quantity and for the presence of indigenous biodiversity. <p>Streams that are currently piped are daylighted as far as practicable and are able to take their natural form and path.</p> <p>Where streams cannot be daylighted, their ecological values are recognised.</p> <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āhua	<p>The awa has a natural variation of flows. The stream is able to meander and has natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest and the forest floor.</p> <p>The voice of the awa can be heard. The presence of native flora and fauna can be observed and heard in the water spaces.</p> <p>The voice of the awa reflects the natural variations in flow, the movement of bed material and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it is a place of beauty and it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	Long term
Ngā mahi a ngā tūpuna	<p>We show respect for the awa and our tūpuna by ensuring that all waterbodies are clean and healthy.</p> <p>The river corridor is sufficiently shaded by vegetation so that kaumātua (elders) and whānau can sit on its banks and receive spiritual sustenance from mahi pārekareka (relaxation and recreation) ki te wai (being beside the awa).</p>	Short term
Te nui o te wai	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna (headwaters) and āku waiheke (small streams) through to takutai moana (the sea), 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. all life stages of taonga species are catered for, including drift-feeding fish, 4. the natural rhythms and hydrology are supported, 5. there is connectivity between the awa and its banks to support spawning fish, 6. the bed of the awa does not dry up during summer months, and 7. it supports an abundant and diverse range of aquatic life, including microbes, invertebrates, indigenous fish species, native birds and indigenous plants. 	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana o te tangata	<p>Mana Whenua exercise their rights as kaitiaki, and mana whakahaere is in place so that iwi, hapū and marae:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how the awa will be managed, 2. are contributing to the community's understanding of te ao Māori, Mana Whenua values and historical relationship with the awa, 3. can use mātauranga Māori, Mana Whenua ecological monitoring, and observational data to inform decision-making around the awa, 4. can practise manaaki ruranga, the sharing of management of the awa, with the wider community and existing care groups, and 5. can exercise whakatapu (making tapu) and whakanoa (making free from tapu, or noa). 	Short term
Te mahi kai/ mahinga kai	<p>The whole catchment supports the entire life cycle of mahinga kai species.</p> <p>Mahinga kai species are safe to harvest and eat.</p>	Medium term
	<p>At mahinga kai sites like Te Korokoro o Te Mana (the mouth of the Korokoro Stream) these fish and macroinvertebrates are present: longfin tuna, shortfin tuna, īnanga, kōura, and kākahi.</p> <p>At mahinga kai sites plant species like harakeke are present.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest and eat or use, and are plentiful enough for long-term harvest, including for manuhiri and to exercise manaakitanga.</p>	Medium term
	<p>Mana Whenua are able to make decisions around the harvest of mahinga kai, like harakeke, and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing, that are able to be enforced, 4. practise tikanga and other preferred methods of harvest safely and at the most appropriate time of the year, and 5. exercise customary practice to the extent desired. 	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Wāhi whakarite	<p>The awa and the area surrounding Te Tatau o te Pō Marae is clean and safe to interact with and there is space for whānau to:</p> <ol style="list-style-type: none"> 1. access traditional pā sites, 2. access traditional wāhi mahara (places of learning) to share information about local knowledge and histories of the landscape, 3. practise rituals like planting at Puanga/Matariki, 4. hold wānanga to continue practices like living by the maramataka (lunar calendar), 5. collect water to use in mauri/mouri-enhancing ways including waitohi and mate, and 6. share intergenerational knowledge and resources with whānau and manuhiri. <p>A pedestrian access from Honiana Te Puni Reserve across State Highway 2 to Te Korokoro o Te Mana is reinstated to allow traditional mai uta ki tai.</p>	Short term
Taonga species	<p>The water conditions, level and habitat in the awa, its tributaries, and the Korokoro Estuary, support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs, including kōura and kākahi, 2. at-risk and threatened indigenous fish species like banded kōkopu, bluegill bully, smelt, giant kōkopu, kōaro, longfin and shortfin tuna and redfin bully,²⁷ 3. īnanga, and īnanga spawning habitat, at the lower reaches of the estuary, and 4. native birds. <p>The lower reaches provide healthy īnanga spawning habitat.</p> <p>The Korokoro Estuary is prioritised for protection and restoration so that it is a healthy functioning estuary.</p>	Medium term
Wāhi mahara (places of learning and where local knowledge and histories are etched into the landscape)	<p>Kei te ora te mauri/mouri (the mauri/mouri of the place is intact) and customary resources are available so that Mana Whenua can safely access and harvest rongoā (traditional medicines), raranga (weaving material) and mahinga kai.</p> <p>Mana Whenua are able to access the awa and exercise customary practices like tohi (baptism), karakia (prayer), waerea (protective incantation) and tuku iho (gifting of knowledge and resources to future generations).</p>	Access for Mana Whenua is a short-term goal, all other outcomes are medium term.

²⁷ See Schedule F4 and Map 19 of the PNRP.

13.3 Kaupapa ūnga summary for Korokoro

Sub-catchment areas	Water Quality			Mahinga Kai			Habitat					
	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L
Korokoro Stream	Yellow	Green	Blue	Red	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Korokoro Estuary	Yellow	Green	Blue	Red	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Notes	<p>1) The assessment and ūnga for this Kaupapa are driven by the E. coli attribute.</p> <p>Most other attributes for this kaupapa are Wai Ora or Wai Māori.</p>											
Notes	<p>1) Developing a cultural framework for allocation is sought to lift this attribute to Wai Ora in the short term.</p>											
Notes	<p>1) Wai ora in many attributes, others Wai Kaiti reflecting uncertainty and further knowledge is needed. The hatched colour reflects this range. High expectation to maintain Wai Ora where it is already, and reach Wai Ora in the short term for those Wai Kaiti attributes.</p>											

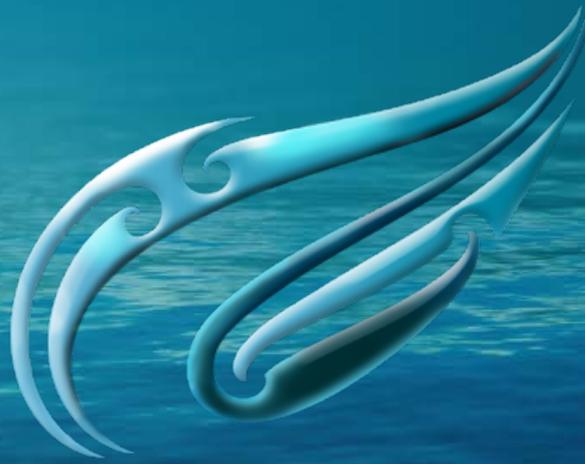
Scale level	Description
Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wai Māori	This is related to as ordinary water which runs free or unrestrained and it has no sacred associations.
Wai Kaiti	Wadeable, however there is uncertainty about water quality and concern about potential risks.
Wai Kīho	Dangerous/polluted water. The mauri (life force) of the water has been altered through pollution and has the potential to do harm to all living things (including humans and ecosystems). Also refers to dangerous water such as rapids.
Wai Mate	This is effectively dead water. It cannot sustain life. It is dangerous to all living things (including humans and ecosystems) because it can cause illness or misfortune.

Note – The colours used to help illustrate the scale of Wai Mate to Wai Ora are the same used to illustrate the attribute states in the NOF. This does not indicate equivalence of the scales.

Sub-catchment areas	Flora and fauna			Taonga species			Wāhi Tapu			Relationship audit			Mātauranga			Timeframe descriptions			
	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	Kaupapa assessment	Ūnga S	Ūnga M	Ūnga L	S - Now - 10 year timeframe	M - 10 - 30 year timeframe	L - 30+ year timeframe
Korokoro Stream	Yellow	Green	Blue	Red	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Korokoro Estuary	Yellow	Green	Blue	Red	Orange	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Notes	<p>1) Wai Kaiti assessment is driven by pine forest in Korokoro. Refining this is priority for reaching Wai Ora in the medium term</p>																		
Notes	<p>1) Knowledge exchange is currently Wai Ora.</p>																		
Notes	<p>2) Health of taonga species and their habitat is Wai Kaiti, with Wai Ora sought in the short/medium term.</p>																		

tekau mā whā

TE TĀONE O PŌNEKE



14 Te tāone o Pōneke

WELLINGTON URBAN

14.1 Te whakamārama i Kaiwharawhara me ētahi atu awa o te tāone o Pōneke

Describing Kaiwharawhara and other Wellington urban streams

 **Wai Kino - contaminated by human waste**

The Wellington Urban FMU is made up of a number of urban streams including the larger Kaiwharawhara, Karori and Ōwhiro awa. Te Manga o Kaiwharawhara (including Te Mahanga and Korimako streams) are Ngā Taonga Nui a Kiwa (the treasured inheritance of Kiwa refers to those waterbodies of most importance to Mana Whenua identified in Schedule B of the PNRP) for Taranaki Whānui.

Kaiwharawhara and other urban streams are assessed as Wai Kino on the Mana Whenua assessment framework. This is due to the presence of human waste (*E. coli*) in these streams, which poses a risk to life and means that contact with the water should be avoided. It is noted that not all urban streams are monitored for contaminants, however, the dilapidated state of residential and commercial waste and stormwater systems means that, unless stated otherwise, the assumption is that they are contaminated with *E. coli*.

Kaiwharawhara is the largest stream system in Wellington City and one of the few remaining tributaries that has a relatively natural estuary mouth into the harbour. The stream runs around the west of Te Ahumairangi (Tinakori Hill), the maunga (mountain) from which five streams flow that traditionally sustained the city of Wellington. As a result, Te Manga o Kaiwharawhara and its environs are considered significant to both the history and continued wellbeing of Mana Whenua. The stream is also a site of wāhi whakarite (preparing for an important activity/event) and was used for rituals such as planting at Puanga/Matariki. The Kaiwharawhara Pā was located near the stream mouth and remains a significant site for Taranaki Whānui, forming the original gateway into Wellington.



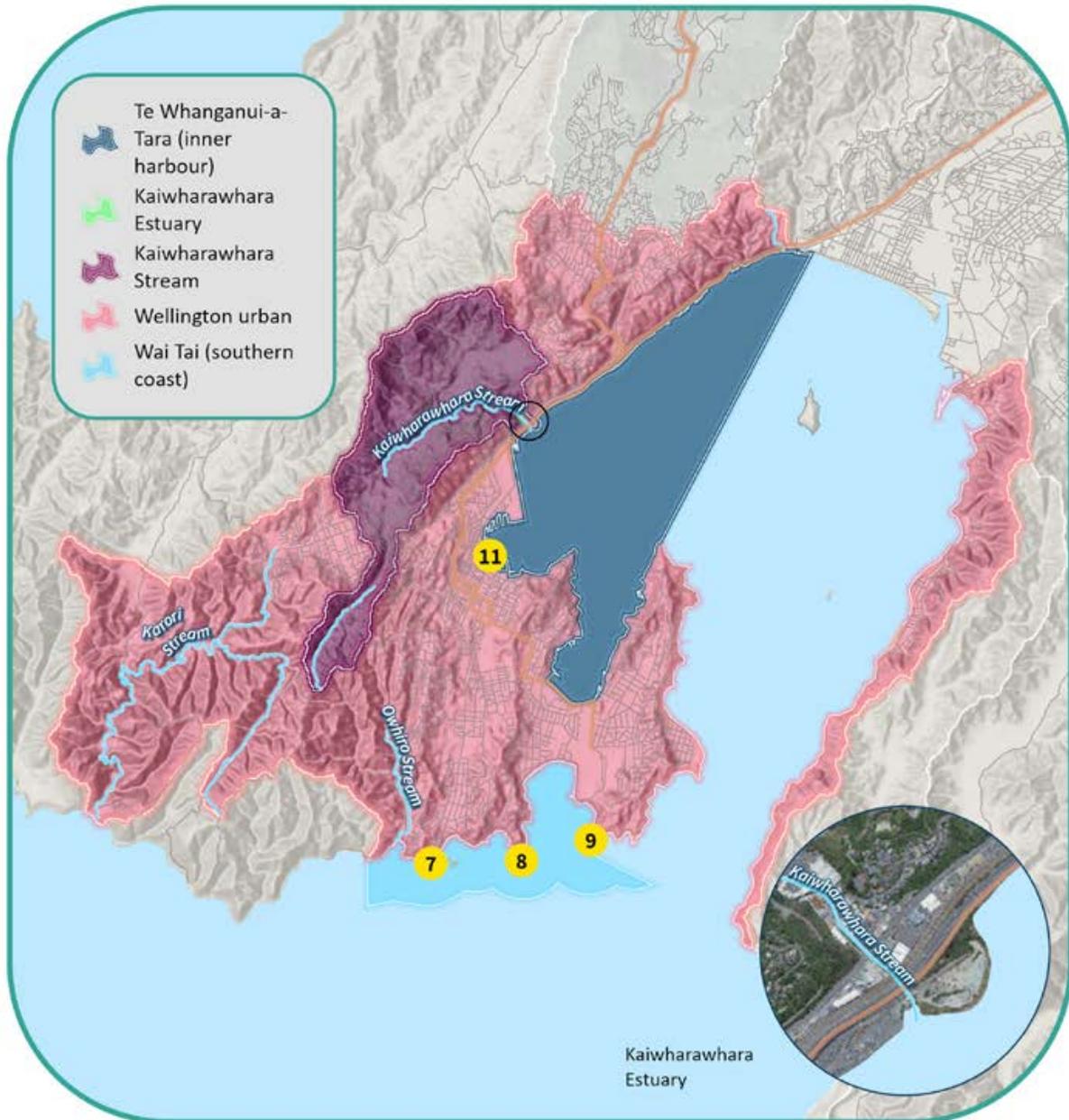
Despite the surrounding environment being heavily urbanised and the stream experiencing pressures from urban land uses, such as from stormwater, the Kaiwharawhara Stream has high ecological and cultural values. Kia Mauri/mouriora te Kaiwharawhara (Sanctuary to Sea) is a project funded to continue the creation and restoration of indigenous fish habitat, which includes spawning sites. Monitoring is also carried out at Zealandia, in which te mātāpuna are found.

In Karori, the stormwater runoff from the urban environment is primarily responsible for the poor health of the Karori Stream. *E. coli* is a dry and wet weather problem in Karori, which suggests there is sewage going in all the time. In addition, the sewage discharge at Karori Stream mouth is of particular concern to Mana Whenua as the effects of the activity on mahinga kai and cultural use are neither monitored nor understood.

The āku waiheke (small streams), such as Te Māhanga, Waimapihi, Kumutoto, Korimako Stream, Akiwai, Waitangi Stream and many others within Wellington City, have been piped and covered over by roads and buildings. Their mana and mauri are lost to the community and Mana Whenua retain an aspiration for their restoration and return to the world of light.

Mana Whenua want to restore both the mana and the water quality of the Kaiwharawhara and other urban streams. Suggested management methods focus on strengthening Mana Whenua and community engagement and buy-in through mātauranga Māori monitoring and restoration. Longer term improvements require a complete upgrade of existing wastewater and stormwater networks.

Areas in the Wellington urban catchment



Sites of significance for Mana Whenua

- 7. Tapu te Ranga - Owhiro - Haewai
- 8. Te Raekaihau Point reef
- 9. Hue te Taka (Wellington south coast)
- 11. Te Aro pā

14.2 Ngā whāinga mō Kaiwharawhara me ētahi atu awa o te taone o Pōneke

Objectives for Kaiwharawhara and other Wellington urban streams

These are a complete list of ngā huanga of Te Kāhui Taiao for the Wellington urban streams.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>The awa are recognised and considered as whānau and taonga by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Te mātāpuna	<p>Te mātāpuna (the headwaters) are places of great beauty, the waters are pristine and are not to be used for recreational or commercial fishing purposes.</p> <p>Mana Whenua have access to te mātāpuna (the headwaters) and make decisions around its use, restoration and protection, including using whakatapu (placing of rāhui) and whakanoa (removal of rāhui).</p>	Short term
Āku waiheke/ ngā wai huna	<p>The āku waiheke (small streams), such as Te Māhanga, Korimako streams, Akiwai, Waitangi streams and Days Bay Stream, including ngā wai huna (concealed waters) and aquifers, are enhanced:</p> <ol style="list-style-type: none"> 1. By naming piped and unrecognised streams. 2. All āku waiheke and ngā wai huna traditional Māori names are used. 3. All āku waiheke and ngā wai huna that are not named, or have anglicised names, are given traditional Māori names under the guidance of Mana Whenua. 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Monitoring for water quality/quantity and for the presence of indigenous biodiversity and ecological function. <p>Streams that are currently piped are daylighted, as far as practicable and are able to take their natural form and path.</p> <p>Where streams cannot be daylighted, their ecological values are recognised.</p> <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	All are short-term outcomes except for re-naturalisation of the stream which is a medium-term action.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āhua	<p>The awa has a natural variation of flows. The stream is able to meander and has natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest, and the forest floor.</p> <p>The voice of the awa can be heard. The presence of native flora and fauna can be observed and heard in the water spaces.</p> <p>The voice of the awa reflects the natural variations in flow, the movement of bed material and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it is a place of beauty and it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	<p>The existing restorative works contributing to āhua (natural look) is short term.</p> <p>Otherwise huanga are long term.</p>
Ngā mahi a ngā tūpuna	<p>We show respect for our awa, estuarine and coastal waterbodies and tūpuna by ensuring that all waterbodies are clean and healthy.</p>	Medium term
Te nui o te wai	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna and āku waiheke through to takutai moana (the sea), 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. Mana Whenua can practise cultural immersion and other traditional modern cultural uses, 4. all life stages of taonga species are catered for, including drift-feeding fish, 5. the natural rhythms and hydrology of the river are supported – the awa can be calm, but she is also allowed to be riri (angry), 6. the flow is sufficient so that it keeps the river mouth open, 7. there is connectivity between the awa and its banks to support spawning fish, 8. the bed of the awa does not dry up during summer months, and 9. it supports an abundant and diverse range of aquatic life including microbes, invertebrates, indigenous fish species, native birds and indigenous plants. 	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana o te tangata	<p>Mana Whenua rights as kaitiaki and mana whakahaere are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how the awa is managed, 2. can use mātauranga Māori, Mana Whenua ecological monitoring and observational data to inform decision-making around the awa, 3. are able to exercise customary practices within the taiao such as harvesting rongoā, 4. can share a diverse range of mātauranga Māori with whānau and this includes knowledge around rongoā, astrology, horticulture and fishing, and 5. can practise manaaki ruranga, the sharing of management of the awa, with the wider community and existing care groups. 	Short term
Wāhi tapu, wāhi tupuna, wāhi maumahara	<p>Significant sites that are wāhi tapu (sacred place), wāhi tupuna (significant ancestral) and/or wāhi maumahara (places with significant history) include:</p> <ol style="list-style-type: none"> 1. Tapu te Ranga, Ōwhiro and Haewai 2. Te Raekaihau Point Reef, and 3. Te Tangihanga-a-Kupe (Barrett Reef). <p>At these sites, whānau are able to carry out rituals and ceremonies that include:</p> <ol style="list-style-type: none"> 1. tohi (baptism), 2. karakia (prayer), 3. waerea (protective incantation), 4. whakatapu and whakanoa (placing and removal of rāhui), and 5. tuku iho (gifting of knowledge and resources to future generations). 	Short term
	<p>Wāhi tapu, wāhi tupuna and/or wāhi maumahara sites support the healthy wairua of the tangata (people) because:</p> <ol style="list-style-type: none"> 1. Whānau have access to these sites and manage them according to tikanga. 2. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater management for wāhi tapu sites that includes (but is not limited to) monitoring and restoration. 3. The wai is clean and safe for use. 	
Te mahi kai/ mahinga kai	<p>The whole catchment supports the entire life cycle of mahinga kai species.</p> <p>Mahinga kai species are safe to harvest and eat.</p>	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>Mahinga kai sites include the Kaiwharawhara Stream, its tributaries and the Kaiwharawhara Estuary, Tapu te Ranga, Ōwhiro Bay, Haewai (on the south coast of the Wellington Peninsula) and Whiorau/Lowry Bay</p> <p>Mahinga kai sites of significance also include Te Raekaihau Point Reef, Te Tangihanga-a-Kupe (Barrett Reef), Hue te Taka Peninsula and Te Aro Pā.</p> <p>At mahinga kai sites, these fish and macroinvertebrate species are present: longfin tuna, shortfin tuna, piharau (lamprey), kōura, kākahi, pāua, pipi, kina and mussels.</p> <p>At mahinga kai sites, these plant species are present: wharawhara, kiekie, harakeke, pūhā and poroporo.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.²⁸</p>	Medium term
	<p>At mahinga kai sites, kei te ora te mauri/mouri (the mauri/mouri of the place is intact) and Mana Whenua can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. practise tikanga and preferred methods of harvest for kai, 3. exercise customary practices to the extent desired, 4. transfer knowledge on the preparation, storage and cooking of kai, and 5. make decisions around the protection and restoration of wai and taiao where mahinga kai is present/practised. This could include through the use of customary practices like rāhui. 	
Wāhi whakarite	<p>The water is clean and safe to interact with, and the river margins are safe and there is space for whānau to:</p> <ol style="list-style-type: none"> 1. access traditional pā sites, 2. practise rituals like planting at Puanga/Matariki, 3. hold wānanga to continue indigenous practices like living by the maramataka (lunar calendar), 4. collect water to use in mauri/mouri-enhancing ways including waitohi (traditional baptismal ceremonies) and mate, and 5. share intergenerational knowledge and resources with whānau and manuhiri. 	Short term

²⁸ See Schedule C4 and Map 6 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Taonga species	<p>The water conditions, level and habitat in the awa, estuary and ocean support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs, including kōura and kākahi, and 2. at-risk and threatened indigenous fish species like banded kōkopu, giant kōkopu, shortjaw kōkopu, inanga (which spawn at the Karori Stream mouth's tidal zone), kōaro, redfin bully, bluegill bully, giant bully, longfin tuna and shortfin tuna.²⁹ <p>The lower reaches provide healthy inanga spawning habitat.</p>	Medium term
Contact recreation and Māori customary use/taunga ika (fishing grounds)	<p>The health of the wai at takutai moana (the sea) is prioritised for improvement for contact recreation and Māori customary use at:</p> <ol style="list-style-type: none"> 1. Ōwhiro Bay, 2. Island Bay (in particular, Derwent Street, Reef Street and Island Bay Surf Club), and 3. Wellington Harbour (in particular, Harris Street, Hunter Street and Tory Street). <p>So that Mana Whenua can connect with these waterbodies through a range of activities without getting sick and/or developing skin rashes, including te mahi hi ika (fishing), kaukau (swimming) and rukuruku (diving).</p> <p>The water levels in traditional swimming places should not drop below hip level.</p>	Medium term
Swimming	The water is suitable for primary contact throughout the catchment.	Long term

²⁹ See Schedule F1 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Takutai moana	<p>The Kaiwharawhara Estuary is prioritised for protection and restoration so that:</p> <ol style="list-style-type: none"> 1. it is a healthy functioning estuary, 2. the water conditions and habitat in the estuary support the presence, abundance, survival and recovery of 11 at-risk and threatened indigenous fish species: banded kōkopu, bluegill bully, common bully, giant bully, giant kōkopu, īnanga, kōaro, longfin eel, redfin bully, shortfin eel and shortjaw kōkopu,³⁰ 3. the smell at the bottom of the Kaiwharawhara Stream is no longer offensive but smells like clean freshwater and saltwater, and 4. there is plentiful mahinga kai species like longfin, shortfin tuna, īnanga and piharau that are safe to harvest and consume. <p>Kia Mauri/mouriora te Kaiwharawhara (the Sanctuary to Sea project) is funded to continue the creation and restoration of indigenous fish habitat including spawning sites.</p>	<p>Funding for Sanctuary to the Sea is prioritised in the short term.</p> <p>All other huanga are long term.</p>

³⁰ The Kaiwharawhara Stream mouth/estuary is a site of significance for indigenous biodiversity values in the coastal marine area (see Map 19 in the PNRP).

14.3 Kaupapa ūnga summary for Kaiwharawhara and Wellington urban

Attachment 2 to Report 24.89

Sub-catchment areas	Water Quality			Water Quality			Mahinga Kai			Habitat			Scale level	Description
	Kaupapa assessment	S	M	Kaupapa assessment	S	M	Kaupapa assessment	S	M	Kaupapa assessment	S	M		
Kaiwharawhara Stream	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Kaiwharawhara Estuary	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wellington urban	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wai Tai (southern coast)	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Te Whanganui-a-Tara (inner harbour)	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	[Red]	Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Notes	<p>1) The assessment and ūnga for this Kaupapa are driven by the E. coli attribute. Mana Māori perspective of overflows with tūae means this water cannot be used.</p> <p>1) Developing a cultural framework for allocation is sought to fit this attribute to Wai Ora in the short term.</p> <p>1) Coastal areas, in particular for finfish, were assessed to be in better state for some of the attributes. Hatched colour reflects this range.</p> <p>2) Wai Ora is sought in the short term for knowledge exchange.</p> <p>1) Awa with open areas are Wai Māori for the riparian vegetation and sound attributes. Piping, fish passage barriers and channel modification in lower reaches mean those awa are Wai Kino for those attributes. The hatched colour reflects this range.</p> <p>2) The high variation in starting conditions for each attribute also means there's high variation in timeframes to reach Wai Māori and Wai Ora. Some piped streams may only reach Wai Kauti in the long term.</p> <p>3) No assessment or ūnga in some coastal places as yet.</p>													

Sub-catchment areas	Flora and fauna			Taonga species			Wahi Tapu			Relationship audit			Mātauranga			Timeframe descriptions	
	Kaupapa assessment	S	M	Kaupapa assessment	S	M	Kaupapa assessment	S	M	Kaupapa assessment	S	M	Kaupapa assessment	S	M		L
Kaiwharawhara Stream	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	L - 30+ year timeframe
Kaiwharawhara Estuary	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	M - 10 - 30 year timeframe
Wellington urban	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	S - Now - 10 year timeframe
Wai Tai (southern coast)	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	L - 30+ year timeframe
Te Whanganui-a-Tara (inner harbour)	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	L - 30+ year timeframe
Notes	<p>1) There is high variation in the individual attribute assessments, making an overall Kaupapa assessment difficult. The hatched colour reflects this range. This variation for each attribute and area also means there's high variation in timeframes for ūnga to reach Wai Māori and Wai Ora.</p> <p>2) Streams are Wai Kauti and Kino because of barriers to fish migration through wai ki tai.</p> <p>3) Coastal areas are Wai Mate and Wai Māori due to the flora attribute.</p> <p>1) Wai Ora is sought faster than shown for knowledge exchange.</p>																

Note - The colours used to help illustrate the scale of Wai Mate to Wai Ora are the same used to illustrate the attribute states in the NOF. This does not indicate equivalence of the scales.

tekau mā rima

TAPU-TE-RANGA KI ŌMERE, KI MAKARA



15 Tapu-te-ranga ki Ōmēre, ki Makara

SOUTHWEST COAST

The Southwest Coast comprises the Karori and South Karori streams, the Makara Stream, estuary and coast and the many tributaries that feed into these waterbodies. The continued connectivity between these streams to the coast is of critical importance to Mana Whenua.

South of the Karori whaitua (catchment) are a number of wāhi tupuna and wāhi tapu of significance to Ngāti Toa Rangatira and Taranaki Whānui, which include Te Rimurapa/

Sinclair Head and Pariwhero/Red Rocks. These ancestral and sacred places are also sites where mahinga kai is harvested and hī ika (line fishing for kaimoana) is practised.

15.1 Te whakamārama i Karori, Makara me ētahi atu awa takutai me ngā wāhi ngūtu awa

Describing Karori, Makara and other coastal streams and estuarine areas

! Wai Kautū - wadeable - state of uncertainty and risk

Southwest Coast is regarded as being in a state of uncertainty and risk based on the Te Oranga Wai Mana Whenua assessment. This is in part due to a lack of information and monitoring on the impact of wastewater discharges on the inter-tidal marine environment and mahinga kai areas. The vulnerability of small streams to discharge, and damage from stock and septic tanks, which are both currently unmanaged, is an ongoing risk.

Mana Whenua seek to become directly involved in the monitoring and management of the Southwest Coast and its waterbodies to ensure a pathway to improvement is planned and implemented inclusive of mātauranga-a-Māori (Māori knowledge) This includes the setting of Te Oranga Wai target states for coastal and rural streams and wastewater discharge areas.

Despite the uncertainty surrounding these waterbodies, they remain taonga for Mana Whenua.

The Makara Stream is located on the outskirts of Wellington City and flows in a north-westerly direction, through predominantly pastoral land, before entering the sea at Ohariu Bay. There are many āku waiheke (small streams) and ngā wai huna (concealed waters) in the whaitua that flow into the Makara Stream. These have unique values that must be recognised and protected.

The stream and its corridor support many mahinga kai plants, like puha and fernroot, and mahi rāanga plants like harakeke and raupō, for weaving and for rongoā (healing). While the most noteworthy Mana Whenua values in this area are mahinga kai and kaimoana, the estuary is also recognised for other special values such as waka, healing from the ocean, and the cleansing rongoā of the wind. Mana Whenua also value the connections with cousins across the ocean. Ohariu Pā is found on Makara Beach and is of significance to Ngāti Tama.

The Makara Estuary or river mouth is recognised as a significant natural wetland and is the only remaining salt marsh estuary on the Wellington Peninsula, and is an important refuge for feeding and nesting birds, such as pied shag, red-billed gull, white-fronted tern, black shag, pied stilt and variable oystercatcher. The salt marsh also provides seasonal or core habitat to threatened indigenous fish species like longfin eel, giant kōkopu, kōaro, inanga, redfin bully, bluegill bully and piharau.

Te Kāhui Taiao met with Mana Whenua at Takapūwāhia Marae on 12 April 2021. We heard from them that whānau could traditionally swim, harvest and consume kaimoana like tuna, mullet and pipis, without becoming māuiui (unwell). Areas where paua once lived have now completely disappeared, except in Ohau

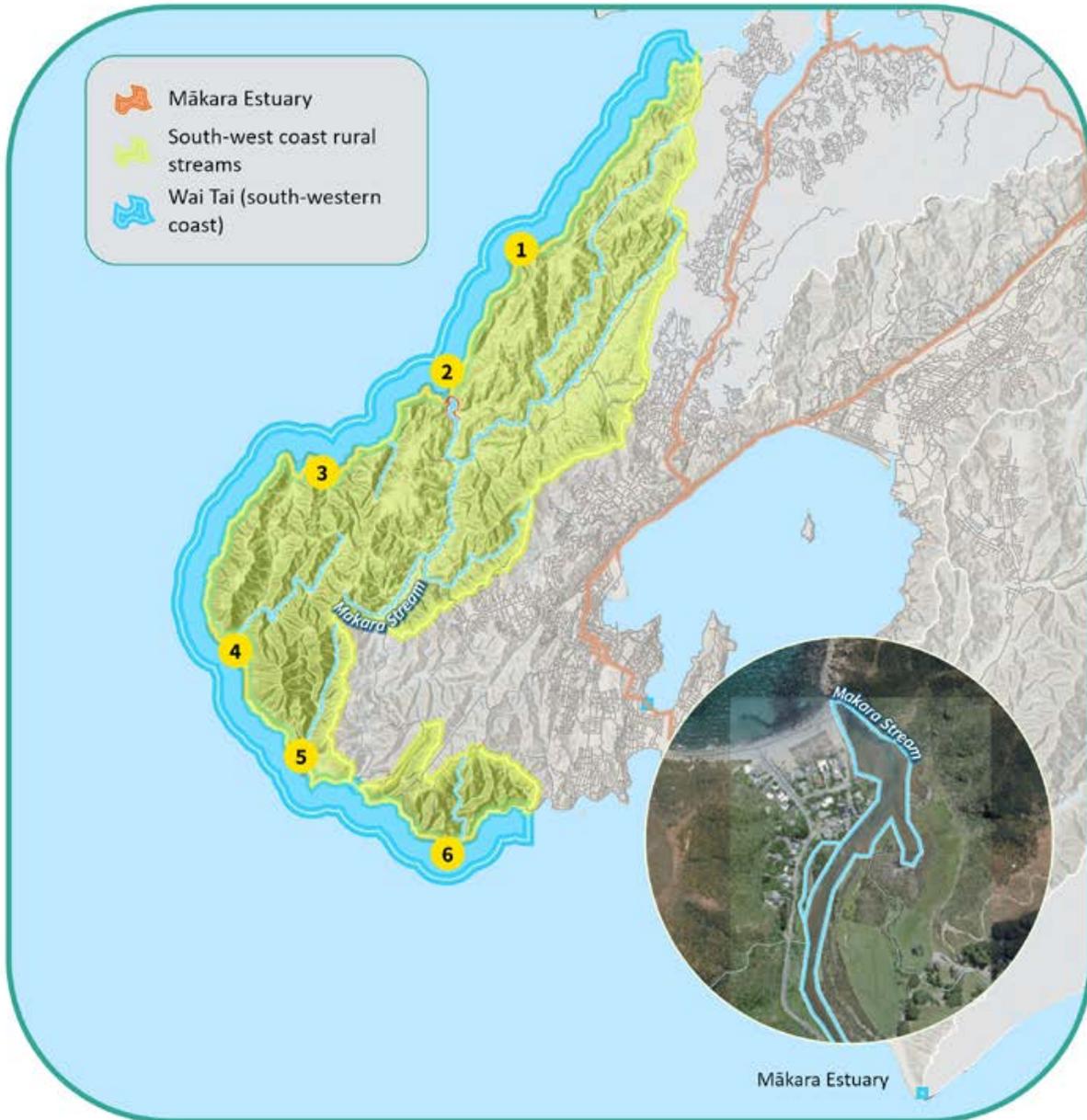
North where there are lots of small, undersized paua. There is also immense pressure on coastal resourcing from poaching.

The water level in Te Manga o Makara water is currently very low, which is possibly affected by cumulative water takes. There is also a real risk that the cumulative impacts of rural septic systems and discharges are increasing the amount of *E.coli* in the stream. The Makara Stream and tributaries are characterised by having narrow channels and low flows relative to their length and the scale of the steep landscape they drain. Their relatively small size makes them disproportionately vulnerable to *E. coli* and sedimentation caused by cattle grazing and plantation forestry. Their small size also means they are not currently protected under the existing stock exclusion provisions in the PNRP.

A lot of regeneration of native forest is occurring around the Te Rawhiti wind farm where farming is slowly disappearing. Mana Whenua strongly support the retirement of this land and other rural areas from traditional farming (particularly cattle) to protect āku waiheke and te mātāpuna and the receiving coastal environment, and this is included as a recommendation in this document.

There are numerous wāhi tupuna (places associated with ancestors), wāhi tapu (places still sacred) and wāhi maumahara (places with significant history) sites at takutai moana (the sea) that are of significance to Ngāti Toa Rangatira and Taranaki Whānui. Most of these ancestral and sacred places, in addition to Korohiwa (on east coast of the harbour by Muritai), are sites where the harvest of mahinga kai and te mahi hī ika are practised.

Areas in the South-west coast, Mākara and Ōhariu catchment



Sites of significance for Mana Whenua

- | | |
|--|--|
| ● 1. Kie Kie/Kia Kia (Ngutu Kākā pā) (Pipinui Point) | ● 4. Ōterongo Bay |
| ● 2. Ōhariu - Wharehou Bay | ● 5. Waiariki Stream mouth and coast |
| ● 3. Te Ika a Maru - Ohau Bay | ● 6. Te Rimurapa - Pariwhero (Sinclair Head - Red Rocks) |

15.2 Ngā whāinga mō Karori, mō Makara me ētahi atu awa takutai me ngā ngūtu awa

Objectives for Karori, Makara and other coastal streams and estuarine areas

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for the Southwest Coast streams and receiving environment.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>The awa, estuarine and coastal waters are recognised and considered as whānau and taonga by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Āku waiheke/ ngā wai huna	<p>The small streams, like Ōteranga Stream, and all other tributaries, including ngā wai huna (concealed waters) and aquifers, are enhanced:</p> <ol style="list-style-type: none"> 1. by naming piped or unrecognised streams. 2. All āku waiheke and ngā wai huna traditional Māori names are used. 3. All āku waiheke (small streams) and ngā wai huna that are not named, or have anglicised names, are given traditional Māori names under the guidance of Mana Whenua. 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Monitoring for water quality/quantity and for the presence of indigenous biodiversity. <p>Streams that are currently piped are daylighted, as far as practicable and can take their natural form and path.</p> <p>Where streams cannot be daylighted their ecological values are recognised.</p> <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Tiaki whenua	<p>The land around small streams and awa is managed sensitively so that:</p> <ol style="list-style-type: none"> 1. the full extent of the banks of the awa and the river corridor from the headwaters to takutai moana (the sea) is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna, 2. adjoining farmland, like the Te Rāwhiti Wind Farm, is retired to allow native vegetation to regenerate, 3. the natural flow of the water down the awa is not constrained by instream structures. The awa can express its natural form and has a natural pattern of pools, runs and riffles, and 4. Mana Whenua are involved in the decision-making around activities that may have an adverse impact on these streams. 	Medium term
Ngā mahi a ngā tūpuna	We show respect for the awa and our tūpuna by ensuring that all waterbodies are clean and healthy.	Medium term
Te nui o te wai	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna and āku waiheke through to takutai moana (the sea), 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. all life stages of taonga species are catered for, including drift-feeding fish, 4. the natural rhythms and hydrology of the river are supported – the awa can be calm, but she is also allowed to be riri (angry), 5. the flow is sufficient so that it keeps the river mouth open, 6. there is connectivity between the awa and its banks to support spawning fish, 7. the bed of the awa does not dry up during summer months, and 8. it supports an abundant and diverse range of aquatic life including microbes, invertebrates, indigenous fish species, native birds and indigenous plants. 	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana o te tangata	<p>Mana Whenua rights as kaitiaki and mana whakahaere are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how awa are managed, 2. can use mātauranga Māori, Mana Whenua ecological monitoring, and observational data to inform decision-making of te mātāpuna through to takutai moana, 3. can exercise kaitiakitanga (guardianship) and manaakitanga (hospitality) through practices such as rāhui for mātaitai (coastal areas) on taonga species such as kōura (crayfish) and pāua, 4. are contributing to the community's understanding of te ao Māori, Mana Whenua values and historical relationship with the Makara coast through education and iwi-designed bollards and signs, and 5. can practise manaaki ruranga (manuhiri), the sharing of management of wai with the wider community and existing care groups. 	Short term
Wāhi tapu, wāhi tupuna and wāhi maumahara	<p>The following are significant wāhi tupuna, wāhi tapu and wāhi maumahara sites: Ōteranga Bay/Ōterongo Bay, Ōhariu Bay/Wharehau Bay, Waiariki Stream mouth and coast, Kie Kie/Kia Kia (Ngutu Kākā Pā) (Pipinui Point), Te Ika-a-Maru – Ōhau Bay, Te Rimurapa/Sinclair Head and Pariwhero/Red Rocks.³¹</p> <p>Wāhi tapu sites support the healthy wairua of the tangata (people) because:</p> <ol style="list-style-type: none"> 1. Whānau can access these sites and manage them according to tikanga. 2. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater and its receiving environments for wāhi tapu sites that includes (but is not limited to) monitoring and restoration. 3. The water is clean and safe for use. 4. Whānau can practise cultural rituals and ceremonies, such as tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu and whakanoa (placing and removal of rāhui) and tuku iho (gifting of knowledge and resources to future generations). 5. Whānau can practise tuku iho (transfer knowledge and resources to future generations) at these sites. 	Short term

³¹ See Schedules C3 and C4, and maps 5 and 6 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te Mahi Kai/ Mahinga kai	<p>The whole catchment supports the entire life cycle of mahinga kai species.</p> <p>Mahinga kai species are safe to harvest and eat.</p>	Medium term
	<p>The following are mahinga kai sites and sites of significance:</p> <ol style="list-style-type: none"> 1. Kie kie/Kia kia/Pipinui Point (formerly the site of the Ngutu Kākā Pā), 2. Ōhāriu Bay/Wharehau Bay and Te Ika-a-Maru/Ōhau Bay (important sites for Ngāti Toa Rangatira and Te Ātiawa/Taranaki Whānui that includes Wharehau Pā), 3. Ōteranga Bay/Ōterongo Bay (an important site for both Te Ātiawa/Taranaki Whānui and Ngāti Toa Rangatira), 4. Waiariki Stream mouth and coast 5. Korohiwa (on the east coast of the harbour by Muritai), and 6. Te Rimurapa/Sinclair Head and Pariwhero/Red Rocks.³² <p>At mahinga kai sites, fish and macroinvertebrate species like mullet, pātiki, pipi, pāua, kākahi, kōura and cockles are present.</p> <p>At mahinga kai sites, plant species like harakeke, raupō, karengo, pūhā and fernroot are present.</p> <p>Other mahinga kai, like stones used for tool making, mud for weaving dyes, and plants for rongoā (traditional medicine), are present.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.</p>	Medium term
	<p>Mana Whenua are able to make decisions around the harvest of mahinga kai and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage, and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing, that are able to be enforced, 4. practise tikanga and other preferred methods of harvest safely and at the most appropriate time of the year, and 5. exercise customary practices to the extent desired. 	All short term

³² See Schedules C3 and C4, and Maps 5 and 6 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Taonga species	<p>The water conditions, level and habitat in the awa, estuarine area and takutai moana (the sea) support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates that include kōura and kākahi, and 2. threatened and at-risk native migratory species, such as banded kōkopu, giant kōkopu, kōaro, inanga (which spawn at the Makara Stream mouth's tidal zone), common smelt, black founder/pātiki, mullet, piharau, longfin tuna, shortfin tuna, redfin bully, bluegill bully and upland bully.³³ <p>Fish barriers have been removed and fish passage is supported.</p> <p>The lower reaches provide healthy inanga spawning habitat.</p>	<p>Medium term for improved presence, abundance and survival of taonga species and water levels.</p> <p>Short-term timeframe for removal of fish barriers and Mana Whenua inclusion in freshwater decision-making.</p>
Contact recreation/Māori customary use	<p>The water in the awa and at takutai moana (the sea) is clean and cool and there are enough safe accessible sites that support a range of interactions so that:</p> <ol style="list-style-type: none"> 1. people can immerse themselves in water (swimming, bathing, diving, being in the water to replenish mauri/mouri) without getting sick and/or developing skin rashes, 2. rangatahi (youth) can do bombs in waterholes and can safely mahi pārekareka (relaxation and recreation) i te wai (play in the water), 3. the corridor and banks of the awa are easily accessible and shaded by native vegetation that allows elderly whānau to mahi pārekareka i te wai (relax alongside the awa), 4. the water levels in traditional swimming places do not drop below hip level, and 5. whānau can rukuruku (dive) for and harvest kaimoana. <p>Karori Stream is a significant contact recreation freshwater and coastal waterbody.³⁴</p>	<p>Long term</p>

33 See Schedule F1 of the PNRP.

34 See Schedule H2 of the PNRP Karori Stream is a significant contact recreation freshwater and coastal waterbody.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Takutai Moana	<p>The Makara Estuary is prioritised for protection and restoration so that it is a healthy functioning estuary that supports the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. threatened indigenous fish species, like longfin tuna, giant kōkopu, kōaro, inanga, redfin bully, bluegill bully, and piharau, and 2. feeding and nesting birds (year-round), such as pied shag, red-billed gull, white-fronted tern, black shag, pied stilt and variable oystercatcher.³⁵ <p>The Makara Estuary is enhanced by educating the public about its ecological and cultural values, including through the use of signage to describe the site and its inhabitants (in te reo Māori and English).</p>	Long term

³⁵ See Schedule F4 of the PNRP.

tekau mā ono

WAINUIOMATA



16 Wainuiomata

The Wainuiomata catchment is made up of many unique parts. Te kuinga o te awa (the source of the river) is the Remutaka Ranges. The water flows through a number of small, forested streams, before it passes through the suburb of Wainuiomata. The mainstem and a number of smaller rural streams then flow through primarily pastoral land, before entering the ocean at Wellington's south coast.

The awa (river) and its surrounding taiao (natural world) is valued for its āhua (natural character).

Te mātāpuna (headwaters) of Te Awa of Wainuiomata are found in the Remutaka Ranges, and are places of great beauty, pristine waters and a source of mauri/mouri (life force).

The upper reaches of the river are recognised for having outstanding indigenous ecosystem values, reflected in macroinvertebrate health, indigenous fish diversity and threatened fish species. They also contain an abundance of native vegetation and rongoā, such as titoki, makomako, manamana, kawakawa and rangiora.

16.1 Te whakamārama i Wainuiomata

Describing Wainuiomata

Wai Kino - contaminated by human waste

Wainuiomata is assessed as Wai Kino on the Te Oranga Wai Mana Whenua assessment framework. This is due to the presence of human waste (*E.coli*) in the stream, which poses a risk to health, and means that contact with the water outside of the headwater forested areas should be avoided. There remains considerable uncertainty about the state of the urban wastewater network and the non-point contamination from farming and life-style blocks.

Mana Whenua want to restore the mana and the water quality of the Wainuiomata from mai uta ki tai (from the inland to the sea). We note there are particular challenges in the restoration of Black Creek that will require specific regulatory and non-regulatory interventions.

Suggested management methods focus on strengthening Mana Whenua and community engagement and buy-in through mātauranga Māori monitoring and restoration. Longer term improvements require a complete upgrade of existing wastewater and stormwater networks.



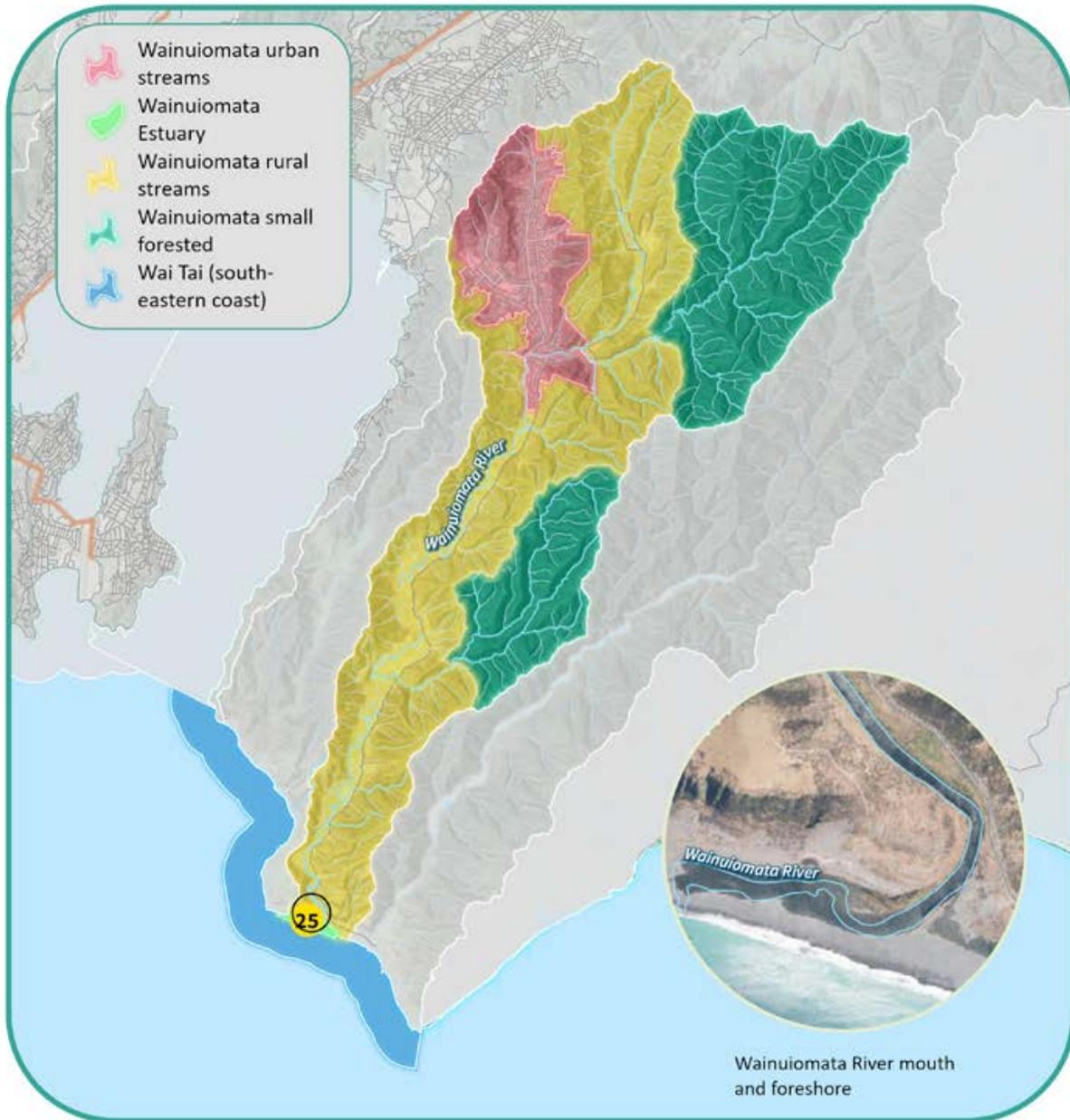
The small, forested streams of the Wainuiomata and its tributaries, such as Catchpool Stream, are wai tapu, which are sacred places where rituals and ceremonies were practised by Mana Whenua. The water is wai matua o tūāpapa (virgin water), and tohi (baptism) and cultural immersion take place here. There are numerous āku waiheke (small streams) in the upper reaches of the whitua, with unique values and mana that should be recognised and protected. These include George Creek and Black Creek. It should be noted that Black Creek was a name given to a section of the headwaters of the Wainuiomata River (near Fitzherbert Rd) before deforestation and is not the same as the Black Creek (Ōkautū or Ōpahu) that flows through central Lower Hutt.

The Wainuiomata River and George Creek are Wai Māori (fresh drinking water sources), both places in which surface water is abstracted for community drinking water supply. The whitua provides water to four of Wellington's main centres and contributes to approximately 15% of the region's water supply, including Porirua.

Many taonga species precious to Mana Whenua have been found in the mātipuna of the awa, and in the mainstem, above Black Creek. The Wainuiomata River is also valued for its Māori customary and recreational uses. It supports a variety of activities, such as te hī ika (line fishing), te hao ika (netting), te hopu tuna (taking eels) and kaukau (swimming).

The mouth of the Wainuiomata River and foreshore are sites of significance to Taranaki Whānui, in addition to being key mahinga kai sites. The Wainuiomata Estuary contains habitat for and is home to many native fish migratory species and native birds that are taonga to Mana Whenua. The estuary is one of less than half a dozen sites along the south Wellington coastline that supports a breeding population of tuturuwhatu (banded dotterels). In addition, inanga spawning habitat is found in vegetation near the river mouth.

Areas in the **Wainuiomata** catchment



Sites of significance for Mana Whenua

- 25. Wainuiomata River mouth and foreshore

16.2 Ngā whāinga mō Wainuiomata

Objectives for Wainuiomata

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for the Wainuiomata River and its receiving environment.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>The awa is recognised and considered as whānau and taonga by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Wai tapu (waters for ritual purposes)	<p>The small, forested streams of Wainuiomata are wai tapu. At these streams and their tributaries, which include Catchpool Stream, the water is wai matua o tūāpapa (or virgin water) that is of pristine quality, and the river margins are safe and accessible for Mana Whenua to practise traditional rituals and ceremonies like:</p> <ol style="list-style-type: none"> 1. tohi (baptism), 2. cultural immersion, 3. karakia (prayer), 4. whakatapu (placing of rāhui), 5. whakanoa (removal of rāhui), and 6. taonga tuku iho (gifting of knowledge and resources for future generations). <p>The water quantity and flow of the streams allow for hapū/iwi to practise cultural immersion throughout the year.</p> <p>Outside of these uses, access to the sites is managed to protect the cultural safety of the wai.</p>	Short term
Te mātāpuna (headwaters)	<p>The origins of the Wainuiomata Awa are high in the Remutaka Range forest park, and the headwaters:</p> <ol style="list-style-type: none"> 1. are clean and serene, 2. are a source of mauri/mouri and pristine water, 3. have an abundance of native vegetation and native biodiversity, 4. rongoā like titoki, makomako, manamana, kawakawa and rangiora are present, and 5. these waters are not used for recreational or commercial fishing. 	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>Te mātāpuna are places of great beauty and require the highest level of protection around access and use. Mana Whenua rights as kaitiaki are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. Are empowered and resourced to make decisions around the use, monitoring, restoration and protection of te mātāpuna. 2. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater management for Black Creek in Wainuiomata that includes (but is not limited to) monitoring of the awa and restoration. 3. Can access natural resources for customary purposes. 4. Can develop measures like rāhui, to protect against exploitation like fishing, and limit access, like prohibiting dogs near te mātāpuna to protect native bird species such as kiwi. 	
<p>Āku waiheke/ ngā wai huna George Creek is fully forested and in pristine condition.</p>	<p>Give mana to āku waiheke (small streams), ngā wai huna (concealed waters) and aquifers, including George Creek, Catchpool Stream and Black Creek, and their tributaries:</p> <ol style="list-style-type: none"> 1. By renaming Black Creek and George Creek, both in Wainuiomata. 2. All āku waiheke and ngā wai huna traditional names are used. 3. All āku waiheke and ngā wai huna that are not named, or have anglicised names, are given traditional Māori names under the guidance of Mana Whenua. 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Identifying stressors associated with these awa. 6. Ensuring Mana Whenua values are monitored and measured. <p>Streams that are currently piped are daylighted as far as practicable and are able to take their natural form and path.</p> <p>Where streams cannot be daylighted, their ecological values are recognised.</p> <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	Short term
<p>Tiaki whenua (land conservation)</p>	<p>The land around small streams like Black Creek is managed sensitively so that:</p> <ol style="list-style-type: none"> 1. the headwaters are in native vegetation, 2. Mana Whenua are involved in the decision-making around activities that may have an adverse impact on these streams, and 3. large areas of land are not left cleared of vegetation at the same time. 	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āhua (natural form)	<p>The mainstem awa have a natural variation of flows, are able to meander and have natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest and the forest floor.</p> <p>The voice of the awa can be heard. The presence of native flora and fauna can be observed and heard in the water spaces.</p> <p>The voice of the awa reflects the natural variations in flow, the movement of bed material, and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te nui o te wai (abundance of water)	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna and āku waiheke through to takutai moana, 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. Mana Whenua can practise cultural immersion and other traditional and modern cultural uses, 4. rangatahi (youth) can swim from November through to April, 5. all life stages of taonga species are catered for, including drift-feeding fish, 6. the natural rhythms and hydrology of the river are supported – the awa can be calm, but she is also allowed to be riri (angry), 7. the flow is sufficient so that it keeps the river mouth open, 8. there is connectivity between the awa and its banks to support spawning fish, 9. the bed of the awa does not dry up during summer months, 10. it supports an abundant and diverse range of aquatic life including microbes, invertebrates, indigenous fish species, native birds and indigenous plants, and 11. whānau can use water for economic purposes without causing the level of water in the awa to drop. 	Medium term
Te mana whakahaere o ngā awa ki uta ki tai (customary authority over the rivers in both the upper and lower reaches)	<p>A partnered management approach is adopted so that Mana Whenua work with Greater Wellington to develop, apply, monitor and enforce holistic river management practices.</p> <p>The flood hazard risk to communities near Wainuiomata is managed so that the river is able to exhibit its natural form and character rather than being constrained and that river management includes opportunities for positive design such as recreating ngā ūranga (landing, arrival places).</p> <p>The existing global flood protection consent is reviewed so that it achieves these outcomes.</p>	Short term, except for re-naturalising the awa (river), which is a long-term goal.
Wai Māori (fresh water)	George Creek and Wainuiomata Awa are key sources of community drinking water. The water is suitable for drinking and available within flow limits for that purpose.	Short term
Mahinga kai (food gathering)	<p>The whole catchment supports the entire life cycle of mahinga kai species.</p> <p>Mahinga kai species are safe to harvest and eat.</p>	Medium term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>The mouth of the Wainuiomata River mouth and foreshore (coastal) are mahinga kai sites.³⁶</p> <p>At mahinga kai sites, these fish and macroinvertebrates are present: longfin tuna, shortfin tuna, kōura, kākahi and pāua.</p> <p>At mahinga kai sites, these plant species are present: karengo and plants for weaving and healing.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.</p>	Medium term
	<p>Mana Whenua are able to make decisions around the harvest of mahinga kai and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing that includes a ban on all commercial eeling in the catchment. 4. practise tikanga, and other preferred methods of harvest, safely and at the most appropriate time of the year, and 5. exercise customary practices to the extent desired. 	Short term
Taonga species	<p>The water conditions, level and habitat in the awa and its corridor support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs including kōura and kākahi, 2. at-risk and threatened indigenous fish species like banded kōkopu, dwarf galaxias, giant kōkopu, koāro, shortjaw kōkopu, bluegill bully, giant bully, redfin bully, Cran's bully, piharau (lamprey), longfin tuna and shortfin tuna, and 3. endemic plants, birds (like kiwi), indigenous reptiles and amphibians. <p>The lower reaches provide healthy inanga spawning habitat.</p>	Medium term

³⁶ See Schedule C4 and Map 6 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Contact recreation and Māori customary use	<p>The water is clean and cool all year round and there are enough deep pools for a range of interactions to take place, so that:</p> <ol style="list-style-type: none"> 1. people can immerse themselves in the water (swimming, bathing, being in the water to replenish mauri/mouri) without getting sick and or/developing skin rashes, 2. rangatahi can do bombs into the waterholes and can safely mahi pārekareka (relaxation and recreation) i te wai (play in the water), 3. the corridor and banks are easily accessible and shaded by native vegetation that allows elderly whānau to mahi pārekareka ki te wai (relax alongside the awa), and 4. the water levels in traditional swimming places do not drop below hip level. 	Short term
Swimming	<p>The water is suitable for primary contact throughout the catchment. The Wainuiomata Awa is a significant contact recreation freshwater body, including for kaukau (swimming).³⁷</p>	Medium term
Takutai Moana	<p>The Wainuiomata Estuary is prioritised for protection and restoration so that it is a healthy, functioning ecosystem.</p> <p>The Wainuiomata Estuary provides safe habitat for indigenous birds such as tuturuwhatu (banded dotterel), variable oystercatcher, white-fronted tern, Caspian tern, red-billed gull, pied stilt, black shag, pied shag and New Zealand pipit.</p> <p>The Wainuiomata Estuary supports a healthy and abundant breeding population of tuturuwhatu.³⁸</p>	Long term

37 See Schedule H1 and Map 20 of the PNRP.

38 Schedule F4 and Map 19 of the PNRP.

16.3 Kaipapa ūnga summary for Wainuiomata

Sub-catchment areas	Water Quality			Mahinga Kai			Habitat		
	Kaupapa assessment	Ūnga S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L
Wainuiomata small forested	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Wainuiomata urban streams	Red	Red	Red	Red	Red	Red	Red	Red	Red
Wainuiomata rural streams	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Wainuiomata Estuary	Green	Green	Green	Green	Green	Green	Green	Green	Green
Wai Tai (south-eastern coast)	Green	Green	Green	Green	Green	Green	Green	Green	Green
Notes	<p>1) The assessment and ūnga for this Kaipapa are driven by the E. coli attribute.</p> <p>Mana Māori perspective of overflows with tūtae means this water cannot be used.</p> <p>2) Forested streams are Wai Ora and Wai Mate for the cultural framework for developing a cultural framework for allocation is sought in the short term to lift this attribute to Wai Ora.</p> <p>3) Wai Māori is sought in the short term.</p> <p>4) Wai Ora is sought faster than shown for two attributes in this kaupapa - short term for knowledge exchange, and medium term for species presence.</p> <p>5) Urban streams are seeking Wai Māori in the long-term.</p>								

Scale level	Description
Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Wai Ora also means health.
Wai Māori	This is referred to as ordinary water which runs free or unrestrained and it has no sacred associations.
Wai kaurū	Wadeable, however there is uncertainty about water quality and concern about potential risks.
Wai Kino	Dangerous/polluted water. The mauri (life force) of the water has been altered through pollution and has the potential to do harm to all living things (including humans and ecosystems). Also refers to dangerous water such as rapids.
Wai Mate	This is effectively dead water. It cannot sustain life. It is dangerous to all living things (including humans and ecosystems) because it can cause illness or misfortune.

Note - The colours used to help illustrate the scale of Wai Mate to Wai Ora are the same used to illustrate the attribute states in the NOF. This does not indicate equivalence of the scales.

Sub-catchment areas	Flora and fauna			Taonga species			Wāhi Tapu			Relationship audit			Mātauranga			Timeframe descriptions		
	Kaupapa assessment	Ūnga S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L	Kaupapa assessment	S M L	Ūnga L	S - Now - 10 year timeframe	M - 10 - 30 year timeframe	L - 30+ year timeframe
Wainuiomata small forested	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue			
Wainuiomata urban streams	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red			
Wainuiomata rural streams	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange			
Wainuiomata Estuary	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green			
Wai Tai (south-eastern coast)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green			
Notes	<p>1) Wai Ora is sought faster than shown for knowledge exchange.</p> <p>2) There is high variation in the individual attribute assessments and their ūnga, making an overall kaupapa assessment difficult.</p>																	

tekau mā whitu

ŌRONGORONGO



17 Ōrongorongo

The Ōrongorongo Awa is located to the east of the Wellington Harbour and runs almost parallel to the Wainuiomata River before entering takutai moana (the sea) on Wellington's south coast.

17.1 Te whakamārama i Ōrongorongo

Describing Ōrongorongo

✓ Wai Ora - Water that sustains health and wellbeing

Ōrongorongo is regarded as being in a state of Wai Ora (sustaining health and wellbeing).

Ōrongorongo sets the benchmark identified in Ngā Kawa, which envisions the return of Wai Ora throughout the whaitua. Maintaining Wai Ora for this taonga (treasure) is a key priority for Mana Whenua.

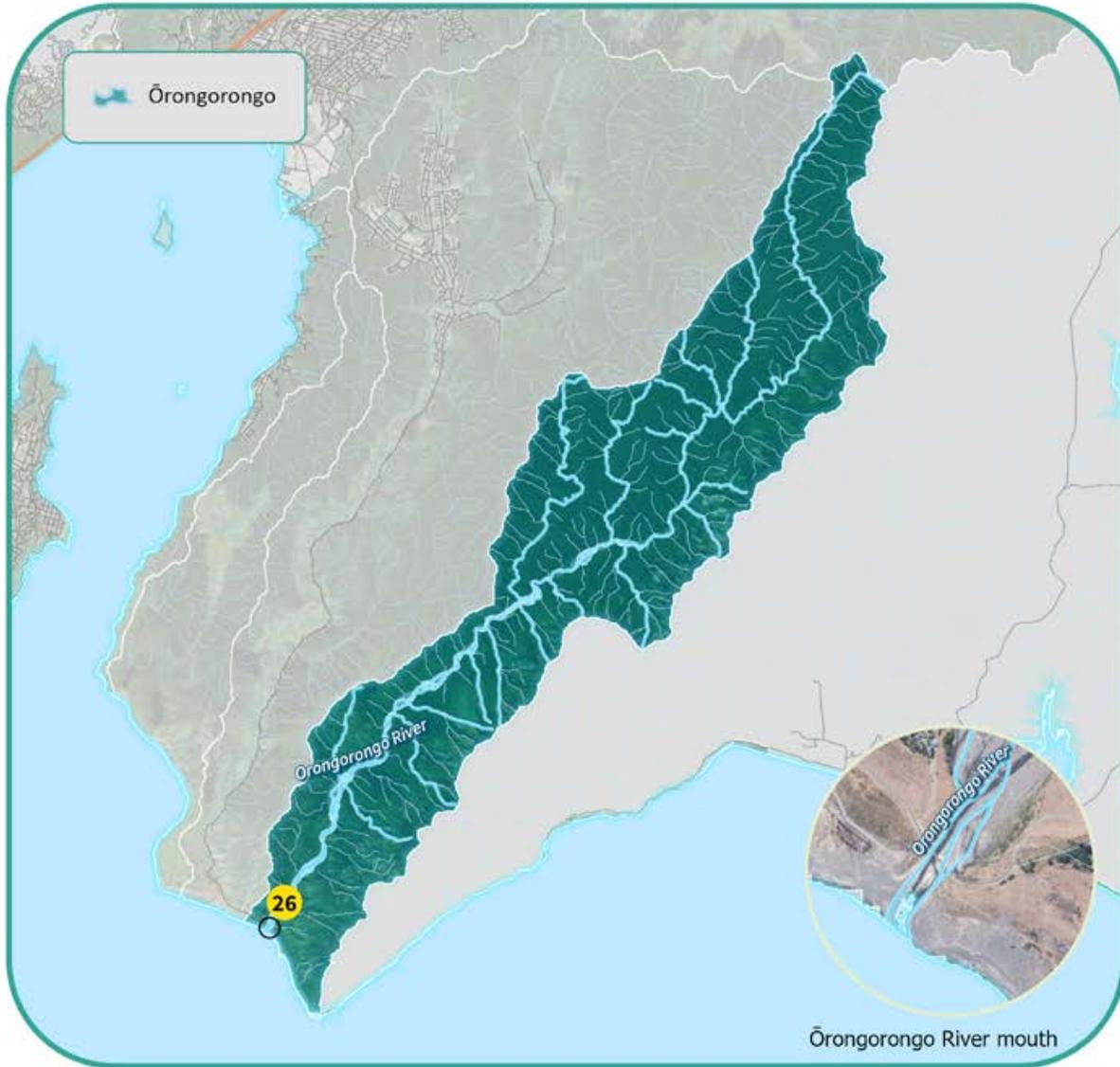
The awa (river) and its surrounding taiao is valued for its āhua (natural character). The mātāpuna of Te Awa o Ōrongorongo is found in the Pākuratahi Forest and has pristine water quality. The upper reaches of the river contain an abundance of native vegetation, and rongoā such as titoki, makomako, manamana, kawakawa, and rangiora can be found.

The awa is recognised for its remarkable indigenous ecosystem value, is characterised by high macroinvertebrate health and is home to many species that are taonga to Mana Whenua.

The Ōrongorongo River and Big Huia Creek are Wai Māori, both places in which surface water is abstracted for the community drinking water supply. The awa is also highly valued for its Māori customary and recreational uses. The riverbed is prone to drying during summer months and it is therefore important that environmental flows and levels are monitored to see whether this is a result of over-abstraction.

The Ōrongorongo Swamp is the only montane-alluvial wetland in the region and is considered one of the most pristine wetlands, with exceptional native ecosystem value. The Ōrongorongo Awa is braided and the river mouth is wāhi tapu and a site of significance to Taranaki Whānui.

Areas in the Ōrongorongo catchment



Sites of significance for Mana Whenua

- 26. Ōrongorongo River mouth

17.2 Ngā whāinga mō Ōrongorongo

Objectives for Ōrongorongo

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for Ōrongorongo and its receiving environment.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short,³⁹ medium⁴⁰ or long term.⁴¹

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>The awa is recognised and considered as whānau and taonga (cultural treasures) by the people of Te Whanganui-a-Tara.</p> <p>The awa has its own identity, unique personality and mauri/mouri.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Te mātāpuna	<p>The origins of the Ōrongorongo Awa are high in the Remutaka Range, and te mātāpuna (headwaters):</p> <ol style="list-style-type: none"> 1. are clean and serene, 2. are a source of mauri/mouri and pristine water, 3. have an abundance of native vegetation and native biodiversity, 4. have ngā rongoā like tītoki, makomako, manamana, kawakawa and rangiora present, and 5. are not used for recreational or commercial fishing. <p>Te mātāpuna are places of great beauty and Mana Whenua rights as kaitiaki are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. are empowered and resourced to make decisions around the use, monitoring, restoration and protection of te mātāpuna, 2. can access natural resources for customary purposes, and 3. can develop measures like rāhui, to protect against exploitation like fishing, that are enforceable. 	Short term

39 Now – 10 year timeframe.

40 10 – 30 year timeframe.

41 30+ year timeframe.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āhua	<p>The mainstem awa have a natural variation of flows, are able to meander and have natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest and the forest floor.</p> <p>The voice and personality of the awa can be heard and seen. The presence of native flora and fauna can be observed and heard in the water spaces.</p> <p>The voice of the awa reflects the natural variations in flow, the movement of bed material, and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	Medium term
Ngā mahi a ngā tūpuna	We show respect for the awa and our tūpuna by ensuring that all waterbodies are clean and healthy.	Medium term
Te nui o te wai	<p>There is sufficient water quantity and flow levels in the awa so that:</p> <ol style="list-style-type: none"> 1. there is connectivity between te mātāpuna and āku waiheke through to takutai moana (the sea), 2. the water levels of all awa have sufficient depth all year round to support the movement of native fish species up and down the river system, 3. Mana Whenua can practise cultural immersion and other traditional and modern cultural uses, 4. rangatahi (youth) can swim (kaukau), dive (rukuruku) and mahi pārekareka i te wai (play in the water) all year round, 5. all life stages of taonga species are catered for, including drift-feeding fish, 6. the natural rhythms and hydrology of the river are supported, 7. the flow is sufficient so that it keeps the river mouth open, 8. there is connectivity between the awa and its banks to support spawning fish, 9. the bed of the awa does not dry up during summer months, 10. it supports an abundant and diverse range of wildlife like culturally significant fish species, native birds and indigenous plants, and 11. whānau can use water for economic purposes without causing the level of water in the awa to drop. 	Long term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana o te tangata	<p>Mana Whenua rights as kaitiaki and mana whakahaere are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how the awa will be managed, 2. are contributing to the community's understanding of te ao Māori, Mana Whenua values and historical relationship with the awa, 3. can use mātauranga Māori, Mana Whenua ecological monitoring, and observational data to inform decision-making around the awa, 4. can practise manaaki ruranga, the sharing of management of the awa, with the wider community and existing care groups, and 5. can exercise whakatapu and whakanoa. 	Short term
Wāhi tapu	<p>The river mouth of the Ōrongorongo River is wāhi tapu and a site of significance for Taranaki Whānui.</p> <p>Wāhi tapu sites support the healthy wairua of the tangata/people because:</p> <ol style="list-style-type: none"> 1. Whānau are able to access these sites and manage them according to tikanga. 2. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater management for wāhi tapu sites that includes (but is not limited to) monitoring and restoration. 3. Whānau can practise cultural rituals and ceremonies, such as tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu and whakanoa (placing and removal of rāhui) and tuku iho (gifting of knowledge and resources to future generations). 4. The wai is clean and safe for use. 5. Ngā ūranga (landing/arrival places) are established along the river corridor and these are accessible by Mana Whenua, including by waka. 6. Whānau are able to practise tuku iho (transfer knowledge and resources to future generations) at these sites. 	Short term
Wai Māori	<p>The Ōrongorongo River, and Big Huia Creek, are key sources of community drinking water. The water is suitable for drinking and available for flow limits for that purpose.⁴²</p>	Medium term
Te Mahi Kai/ Mahinga kai	<p>The whole catchment supports the entire life cycle of mahinga kai species. Mahinga kai species are safe to harvest and eat.</p>	Medium term

⁴² See Schedule M1 Surface water community water supply abstraction point of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>The Ōrongorongo River, in particular its river mouth, is an important mahinga kai site for the harvest of mahinga kai species, such as inanga and longfin and shortfin eels (tuna).⁴³</p> <p>At this site, these plant species are present: pūhā and fernroot, and plants for weaving and healing like harakeke and raupō.</p> <p>Other mahinga kai, like stones used for tool making and mud for dyes, are present.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.</p>	Short term
	<p>Mana Whenua are able to make decisions around the harvest of mahinga kai and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing, that are able to be enforced, 4. practise tikanga and other preferred methods safely and at the most appropriate time of the year, and 5. exercise customary practices to the extent desired. 	
Taonga species	<p>The river and all its tributaries have a high Macroinvertebrate Community Index (MCI) count.</p> <p>The conditions of the wai (quality and quantity), and the habitat at the bed and banks of the awa and its tributaries, are able to support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs including kōura and kākahi, and 2. at-risk and threatened indigenous fish species like banded kōkopu, bluegill bully, common smelt, giant kōkopu, inanga, kōaro, longfin eels (tuna), redfin bully and shortfin eels (tuna).⁴⁴ <p>The lower reaches provide healthy inanga spawning habitat.</p> <p>Mana Whenua are actively involved in freshwater management decision-making that includes the ability to use whakatapu (placing of rāhui) to protect taonga species.</p>	Medium term

43 See Schedule C4 and Map 6 of the PNRP.

44 See Schedule F1 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Contact recreation and Māori customary use for identified sites	<p>The water is clean and cool all year round and there are enough deep pools for a range of interactions to take place, so that:</p> <ol style="list-style-type: none"> 1. rangatahi (youth) can do bombs into the waterholes and can safely mahi pārekareka i te wai (play in the water), 2. whānau can kaukau (bathe or swim), rukuruku (dive) and mahi pārekareka i te wai (play in the water) without getting sick and/or developing skin rashes, 3. the corridor and banks of the awa are easily accessible and shaded by native vegetation that allows elderly whānau to mahi pārekareka ki te wai (relax alongside the awa). 4. the water levels in traditional swimming places do not drop below hip level. 	Medium term
Swimming	The water is suitable for primary contact throughout the catchment.	Medium term
Repo	<p>The exceptional native ecosystem value of the Ōrongorongo Swamp is improved and protected so that there is an abundance and diversity of biota including:</p> <ol style="list-style-type: none"> 1. microbes 2. benthic macroinvertebrates/freshwater bugs including kōura and kākahi, 3. native macrophytes and aquatic and estuarine plant communities, and 4. threatened and at-risk indigenous fish and bird species. <p>The wetland margins are restored and given protection so that they are once again a functioning part of the main wetland.</p>	Short term

tekau mā waru

NGĀ ROTO O PARANGĀREHU



18 Ngā roto o Parangārehu

Parangārehu Lakes

The Parangārehu Lakes FMU is made up of Lake Kōhangapiripiri, Lake Kōhangaterā, Gollan's Stream and the many tributaries.

These lakes have been described as “jewels in the crown” of the whaitua and should be prioritised for immediate improvement.

The Parangārehu Lakes are Taonga Nui a Kiwa to Taranaki Whānui, and they were received back by iwi through the Treaty settlement process because of their significance for the iwi identity. The lakebed is in the ownership of the hapū from Taranaki Whānui, while the surrounding land is managed by Greater Wellington.

Greater Wellington and Port Nicholson Block Settlement Trust jointly manage the Parangārehu Lakes Area through a “rōpū tiaki” or guardianship group. The iwi and co-management partner, Greater Wellington, have drafted a management plan jointly to support the ecology of the area.

18.1 Te whakamārama i Parangārehu

Describing Parangārehu

! Wai Kautū - wadeable - state of uncertainty and risk

Parangārehu is regarded as being in a state of uncertainty and risk. This is due to the complexity surrounding the management of the lakes and how they can be restored to a state of Wai Ora. Mana Whenua leaders of Te Rōpu Tiaki (the body with the duty of care) for Parangārehu have a vision for their taonga that will be further specified through setting of Wai Oranga target states.

Gollan's Stream is the primary kuinga (source) of wai entering Lake Kōhangaterā and is a place of great beauty and pristine waters. Te mātāpuna o te manga (the headwaters of the stream) are found in the undisturbed beech forest of the Eastbourne hills. This forest also forms part of the East Harbour Regional Park and is managed by Greater Wellington.

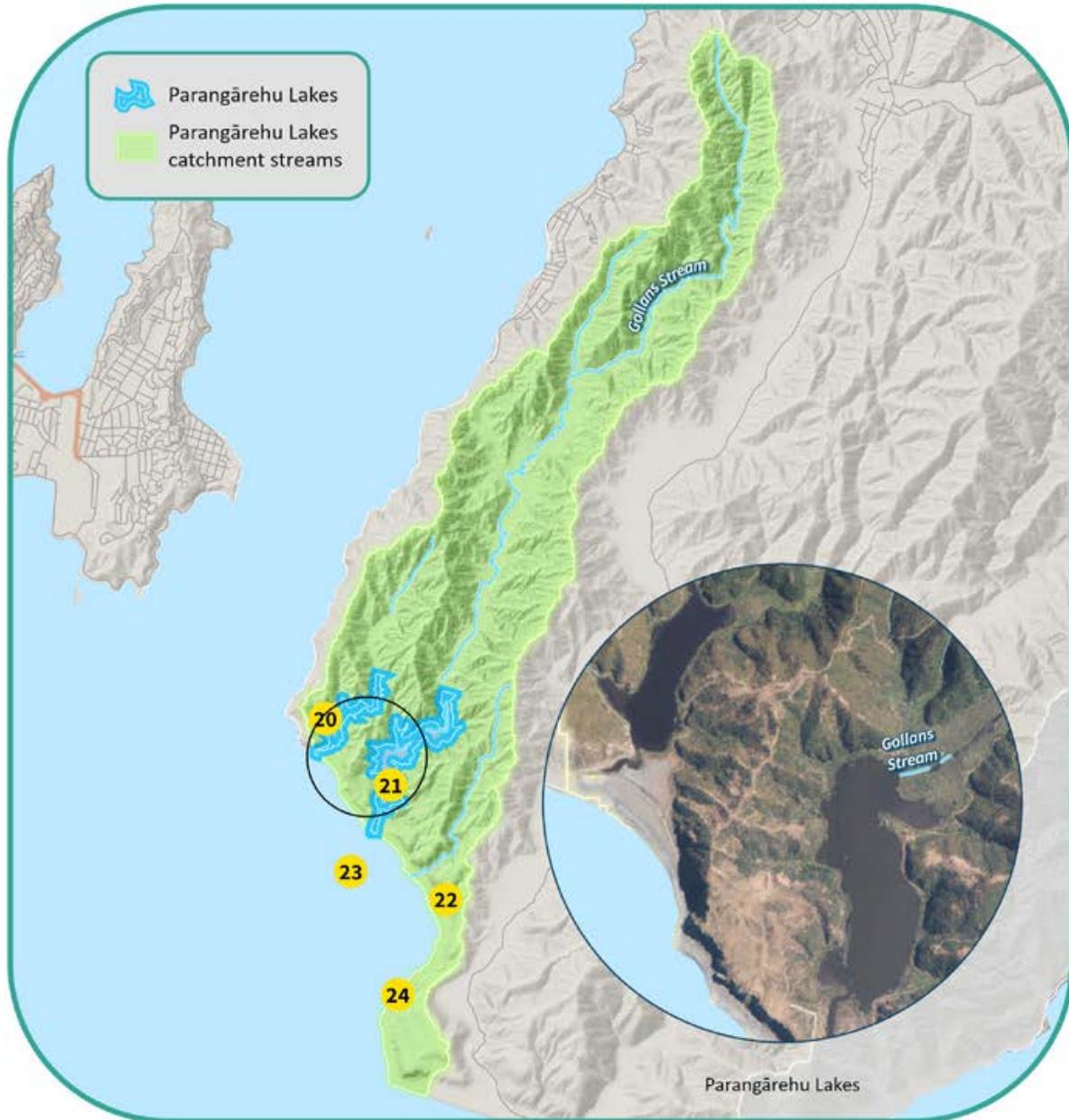
Historically, Lake Kōhangaterā was a superior fishery for Taranaki Whānui. Karaka groves were planted alongside the lakes as a food source and the tributaries contain raupō beds. The area was a summer camp for whānau as they fished not only the lakes but the sea. Important mahinga kai sites in the area include Ōkākaho Stream, Parangārehu (Fitzroy Bay), Ōruapouanui/Baring Head and Kōhangaterā

Lake, where species such as longfin and shortfin tuna, mullet, kahawai and whitebait were found. These sites are also puna rongoā and puna raranga (a source of medicinal and weaving material).

Te roto (the lake) is known as wāhi whakarite (preparing for an important activity/event), a place of ritual, and has a richness of cultural features that include karaka tree dendroglyphs (carving of shapes and symbols into the bark of living trees).

Lake Kōhangapiripiri is the smaller of the two Parangārehu Lakes. The land use in the catchment is predominantly indigenous forest, scrublands and regenerating pastoral lands, with significant wetlands to the north of the lake.

Areas in the Parangārehu Lakes catchment



Sites of significance for Mana Whenua

- 20 Parangārehu Lakes, Kohangapiripiri
- 21 Parangārehu Lakes, Kohangatera
- 22. Ōkākaho Stream
- 23 Parangārehu (Fitzroy Bay)
- 24. Baring Head/Ōruapouanui

18.2 Ngā whaingā mō Kōhangapiripiri me Kōhangaterā

Objectives for Kōhangapiripiri and Kōhangaterā

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for the Parangārehu Lakes, Gollan's Creek, their tributaries and its receiving environment.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Ngā awa tipua	<p>Gollan's Stream, Lake Kōhangaterā and Lake Kōhangapiripiri are recognised as having their own intrinsic values, including spiritual dimensions, and are prioritised for immediate improvement.</p> <p>These waterbodies and their freshwater ecosystems, brackish shallow water, saltmarsh vegetation and extensive wetlands are whānau and taonga of Mana Whenua.</p> <p>These matters are acknowledged and protected when making decisions on the management of land and water.</p>	Short term
Te mātāpuna	<p>The origins of the Parangārehu Lakes and its tributaries are the beech forest of the Eastbourne hills and te mātāpuna:</p> <ol style="list-style-type: none"> 1. are clean and serene, 2. are a source of mauri/mouri and pristine waters, 3. have an abundance of native vegetation and native biodiversity, 4. ngā rongoā, like titoki, makomako, manamana, kawakawa and rangiora are present, and 5. recreational and commercial fishing is prohibited. 	Short term
	<p>Te mātāpuna (headwaters) are places of great beauty, and Mana Whenua rights as kaitiaki are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. are empowered and resourced to make decisions around the use, monitoring, restoration and protection of te mātāpuna, 2. can access natural resources for customary purposes, and 3. can develop measures like rāhui, to protect against exploitation like fishing and four-wheel drive activity, that are enforceable. 	

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Āku waiheke, ngā wai huna (piped streams and aquifers)	<p>The small streams like Gollan’s Stream, Butterfly Creek, Cameron Creek and Paiaka Stream, and all other tributaries including aquifers, are enhanced:</p> <ol style="list-style-type: none"> 1. By naming unrecognised streams. 2. All āku waiheke (small streams) and ngā wai huna (concealed waters) traditional names are used. 3. All āku waiheke and ngā wai huna that are not named, or have anglicised names, are given traditional Māori names under the guidance of Mana Whenua. 4. These names are formalised and shared with the local community and Mana Whenua through education and signage. 5. Monitoring for water quality/quantity and for the presence of indigenous biodiversity and ecological function. <p>Native fish have access to move freely up and down the entire length of the catchment.</p>	Short term
Āhua	<p>Gollan’s Stream, Butterfly Creek, Cameron Creek and Paiaka Stream and their tributaries have a natural variation of flows. The awa are able to meander and have natural beauty.</p> <p>The water is clear with good clarity so that the bed of the awa is easily visible.</p> <p>The awa and its corridor smell of clean water, native forest and the forest floor.</p> <p>The voice of the awa can be heard. The presence of native flora and fauna, including birdsong, can be observed and heard in the water spaces.</p> <p>The voice of the awa reflects the natural variations in flow, the movement of bed material, and bird and insect life within the river corridor.</p> <p>The awa and the area immediately surrounding it is a place of beauty and it feels serene and uplifting both in and out of the water.</p> <p>The natural flow of the water down the awa is not constrained by instream structures. The awa is able to express its natural form and has a natural pattern of pools, runs and riffles.</p> <p>The full extent of the banks of the awa and the river corridor is vegetated and there is a dominance of indigenous flora that shade the water and provide habitat for native fauna.</p>	Short term
Ngā mahi a ngā tūpuna	<p>We show respect for all waterbodies and our tūpuna by ensuring that all wai is clean and healthy.</p> <p>These waterbodies are managed to avoid effects on the aquatic values of the lakes from submerged invasive plants like <i>Egeria</i>, <i>Elodea</i>, <i>Potamogeton crispus</i> and <i>Rununculus</i>.</p>	Short term

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mana o te tangata	<p>Mana Whenua rights as tangata kaitiaki and mana whakahaere are in place so that iwi and hapū:</p> <ol style="list-style-type: none"> 1. have access to and can make decisions about how the roto (lake), awa (river) and repo (wetlands) are managed ki uta ki tai (from the lower to the upper reaches) as a living organic system with each part connected to the other parts, 2. determine appropriate recreational activities and amenities to the extent that they do not degrade mouri/mauri/mouri of lakes and waterways, 3. can use mātauranga Māori, Mana Whenua ecological monitoring and observational data to inform decision-making around the roto. Iwi kaitiaki regularly monitor the oranga of the lake catchments, particularly the eel fishery, 4. are contributing to the community's understanding of te ao Māori, Mana Whenua values and historical relationship with the roto through education and iwi-designed bollards and signs, and 5. can exercise whakatapu and whakanoa (placement and removal of rāhui). 	Short term
Wāhi tapu	<p>There are significant wāhi tapu sites for Taranaki Whānui that include Ōkākaho Stream, Parangārehu (Fitzroy Bay), Baring Head/Ōruapouanui and Lake Kōhangaterā.⁴⁵</p> <p>Mana Whenua are reconnected with wāhi tapu as they are able to:</p> <ol style="list-style-type: none"> 1. access these sites and manage them according to tikanga, 2. safely harvest rongoā (Māori medicine), raranga (weaving material) and mahinga kai, and 3. carry out rituals and ceremonies, which include tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu and whakanoa (placement and removal of rāhui), and tuku iho (gifting of knowledge and resources to future generations). 	Short term
Te mahi kai/ mahinga kai (gathering food, food gathering places)	<p>The whole of the catchment supports the entire life cycle of mahinga kai species.</p> <p>A Sustainable Harvest Plan will be developed for various mahinga kai species so they are safe to harvest and eat.</p>	Medium term

⁴⁵ See Schedule C4 and Map 6 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
	<p>There are several mahinga kai sites in the area, including Okakaho Stream, Parangārehu (Fitzroy Bay), Ōruapouanui/Baring Head, Lake Kōhangapiripiri and Kōhangaterā Lake.⁴⁶</p> <p>At mahinga kai sites, these fish and macroinvertebrates are present: longfin tuna, shortfin tuna, mullet, kahawai and whitebait.</p> <p>At mahinga kai sites, these plant species are present: karaka, and raupō, and plants for healing.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest, including for manuhiri and to exercise manaakitanga.</p> <p>At mahinga kai sites, tuna and the native fishery are restored and self-replenishing as tuna heke (migrating eels).⁴⁷ There is an abundance of tuna, particularly mature migrating female tuna, ready to leave the kohanga (nursery) of the lakes to return to the moana (sea) for spawning and the continued cycle of life.</p>	Medium term
	<p>Mana Whenua are able to make decisions around the harvest of mahinga kai and can:</p> <ol style="list-style-type: none"> 1. access mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. develop measures like rāhui, to protect against exploitation and overfishing, that are able to be enforced, 4. practise tikanga and preferred methods for harvest of kai, puna rongoā and puna raranga (source of medicinal and weaving material), and 5. exercise customary practices to the extent desired. 	Medium term

46 See Schedule C4 and Map 6 of the PNRP.

47 This is one of the key Oranga Outcomes from the Parangārehu Lakes Area Co-Management Plan.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Wāhi whakarite	<p>The water is clean and safe to interact with, and the river margins are safe and there is space for whānau to:</p> <ol style="list-style-type: none"> 1. access traditional pā sites, 2. access and protect dendroglyphs (carving of shapes and symbols into the bark of living trees) including preserving specific rituals and wānanga associated with these sites, 3. practise rituals like planting at Puanga/Matariki, 4. hold wananga to continue indigenous practices like maramataka, 5. collect water to use in mauri/mouri-enhancing ways including waitohi and mate (rituals related to a death), and 6. share intergenerational knowledge and resources with whānau and manuhiri. 	Short term
Taonga species	<p>The water conditions, levels and habitat in the roto, awa (river) and repo (wetland) support the presence, abundance, survival and recovery of:</p> <ol style="list-style-type: none"> 1. benthic macroinvertebrates/freshwater bugs including kōura and kākahi, 2. at-risk and threatened indigenous fish species: banded kōkopu, giant bully, giant kōkopu, inanga, piharau, longfin and shortfin tuna and redfin bully, and 3. indigenous birds that include: tikitiki (NZ dabchick), pied shag, black shag, tuturuwhatu (banded dotterel) and pīhoihoi (NZ pipit).⁴⁸ <p>Successful and functioning fish passages at the ocean entrances for both lakes allowing tuna (eels) and other native species to migrate to and from the lakes at appropriate times of the year.</p>	Short term
Repo	<p>The water quality and health of the wetlands, which include the Lake Kōhangaterā Wetland, Lake Kōhangapiripiri Wetland (in the East Harbour Regional Park) and the Paiaka Stream Wetland,⁴⁹ supports a healthy wetland-lake ecosystem that sustains manu korihi (songbirds).</p> <p>The water is clean and the repo (wetlands) are functioning as a productive nursery with breeding habitats.</p> <p>The wetland margins are restored and given protection so that they are once again a functioning part of the main wetland.</p>	Short term

48 See Schedules F1 and F2b of the PNRP.

49 See schedules A3 wetlands with outstanding biodiversity values, F3 and Maps 1 and 18a in the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mahi mātaītai	<p>People are able to practise te mahi mātaītai and te hī ika (seafood gathering and line fishing) particularly at coastal sites like the Wainuiomata Coast and Parangārehu/Fitzroy Bay. These areas support:</p> <ol style="list-style-type: none"> 1. fishing of species allowed to be caught and eaten like kahawai, koura, pāua, mullet and kina,⁵⁰ and 2. safe sea fishing conditions with good water clarity, safe access and healthy algal growth. 	Short term
Takutai moana	<p>The estuarine characteristics of Lake Kōhangaterā and Lake Kōhangapiripiri are prioritised for protection and restoration so that it is a healthy functioning estuary that includes:</p> <ol style="list-style-type: none"> 1. Natural variations in water levels from the shallows to deeper water is retained. 2. The salinity of the roto is brackish in nature and what would naturally occur in a lake that is periodically open to the sea. 3. There is an abundance of saltmarsh plants that include: gratiola, mudwort, kuawa, prickly couch and swamp buttercup. <p>The Lake Kōhangaterā Estuary is able to support the presence, abundance, survival and recovery of threatened and at-risk indigenous fish species, which include shortfin tuna, kōaro, inanga, banded kōkopu, giant bully, redfin bully and piharau (lamprey).</p> <p>The conditions of Lake Kōhangapiripiri Estuary provide habitat that support the presence, abundance, survival and recovery of threatened indigenous fish species that are longer-lived and require only intermittent recruitment, such as the longfin tuna and giant kōkopu.</p>	Medium term

⁵⁰ Schedule F4 of the PNRP.



tekau mā iwa

WAI TAI



19 Wai Tai

SALT WATER

The Wai Tai Wāhi Wai Māori (Freshwater Management Unit or FMU) is made up of the Korohiwa and Te Ao Pā on the east coast of the harbour, Hue tē Taka on the south coast, Te Tangihanga-a-Kupe (Barrett Reef), Te Moana o Raukawa (Cook Strait) and Te Whanganui-a-Tara (Wellington Harbour).

Korohiwa and Te Aro Pā are significant to Taranaki Whānui, valued for being places where mahinga kai is practised, as well as being waka landing sites.

19.1 Te whakamārama i te Wai Tai

Describing Wai Tai

Wai Kino - contaminated by human waste

Wai tai comprises the Wellington harbour and coastal margins that are assessed as Wai Kino on the Te Oranga Wai Mana Whenua assessment tool. This is due to the presence of human waste (*E. coli*) predominantly from the constant and deliberate discharge of human waste to the coast. This is a critical issue for Mana Whenua along with the impacts these discharges are having on mahinga kai, cultural and recreational use. There is currently very little data or understanding of effects.

Within the harbour itself there are an increasing number of wastewater overflows and direct discharges of faecal matter to the harbour caused by the failure of the wastewater and stormwater systems. These overflows impact the mana and mauri/mouri of Te Whanganui-a-Tara and pose significant risks to the health and wellbeing of all who live in and around the harbour.

The Cook Strait also faces considerable pressure from commercial fisheries, marine transport, as well as stormwater and wastewater discharges from Wellington City and Hutt City.

Despite this, the harbour and coastal sites are hugely significant to Mana Whenua. Hue te Taka (on the south coast of Wellington) is a site of significance to Ngāti Toa Rangatira. It is known as a wāhi whakahaumanu (a place of healing and restoration). Raukawa Moana is Taonga Nui a Kiwa for Ngāti Toa Rangatira and for Taranaki Whānui.

Te Moana o Raukawakawa (the Cook Strait) connects the takiwā of Taranaki Whānui and is traversed to maintain links between whānau, hapū and iwi. The Cook Strait is wāhi mahara⁵¹ and is an important part of the identify of these iwi and hapū, and the people are equally a part of both the land and the sea. Te Moana o Raukawa is the primary customary fishing resource for Taranaki Whānui, with extensive commercial iwi fishing interests.

Te Moana o Raukawa is of the highest significance to Ngāti Toa Rangatira. Not only does Te Moana o Raukawa have great traditional and spiritual significance. It was crucial as a political and economic asset to Ngāti Toa Rangatira. Te Moana o Raukawa was never seen as a barrier to maintaining the Mana Whenua of Ngāti Toa Rangatira on both sides of the strait, and was more akin to a highway, which facilitated the transportation of resources and trade goods, and enabled the development of key relationships. It has thus, always been considered as much a part of the rohe of Ngāti Toa as the land. Ngāti Toa Rangatira are kaitiaki of Te Moana o Raukawa and its resources. The extensive fisheries that exist in

the strait provide for Ngāti Toa Rangatira's customary fishing and allow the iwi to manaaki manuhiri (extend hospitality to visitors).

Te Tangihanga-a-Kupe (Barrett Reef) is significant to both Ngāti Toa Rangatira and Taranaki Whānui. The site is valued for being wāhi tapu, a place where whānau are able to carry out rituals and ceremonies. It is also a mahinga kai site.

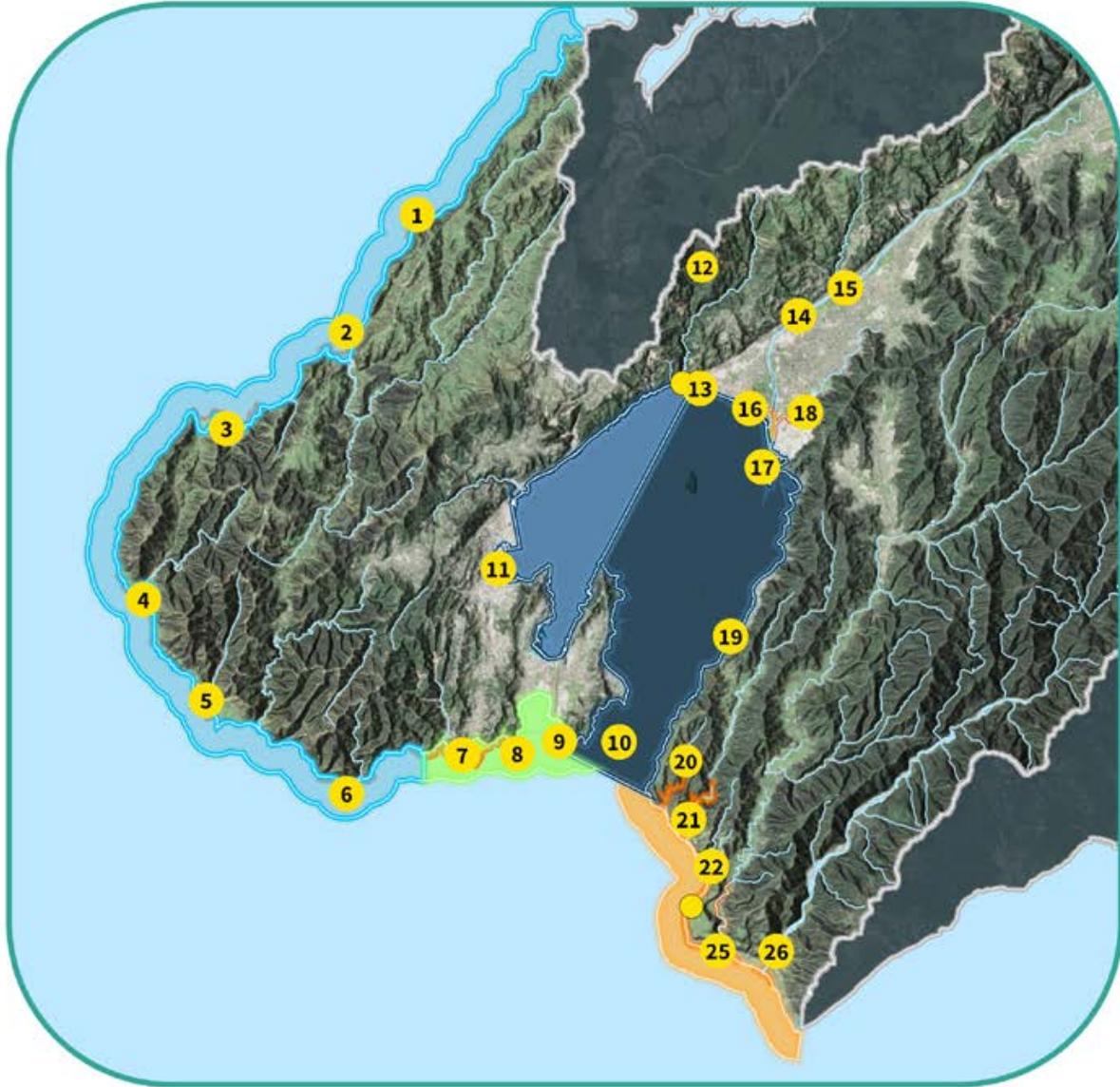
Te Whanganui-a-Tara (the Wellington Harbour) is a Taonga Nui a Kiwa to Ngāti Toa Rangatira and Taranaki Whānui and is recognised as an outstanding example of the relationship between the identity of iwi and hapū, and the mana of the area. The mouths of streams in the harbour are home to inanga, tuna, kahawai and piharau (lampreys). Kingfish, tarakihi, pātiki (flounder), kumukumu (gurnard), araara (trevally), aua (yellow-eye mullet), kanae (grey mullet) and hāpuku (groper) are located in the harbour, and important fisheries include fin fish and ngōiro eels (conger eels), and shellfish such as pipi (Pipitea Pā is named for its pipi bed).

Te Whanganui-a-Tara and its tributaries also support mahinga kai plants like karengo (sea lettuce), as well as rongoā (Māori medicine).

51 The definition of wāhi mahara is a place of learning and where local knowledge and histories are etched into the landscape.

Wai Tai

-  Wai Tai (south-eastern coast)
-  Wai Tai (south-western coast)
-  Wai Tai (southern coast)
-  Te Whanganui-a-Tara (inner harbour)
-  Te Whanganui-a-Tara (outer harbour)



Sites of significance for Mana Whenua

- | | | |
|--|---|---|
| 1 Kie Kie/Kia Kia (Ngutu Kākā) (Pipinui Point) | 10 Te Tangihanga-a-Kupe (Barrett Reef) | 19 Korohiwa (East Harbour coast) |
| 2 Ōhariu - Wharehou Bay | 11 Te Aro pā | 20 Parangārehu Lakes, Kohangapiripiri |
| 3 Te Ika a Maru - Ohau Bay | 12 Te Korokoro o Te Mana (Korokoro Stream mouth) | 21 Parangārehu Lakes, Kohangatera |
| 4 Ōterongo Bay | 13 Pito-one pā (Petone foreshore) | 22 Ōkākaho Stream |
| 5 Waiariki Stream mouth and coast | 14 Te Awa Kairangi/Hutt River - Maraenuku pā | 23 Parangārehu (Fitzroy Bay) |
| 6 Te Rimurapa - Pariwhero (Sinclair Head - Red Rocks) | 15 Te Awa Kairangi/Hutt River - Motutawa pā | 24 Baring Head/Ōruapouanui |
| 7 Tapu te Ranga - Ōwhiro - Haewai | 16 Hikoikoi pā, Pitoone (Petone) foreshore | 25 Wainuiomata River mouth and foreshore |
| 8 Te Raekaihau Point reef | 17 Te Awa Kairangi (Hutt River mouth) | 26 Ōrongorongo River mouth |
| 9 Hue te Taka (Wellington south coast) | 18 Waiwhetū Stream – Ōwhiti pā | |

19.2 Ngā whāinga mō te Wai Tai

Objectives for Wai Tai

These are a complete list of ngā huanga (outcomes) of Te Kāhui Taiao for the Wai Tai/coastal areas and receiving environments.

Objective: the outcomes for all the values are maintained or improved so that they are achieved in the short, medium or long term.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Te mahi kai/ mahinga kai/ kaimoana	<p>Mahinga kai sites include Korohiwa, Te Ao Pā (the east coast of Te Whanganui-a-Tara), Te Tangihanga-a-Kupe (Barrett Reef), Te Whanganui-a-Tara and Hue tē Waka.⁵²</p> <p>At mahinga kai sites, these fish and macroinvertebrate species are present: kōura, paua, kina, pipi, hapuku, hoki, kingfish, ngōiro eels, kahawai and (at mouth streams) tuna, inanga and piharau (lamprey).</p> <p>At mahinga kai sites, these plant species are present: karengo (sea lettuce) and bull kelp for rimurapa.</p> <p>Mahinga kai species are lively, in good condition, are diverse and abundant across all life stages, are safe to harvest, and eat or use, and are plentiful enough for long-term harvest including for manuhiri and to exercise manaakitanga.</p>	Short term
	<p>At Korohiwi, Te Ao Pā, Hue tē Waka, Te Moana o Raukawa, Te Tangihanga-ā-Kupe (Barrett Reef) and Mai Pipinui ki Turakirae are kei te ora te mauri/mouri (the mauri/mouri of the place is intact) and customary resources are available, so that iwi and hapū are able to:</p> <ol style="list-style-type: none"> 1. access coastal mahinga kai sites and species, 2. transfer knowledge about preparation, storage and cooking of kai through wānanga and other means of communication, 3. practise tikanga and preferred methods of harvest of mahinga kai, kaimoana and rongoā, 4. develop measures like rāhui of mātaītai, to protect against poaching, exploitation and overfishing, that can be enforced, and 5. exercise customary fishing rights. 	Short term

⁵² See Schedules C3 and C4 of the PNRP.

Mana Whenua uaratanga/values	Huanga/environmental outcomes	Timeframes
Wāhi mahara (places of learning and where local knowledge and histories are etched into the landscape)	<p>Numerous sites around Te Moana o Raukawa are wāhi mahara, and the water here is clean and safe to interact with and there is space for whānau to:</p> <ol style="list-style-type: none"> 1. access traditional sites along Te Moana o Raukawa and share information about local knowledge and histories of the landscape, and 2. practise manaaki ruranga, the sharing of management of Te Moana o Raukawa with the wider community and existing care groups. 	Short term
	<p>Mahinga kai, wāhi mahara, wāhi whakahaumanu and wāhi tapu sites (food gathering, learning, healing and sacred sites) support the healthy wairua of the tangata (people) because:</p> <ol style="list-style-type: none"> 1. Whānau can access these sites and manage them according to tikanga. 2. The wai is clean and safe for use. 3. Greater Wellington delegates its power under section 33 of the RMA to Mana Whenua to make decisions around freshwater management for these sites that includes (but is not limited to) monitoring and restoration. 4. Whānau can practise cultural rituals and ceremonies, such as tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu and whakanoa (placing and removal of rāhui) and tuku iho (gifting of knowledge and resources to future generations). 	Short term
Tauranga waka	<p>Mana Whenua are able to access Te Whanganui-a-Tara (the Wellington Harbour), Korohiwi, Te Ao Pā, Te Moana o Raukawa (Cook Strait) and Hue tē Taka (Wellington south coast) for tauranga waka and can launch waka and land waka safely at selected sites.</p> <p>Ngā ūranga (landing/arrival places) are established along coastal areas and these are safely accessible by Mana Whenua, including by waka.</p>	Short term

rua tekau

TIKANGA



20 Tikanga

ATTRIBUTES

Tikanga (attributes) are a measurable characteristic (numeric, narrative or both) that can be used to assess the extent to which a particular value is provided for.

Te Kāhui Taiao have identified a complete set of 42 tikanga (attributes) for its kaupapa (core) values.⁵³

For the purposes of setting target attribute states, the uaratanga (value/values) have been combined under nine core values, or kaupapa values, that also help provide the criteria for achieving huanga (environmental outcomes).

The table below sets out each of the kaupapa and their corresponding tikanga (attributes). The target attribute states in the right-hand column are narratives that describe freshwater states that are pristine or in a state of wai ora.

Kaupapa	Tikanga/attributes	Wai ora target attribute state
Water quality	Sediment load, suspended	Minimal impact of suspended sediment on instream biota/stream life.
	Temperature	Water temperature remains below the 20 degrees Celsius threshold, even in the summer months.
	Periphyton	Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime or habitat.
	Flow	Stream flow is steady with natural variation (pools, runs, riffles).
	<i>E. coli</i>	There is 0% risk of campylobacter infection.
	Dissolved oxygen	No stress caused by low dissolved oxygen on any aquatic organisms that are present.
	Water clarity	The water is clear across the entire awa, you can see through to the river bed.
	MCI	Macroinvertebrate community, indicative of pristine conditions with no organic pollution or nutrient enrichment.
	Taste, drinkability	I would feed water that comes from this stream to children or kaumātua (elders) without hesitation.
River bed composition	No mud or silt present along the riverbed across the entire awa.	

⁵³ See clause 3.10 of the NPSFM 2020.

Kaupapa	Tikanga/attributes	Wai ora target attribute state
Water quantity	Swimmable	Rangatahi (youth) can do bombs without getting sick or hitting the bottom of the awa.
	Wadeable	To be determined.
	Development of cultural flows	To be determined.
Habitat assessment	Rubbish audit	No evidence of waste present across the awa.
	Smell	There is no odour present in the water.
	Riparian cover	There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones: awa (river), awa banks and surrounding land.
	Fish passage assessment	The passage of fish is maintained, or is improved, by removing instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.
	Sources of pollution	All known point sources of pollution have been identified and remedied.
	Feeling in puku	There is a sense of calm and wairua in this space.
	Sound	The awa can be heard from a fair distance away, (past the riparian zone). Native birds are loud and can be heard at a distance from the awa.
	Channel modification	No channel modifications have been made along the awa.
Flora/fauna	Species absence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa.
	Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa.
Mahinga kai	Intergenerational knowledge exchange	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.
	Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.
	Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection, food sources.
	Species presence/abundance	Five or more mahinga kai species are present.
	Safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.

Kaupapa	Tikanga/attributes	Wai ora target attribute state
Taonga species (highly valued treasures)	Intergenerational knowledge exchange	Mātauranga knowledge and connection is strong and being passed onto younger generations.
	Species presence	There is 100% coverage of taonga species present at this site.
	Physical health	Health of taonga species is excellent at this site, 0% covered with diseases/parasites.
	Habitat quality	Habitat for taonga species provides remedy, protection, food sources.
Wāhi tapu (sacred sites)	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place.
	Access	Access to wāhi tapu is open, Mana Whenua are able to return to site in the future.
	Intergenerational knowledge exchange	Mātauranga knowledge and connection are strong. These are passed onto younger generations.
Relationship audit	Development of management plans	A management plan reflecting the Te Mana o Te Wai hierarchy of obligations has been developed and is implemented with Mana Whenua that defines roles in protection, access arrangements and contains all kōrero pertaining to the site.
	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the awa. The data is being listened to and informs future decision-making regarding the awa.
	Review of resource consents, compliance	A full review of all resource consents within 500m of the awa has been performed, this includes a review of the global flood protection consent for Te Awa Kairangi.
Mātauranga (specialised knowledge)	Place names	Where they exist, all original names of sites, awa, features and areas will be given precedence. Mana Whenua will develop and implement a naming policy for adoption by local government to ensure the rights to name streams and other sites.
	Sound (te reo Māori, karakia) (Māori language and rituals)	Te reo me ōna tikanga (Māori language and its associated arts) are present at this site. Te reo Māori is heard through karakia and kōrero (incantations, or prayers and speech).
	Sites of significance	All sites of significance have been identified and stories are recorded and shared.
	Community education	To be determined.

rua tekau mā tahi

TE ORANGA WAI



21 Te Oranga Wai

THE WELLBEING OF WATER

21.1 Ngā whāinga tū āhutanga Wai

Target attribute states

Te Oranga Wai is a unique indigenous assessment model developed by Te Kāhui Taiao for setting target attribute states for each of the kaupapa values relating to key sites and FMUs. The framework for setting target attribute states is contained in clause 3.11 of the NPSFM 2020 and these targets are important as they ultimately set out a path for achieving the environmental huanga (outcomes) for Mana Whenua.

Te Oranga Wai measures the wellbeing of water and waterbodies through a Mana Whenua lens. Its purpose is to support Mana Whenua in freshwater management decision-making by identifying current states for wai (water) and setting an aspirational state of improvement within a generational timeframe.

Te Oranga Wai is a measure that shows Mana Whenua confidence in the health and wellbeing of their waterways. This confidence stems from an integrated view of water and waterbodies based on mātauranga Māori (Māori knowledge) including whakapapa (genealogy) relationships with water, wairua and their spiritual connection with a site. This measure of wellbeing also includes an assessment of mauri/mouri (life force) and the presence and health of mahinga kai, indigenous flora and fauna. It is also noted that the target attribute states have broken each of the FMUs into a **smaller spatial scale** so that it is clear where each of the huanga apply along the length of the catchment and key rivers and streams.

Te Oranga Wai includes a rating system that describes the different states of attributes, from wai ora (water which gives life), through to wai mate (water which cannot sustain life). Through this framework, Mana Whenua can assess

the existing baseline state of a waterbody or site, rate it, and set a target attribute state and rate of change for a site or waterbody based on Mana Whenua aspirations, values, moemoeā and huanga. A series of regulatory and non-regulatory methods and taunaki (recommendations) can then be adopted to make improvements within an appropriate timeframe.

The target attribute states in most cases adopt the same timeframes that are used for Mana Whenua ngā huanga. In cases where the target attribute state has already been achieved, the state will be maintained, rather than improved.

It is noted that there is no minimum acceptable level for human *E. coli*. For that reason, Te Oranga Wai will assess water as Wai Kino where there is a known or measurable level of human waste.

Te Oranga Wai is not yet complete and it is recommended that Greater Wellington continue to work with Mana Whenua to articulate target attribute states for each of the following FMUs: Southwest Coast, Ōrongorongo, Parangārehu Lakes and Wai Tai. This has been captured as a recommendation in the Ngā Taunaki chapter.

Te Wai – Ko ngā tikanga, me tētahi whakamārama mō ngā tū āhuatanga o te wai

Wai – Tikanga and a description of the different states of wai

These target attribute states are narratives for making an assessment on each kaupapa (a collection of tikanga, as above).

Scale level	Level descriptions	Alphabetical Water quality	Mahinga kai	Confidence
Wai Ora	Pure/healthy water. This is water in its purest form. It contains the source of life and wellbeing. It is used in rituals to purify and sanctify and has the power to give life, sustain wellbeing and counteract evil. Waiora also means health.	Stream flow is steady with ripples. The stream or river bed is stony. I would feed water and food that comes from this stream to children or kaumātua without hesitation.	Mahinga kai are abundant and able to be sustainably harvested. Knowledge of mahinga kai is abundant and transferred to younger generations.	The abundance and vitality of mahinga kai express te hau ora of waterbodies. Hau ora/wellbeing is available.
Wai Māori	This is referred to as ordinary water which runs free or unrestrained and it has no sacred associations.	Water clarity is good. There is riparian overhang cooling the water. There is abundant in-stream habitat such as aquatic plants and tree parts. I would drink or eat from this stream or river.	Mahinga kai are physically healthy and have the potential for harvesting for ceremonial purposes once a year.	Mana Whenua can express manaakitanga, and their kaitiakitanga is evident in the abundance and quality of their mahinga kai resources.
Wai Kautu	Stable condition, the water is not clean nor is it considered to be dirty.	Stream water clarity is average, and its flow is medium. I might drink from or eat something that comes from this stream or river. There is some riparian overhang over 50% of the site. I would be hesitant to feed water or food from this stream or river to children or kaumātua.	Mahinga kai are physically healthy and have the potential for harvesting for ceremonial purposes once every two years.	Mana Whenua are concerned about the state of mahinga kai and water quality and effects on iwi/community wellbeing. Cannot fulfil role of kaitiaki or manaaki others.
Wai Kino	Dangerous/polluted water. The mauri (life force) of the water has been altered through pollution and has the potential to do harm to all living things (including humans and ecosystems). Also refers to dangerous water such as rapids.	Water clarity is poor. Stream or riverbed is muddy and riparian overhang does not provide shade. It would be risky to eat or drink anything that came from this stream or river.	There is a small amount of mahinga kai but it is not healthy. Potential to harvest is low.	State of mahinga kai is a risk to wellbeing. Iwi must alert others to avoid harm. Impacts mana.
Wai Mate	This is effectively dead water. It cannot sustain life. It is dangerous to all living things (including humans and ecosystems) because it can cause illness or misfortune.	Water clarity is very poor, flow is too slow. The stream or riverbed is covered in silt and mud. There is no riparian overhang. I would not drink out of or eat anything from this stream.	There is no mahinga kai at the site. The potential to harvest is zero.	Hinapouri. Grief for loss. Concern for effects on coast. Need for restititional process.

22 Acknowledgement

Te Kāhui Taiao acknowledges the significant contribution from the following organisations and people, in creating Te Mahere Wai o Te Kāhui Taiao, a Mana Whenua whaitua implementation plan to return the mana to our freshwater bodies.

Vanessa Tipoki (Kāhu Environmental Limited), Aaria Ripeka Dobson-Waitere, Te Rangimārie Williams, Mike Grace, Morrie Love, Phillip Barker, Brent King, Tui Lewis, Gabriel Tupou, Nora Moore, Emily Osborne and others.

Designers: The Hive Creative, Wellington.

23 Disclaimer

Te Kāhui Taiao thanks the Whaitua Te Whanganui-a-Tara Committee for this opportunity to present our work which has been developed over the past year. We look forward to engaging in wānanga with the Committee to consolidate our recommendations to Greater Wellington.

Te Mahere Wai remains the intellectual and cultural property of Te Kāhui Taiao and should be read and considered as a whole.

24 Appendices

1. **Kuputaka (Glossary)**
2. **Te Oranga Wai worksheets**
3. **Ngā Mangai Waiora (ambassadors for water)**

Appendix 1

Kuputaka

GLOSSARY

araara	trevally
āhua	natural character
āku waiheke	small streams
aua	yellow-eyed mullet
awa	river or stream
awa tupua	ancestral rivers
hapū	group of whānau who share descent from common ancestor
hāpuku	groper
hao ika	to fish with nets, except eels
hauora	wellbeing
hī ika (sometimes te mahi hī ika)	to fish with a line
hinapōuri	grief
hopu tuna	to catch eels
īnanga	whitebait
iwi	tribal group
iwi kaitiaki plans	tribal group guardianship plans
kaitiaki	guardian
kaitiakitanga	guardianship
kākahi	freshwater mussels
kanae	grey mullet

karakia	prayer
karengo	sea lettuce
kaukau	swimming
kaumātua	elders
kawa	traditional protocols
kōura	freshwater crayfish
kautū	to wade
kohi kai	food gathering
kumukumu	gurnard
mahi hī ika	fishing with a line
mahi maitaitai	food gathering reserve
mahinga kai	food gathering or growing places
mahi pārekareka	relaxation and recreation
mahi raranga	plants used for weaving/construction
mai uta ki tai	from the inland to the sea
mana	authority
manaakitanga	hospitality, generosity and care for others
mana whakahaere	authority to manage
manawaroa	resilience
manuhiri	guests
marae	traditional meeting places
maramataka	lunar calendar
mātāpuna	headwaters, source of a river, a spring
mātauranga-a-iwi	traditional knowledge of a particular iwi
mate	death
mauri/mouri	life force
moemoeā	aspirations/long-term vision
mokopuna	grandchildren
ngā atua	gods
ngā awa	rivers
ngahere	forest, plantation
ngahere nā te tangata I whakatō	pine plantation
ngā ngutu awa	the river mouth
ngā rongoa	herbal remedies
ngā taonga nui a Kiwa	the treasured inheritance of Kiwa refers to waterbodies of most importance to mana whenua identified in Schedule B of the PNRP
ngā ūranga	landing/arrival places
ngōiro	conger eels

ngutu awa	river mouth
noa	everyday, free for use, free of tapu (not sacred)
nohoanga	camp
paina	pine tree
pakeke	adults
papa-tū-ā-nuku	the element of earth
pātiki	flounder
pēpē	baby/babies
piharau	lamprey
Puanga/Matariki	Rigel/Pleiades – stars which mark the Māori New Year
puku	belly
rāhui	ritual prohibition/closed season
rangatahi	youth
rangatiratanga	chiefly autonomy
repo	wetland
riri	angry
ritenga kaupare waipuke	flood protection practice
rohe	traditional district
rōpū	group
rukuruku	diving
ruranga	guest/express duties of a host
taiao	natural world, nature
taiohi	adolescent/young adults
take	issue/matter
takiwā	district
takutai	coast
takutai moana	the sea
tamariki	child/children
Tane	ancestor of terrestrial element
Tangaroa	ancestor of water element
tangohanga wai	water takes
tangohanga wai tāone	municipal water take
taonga	treasure
taonga species	highly esteemed species
taonga tuku iho	gifting of knowledge and resources for future generations
tapu	sacred
taunaki	recommendations
taunga ika	fishing ground
te hao ika	netting
te ira tangata	people

ngā mangai waiora	ambassadors for water
tohi	baptism
tohu tūpuna	ancestral indicators
tukunga rerenga waipuke	stormwater discharge
tupua	ancient phenomena
tuna	eels
tuturuwhatu	banded dotterels
uaratanga	value/values
ūnga	target
waerea	protective incantation
wāhi ahurea	cultural site
wāhi maumahara	places with significant history
wāhi tapu	sacred place
wāhi tūpuna	significant ancestral place
wāhi wai māori	Freshwater Management Units (FMUs)
wāhi whakahaumanu	a place for healing and restoration
wai	waterways
wai huna	concealed waters
wai kautū	water suitable for wading (kautū), not generally water where, due to water quality, one's head would be submerged
wai matua o tūāpapa	virgin water
wai māori	freshwater
wai mate	water which cannot sustain life
wai matua o tūāpapa	virgin water
wai ora	living water, water used for healing and rituals
wai tohi	water for baptism
waiora mai i uta ki tai	life-giving waters from mountains to sea
waka	canoe
waka ama	outrigger canoe
wānanga	formal discussions to share knowledge/place of deliberation
wai paruparu	wastewater
whakapapa	genealogy
whakapapa-based	genealogy-based
whakanoa	make free from tapu, to make something noa
whakarite	preparing for an important activity/event
whakatapu	make tapu
whakawātea	cleansing
whanaketanga	development
whānau	family group

APPENDIX 2

Te Oranga Wai Framework Assessments for Te Mahere Wai

These assessments were completed by Mana Whenua members of Te Kāhui Taiao with the input of other tangata whenua and local kaitiaki.

1. Te Oranga Wai Assessment for Te Awa Kairangi

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Water quality	Taste, drinkability	I would feed water that comes from this stream to children or kaumātua without hesitation.	Wai Māori .	Wai Māori entire length (medium term).	Long term
	River bed composition	No mud or silt present along the riverbed across the entire awa.	Not assessed.		
Water quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the awa.	Wai Kauriū .	Wai Māori at swimming holes (medium term).	Long term
	Develop assessment of wadeable awa through cultural framework	To be determined.	Wai Kauriū .		
	Development of cultural flows	Develop cultural framework for water allocation for all of the whaitua, small streams and large (these are not environmental flows).	Wai Mate .	Wai Ora (short term).	Short term
Mahinga kai	Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	Wai Kino .	Wai Ora (short term).	Short term
	Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	Wai Kauriū .	Wai Māori (medium term).	Long term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	Five or more mahinga kai species present.	<u>Wai Kautū</u> . <u>Wai Ora</u> above reservoir for watercress, tuna and harakeke.	<u>Wai Māori</u> (medium term). Maintain pristine areas.	Long term
Species presence/abundance			<u>Wai Kautū</u> .	<u>Wai Māori</u> (medium term), some uncertainty between medium and short term.	Long term
Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.		Āe, above reservoir. Below, kaua.	Improve <u>Wai Māori</u> (medium term).	Long term
Habitat assessment			<u>Wai Kautū</u> .	<u>Wai Ora</u> .	Short term
Rubbish audit	No evidence of waste present across the awa.		<u>Wai Kautū</u> .	Maintain.	Short term
Smell	There is no odour present in the water.		<u>Wai Ora</u> in te mātāpuna (the headwaters). <u>Wai Kautū</u> mainstem. <u>Wai Mate</u> in estuary and Waiwhetū Stream.	<u>Wai Māori</u> (long term).	Long term
Riparian cover	There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones (awa, awa banks and surrounding land).		Mainstem is <u>Wai Kautū</u> .	<u>Wai Māori</u> (short term).	Long term kahikatea
Fish passage assessment	The passage of fish is maintained, or improved, by removal of instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.		<u>Wai Kautū</u> .	Audit short term, remediation all structures (medium term).	Medium term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangī Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Sources of pollution	All known point sources of pollution have been identified and remedied. Discharges include mortuary waste.	<u>Wai Mate</u> Silverstream and unconsented wastewater discharges. <u>Wai Kino</u> mainstem.	<u>Wai Māori</u> (medium term). Removal point source discharges immediately.	Medium term	
Feeling in puku	There is a sense of calm and a feeling of wairua in the surrounding area.	<u>Wai Ora</u> upstream. Strong spiritual connection. <u>Wai Kino</u> in lower end of catchment.	<u>Wai Māori</u> (medium term).	Long term	
Sounds	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Kino</u> in parts. <u>Wai Kino</u> in lower end of catchment.	<u>Wai Māori</u> (medium term).	Long term	
Channel modification	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Kino</u> . Below Maoribank it is <u>Wai Mate</u> .	Riverlink assessment (medium term). <u>Wai Māori</u> , holistic river management (long term).	Long term	
Flora/fauna	Species presence/absence	Native flora species cover 100% of the wai. <u>Wai Kauri</u> .	<u>Wai Māori</u> , plants and rongoā in the (short term).	Medium term	
	Native fauna species cover 100% of the wai.	<u>Wai Kauri</u> . Patchy. River mouth still has shellfish, kahawai. Bird life is improving, prolific, coming back, lots of sea birds.	<u>Wai Māori</u> (long term).	Long term	
	Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa.	<u>Wai Māori</u> (short term) - particularly with planting projects.	Short term	

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Taonga species	Kōrero tuku iho	Mātauranga knowledge and connection is strong and being passed onto younger generations.	Wai Kino - not enough people to give effect to this.	Wai Māori (medium term).	Medium term
	Species presence	There is 100% of taonga species present across the FMU.	Wai Kautū.	Wai Māori (medium term).	Long term
	Physical health	Health of taonga species are excellent across this FMU, 0% covered with diseases/parasites.	Wai Kautū.	Wai Māori (short term).	Long term
	Habitat quality	Habitat for taonga species provides remedy, protection and food sources.	Wai Kino.	Wai Māori (medium term).	Medium term
Wāhi tapu	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place.	Wai Kino.	Wai Māori (short term).	Short term
	Access	Wāhi tapu are accessible by Mana Whenua.	Top end not accessible, bottom is accessible but modified.	Wai Māori (short term).	Medium term
	Kōrero tuku iho	Mātauranga knowledge and connection are strong. These are passed onto younger generations.	Wai Kino.	Wai Ora (short term).	Short term
Relationship audit	Development of management plans	A management plan reflecting Te Mana o te Wai hierarchy has been developed and is implemented with Mana Whenua which defines roles in protection, access arrangements and contains all kōrero pertaining to the site.	Wai Kino.	Wai Ora (immediately).	Short term
	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the river. The data is being listened to and informs future decision-making regarding the river. They are decision-makers.	Wai Kino.	Wai Ora (short term).	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
	Review of resource consents, compliance	A full review of all discharge and water take resource consents is performed.	Wai Kino.	Wai Ora (immediately).	Short term
Mātauranga	Place names	Where they exist, all original names of sites, awa, features and areas will be privileged. Mana Whenua will develop and implement the naming policy for adoption by local government to ensure the right to name streams and other sites.	Wai Kino.	Wai Ora (short term).	Short term
	Sound (te reo Māori, karakia)	Te reo me ona tikanga are present at this site. Te reo Māori is heard, through karakia and kōrero. Signage, apps and technology use.	Wai Kino.	Wai Ora (short term).	Short term
	Sites of significance have been identified	All sites of significance have been identified by Mana Whenua and stories are recorded and shared where appropriate.	Wai Kauti.	Wai Ora (short term).	Short term
	Education	Iwi and Greater Wellington work together to resource and develop an ongoing education and communication campaign.	Wai Kauti.	Wai Māori (short term).	Medium term

2. Te Oranga Wai Assessment for Waiwhetu

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Water quality/ quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the awa	<u>Wai Kino.</u>	<u>Wai Māori</u> mai uta ki tai (long-term).	Long term
Water quantity	Develop assessment of wadeable awa through cultural framework	To be determined. Turanga waka. Navigability for the lower reach.	<u>Wai Kino.</u>	To be determined.	To be determined.
	Development of cultural flows	Develop cultural framework for water allocation for all of the waitua, small streams and large (these are not environmental flows).	<u>Wai Mate.</u>	<u>Wai Ora</u> (short term).	Short term
Mahinga kai	Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	<u>Wai Kino.</u>	<u>Wai Ora</u> (short term).	Short term
	Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	<u>Wai Kino.</u>	<u>Wai Māori</u> (medium term).	Long term
	Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	<u>Wai Kino.</u>	<u>Wai Māori</u> (medium term). Maintain pristine areas.	Long term
	Species presence/ abundance	Five or more mahinga kai species present.	<u>Wai Kautū.</u>	<u>Wai Māori</u> (medium term), some uncertainty between medium and short term.	Long term
	Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.	<u>Wai Kino.</u>	Improve <u>Wai Māori</u> (medium term). Is a rāhui relevant to raise awareness and provide protection?	Long term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Habitat assessment	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Rubbish audit		No evidence of waste present across the awa.	<u>Wai Kautū.</u>	<u>Wai Ora.</u>	Short term
Smell		There is no odour present in the water.	<u>Wai Mate</u> in Waiwhetu Stream.	Maintain headwater bush. <u>Wai Māori</u> (long term).	Short term Long term
Riparian cover		There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones (awa, awa banks and surrounding land).	Mainstem is <u>Wai Kautū.</u>	<u>Wai Māori</u> (short term).	Long term
Fish passage assessment		The passage of fish is maintained, or improved, by removal of instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.	<u>Wai Kautū.</u>	Audit short term, remediation all structures (short term).	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Sources of pollution	All known point sources of pollution have been identified and remedied. Tapu discharges include mortuary waste and blood products		<u>Wai Mate</u> and unconsented wastewater discharges. Tapu and noa are not currently separated.	<u>Wai Māori</u> (medium term). Removal point source discharges immediately. Need incentivising and penalising incentives, get movement of people reporting discharges. Rāhui may be warranted here. Wananga on streams where cleaning/ cleansing was identified and appropriate.	Medium term
Feeling in puku		There is a sense of calm and a feeling of waitua in the surrounding area.	<u>Wai Māori</u> .	Continue to enhance the ataa hua.	Medium term
Sounds		The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Kautiū</u> .	<u>Wai Māori</u> (medium term).	Long term
Channel modification		The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Kino</u> .	<u>Wai Māori</u> , holistic river management long term.	Long term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Flora/fauna	Species presence/absence	Native flora species cover 100% of the wai. Native fauna species cover 100% of the wai.	<u>Wai Kaiti</u> . <u>Wai Kaiti</u> . (Shared Hutt River mouth commentary) Patchy. River mouth still has shellfish, kahawai. Bird life is improving, prolific, coming back, lots of sea birds.	<u>Wai Māori</u> (medium term). <u>Wai Māori</u> (medium term).	Long term Long term
Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa.	<u>Wai Kaiti</u> . (Prevalence of introduced grass - convert to natives).	<u>Wai Māori</u> (medium term). (particularly with riparian planting projects).	Long term	
Taonga species	Kōrero tuku iho	Mātauranga knowledge and connection is strong and being passed onto younger generations.	<u>Wai Kaiti</u> – some uncertainty, will assess further.	<u>Wai Māori</u> (medium term).	Long term
Species presence	There is 100% of taonga species present across the FMU.	<u>Wai Kaiti</u> . Need to monitor regularly to investigate.	<u>Wai Māori</u> (medium term). A number of species being present at a stable population, working towards harvestable.	Long term	
Physical health	Health of taonga species are excellent across this FMU. 0% covered with diseases/parasites.	<u>Wai kino</u> . Not willing to eat mahinga kai at present.	<u>Wai Māori</u> (medium term 30yrs).	Long term	
Habitat quality	Habitat for taonga species provides remedy, protection and food sources (for the taonga species).	<u>Wai Kino</u> .	<u>Wai Māori</u> (medium term). Imagining good local improvement leading to short term achievement.	Long term	

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Wāhi tapu	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place. Note the importance of Urupa sites in this catchment	<u>Wai Kautū</u> . (defer to conversations with Teri Puketapu).	<u>Wai Māori</u> (short term).	Short term
	Access	Wāhi tapu are accessible by Mana Whenua.	<u>Wai Kautū</u> . (defer to conversations with Teri Puketapu).	<u>Wai Māori</u> (short term).	Medium term
	Exchange Kōrero tuku iho	Mātauranga knowledge and connection are strong. These are passed onto younger generations.	<u>Wai Kautū</u> . (defer to conversations with Teri Puketapu). Kōrero e tuku iho.	<u>Wai Ora</u> (short term).	Short term
Relationship audit	Development of management plans	A management plan reflecting Te Mana o te Wai hierarchy has been developed and is implemented with Mana Whenua which defines roles in protection, access arrangements and contains all kōrero pertaining to the site.	<u>Wai Kino</u> .	<u>Wai Māori</u> (immediately). Build this on a base of Mana Whenua (marae and local level) discussing and choosing their aspirations and own plans first, then engaging with partners.	Short term
Flora/fauna	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the awa. The data is being listened to and informs future decision-making regarding the awa. They are decision-makers.	<u>Wai Kino</u> .	<u>Wai Māori</u> (short term). Reviewed immediately.	Short term
	Review of resource consents, compliance	A full review of all discharge and water take resource consents is performed.	<u>Wai Kino</u> .	<u>Wai Ora</u> (immediately).	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Mātauranga	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Place names	Where they exist, all original names of sites, awa, features and areas will be privileged. Mana Whenua will develop and implement the naming policy for adoption by local government to ensure the right to name streams and other sites.		<u>Wai Kino.</u> (Do not currently encounter signage to communicate to meaning, whakapapa and history of waiwhetu.)	<u>Wai Ora (short term).</u> Knowledge will be there for Mana Whenua – have this shared enough to allow agencies to communicate this, using signage etc.	Short term
Sound (te reo Māori, karakia)	Te reo me ona tikanga are present at this site. Te reo Māori is heard, through karakia and kōrero. Signage, apps and technology use.		<u>Wai Kauri.</u> (Investigate further, believe some tikanga is being practised with the wai.)	<u>Wai Ora (short term).</u>	Short term
Sites of significance have been identified	All sites of significance have been identified by Mana Whenua and stories are recorded and shared where appropriate.		<u>Wai Kauri.</u>	<u>Wai Ora (short term).</u>	Short term
Education	Iwi and Greater Wellington work together to resource and develop an ongoing education and communication campaign.		<u>Wai Kauri.</u>	<u>Wai Māori (short term).</u>	Medium term

3. Te Oranga Wai assessment for Kaiwharawhara and Wellington Urban

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Water quality	<i>E. coli</i>	There is 0% risk of <i>Campylobacter</i> infection.	<u>Wai Mate</u> . (Unintentional overflow), mana Māori perspective, tūtae means this water cannot be used.	<u>Wai Māori</u> (long term).	Long term
	Taste, drinkability	I would feed water that comes from this stream to children or kaumātua without hesitation.	<u>Wai Mate</u> .	<u>Wai Māori</u> (long term).	Long term
	River bed composition	No mud or silt present along the riverbed across the entire awa.	Not assessed.		
Water quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the wai	<u>Wai Mate</u> for all except those coastal swimming sites is <u>Wai Kautū</u> . No overflow is acceptable to Mana Whenua. Applies to all customary uses. Depths and contamination.	<u>Wai Māori</u> at swimming holes (medium term). <u>Wai Māori</u> for streams (long term).	Long term
	Develop assessment of wadeable awa through cultural framework	To be determined.	<u>Wai Mate</u> . Coastal swimming sites <u>Wai Kino</u> .	<u>Wai Māori</u> (long term).	Long term
	Development of cultural flows	Develop cultural framework for water allocation for all of the whaitua, small streams and large (these are not environmental flows).	<u>Wai Mate</u> .	<u>Wai Ora</u> (short term).	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Mahinga kai	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	Wai Kiro.	Wai Ora (short term).	Short term	
Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	Wai Mate.	Wai Māori (long term).	Long term	
Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	Wai Kauriū presence.	Wai Māori (long term).	Long term	
Species presence/abundance	Five or more mahinga kai species present.	Wai Kauriū.	Wai Māori (long term).	Long term	
		Wai Māori at estuary/coastal sites.	Uncertainty around abundance and recruitment (juveniles).		
Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.	Wai Mate estuary/coastal/mainstem.	Wai Māori (long term).	Long term	
		Wai Mate shellfish.	Fin fish (maintain).		
		Wai Māori fin fish at coastal sites.			

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Habitat assessment	Rubbish audit	No evidence of waste present across the awa.	<u>Wai Kautū</u> .	<u>Wai Ora</u> .	Short term
	Smell	There is no odour present in the water.	<u>Wai Kino</u> streams. <u>Wai Mate</u> at estuary.	<u>Wai Maori</u> (medium term).	Long term
	Riparian cover	There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones (awa, awa banks and surrounding land).	<u>Wai Māori</u> Kaiwharawhara, Karori, Owhiro, Eastbourne. Waimapihi and other streams are <u>Wai Māori</u> . Piped streams, <u>Wai Mate</u> .	<u>Wai Ora</u> (medium term).	Medium term
	Fish passage assessment	The passage of fish is maintained, or improved, by removal of instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.	<u>Wai Kino</u> . Source to sea, assessments presence and absence, a lot of fish that would be there are not in the upper reaches.	Audit short term (<u>Wai Ora</u>), remediation structures (medium term <u>Wai Ora</u>), remediation of pipes (<u>Wai Kautū</u> , long term).	Long term
	Sources of pollution	All known point sources of pollution have been identified and remedied. Discharges include mortuary waste.	<u>Wai Mate</u> .	<u>Wai Māori</u> (long term). Removal point source discharges immediately.	Medium term
	Feeling in puku	There is a sense of calm and a feeling of waitua in the surrounding area.	<u>Wai Ora</u> upstream. Strong spiritual connection. <u>Wai Kino</u> in lower end of catchment.	<u>Wai Māori</u> (medium term).	Long term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangī Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Sounds	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Māori</u> .	<u>Wai Māori</u> (short term).	Long term	
Channel modification	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Kino</u> . Development building up to banks, roading, rip rapping in channels (flood protection), concrete in streams, battering.	WSD and development, removal of channels, <u>Wai Kautū</u> (medium term). Managed retreat etc. (long term).	<u>Wai Māori</u> long term.	
Flora/fauna	Species presence/absence	Native flora species cover 100% of the wai.	<u>Wai Māori</u> for coastal flora. <u>Wai Kautū</u> for all other areas.	<u>Wai Kautū</u> for coastal (medium term). <u>Wai Māori</u> , plants and rongoā in the short term for all others.	Long term coastal Medium term others
Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa.	Coastal areas <u>Wai Māori</u> . <u>Wai Kino</u> (based on fish barriers) other parts of the stream.	Coastal areas maintain at <u>Wai Māori</u> . Audit short term (Wai Ora), remediation structures (medium term Wai Ora), remediation of pipes (<u>Wai Kautū</u> , long term).	<u>Wai Māori</u> (short term) – particularly with planting projects.	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Taonga species	Kōrero tuku iho	Mātauranga knowledge and connection is strong and being passed onto younger generations.	<u>Wai Kino</u> - not enough people to give effect to this.	<u>Wai Māori</u> (short term).	Short term
	Species presence	There is 100% of taonga species present across the FMU.	<u>Wai Kautū</u> .	<u>Wai Māori</u> (medium term).	Long term
	Physical health	Health of taonga species are excellent across this FMU, 0% covered with diseases/parasites.	<u>Wai kautū</u> . <u>Wai Mate</u> for shellfish.	<u>Wai Māori</u> (short term). <u>Wai Māori</u> for shellfish (long term).	Long term
	Habitat quality	Habitat for taonga species provides remedy, protection and food sources.	<u>Wai Kino</u> .	<u>Wai Māori</u> (medium term).	Long term
Wahi tapu	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place.	<u>Wai Kino</u> .	<u>Wai Māori</u> (short term).	Short term
	Access	Wāhi tapu are accessible by Mana Whenua.	<u>Wai Māori</u> .	<u>Wai Māori</u> (short term).	Long term
	Kōrero tuku iho	Mātauranga knowledge and connection are strong. These are passed onto younger generations.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
Relationship audit	Development of management plans	A management plan reflecting Te Mana o te Wai hierarchy has been developed and is implemented with Mana Whenua which defines roles in protection, access arrangements and contains all kōrero pertaining to the site.	<u>Wai Kino</u> .	<u>Wai Ora</u> (immediately).	Short term
	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the awa. The data is being listened to and informs future decision-making regarding the awa. They are decision-makers.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
	Review of resource consents, compliance	A full review of all discharge and water take resource consents is performed.	<u>Wai Kino</u> .	<u>Wai Māori</u> (immediately).	Medium term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Mātauranga	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Place names	Where they exist, all original names of sites, awa, features and areas will be privileged. Mana Whenua will develop and implement the naming policy for adoption by local government to ensure the right to name streams and other sites.	Wai Ora (short term).	Wai Ora (short term).	Wai Ora (short term).	Short term
Sound (te reo Māori, karakia)	Te reo me ōna tikanga are present at this site. Te reo Māori is heard, through karakia and kōrero. Signage, apps and technology use.	Wai Kino.	Wai Ora (short term).	Wai Ora (short term).	Short term
Sites of significance have been identified	All sites of significance have been identified by Mana Whenua and stories are recorded and shared where appropriate.	Wai Kaurū.	Wai Ora (short term).	Wai Ora (short term).	Short term
Education	Iwi and Greater Wellington work together to resource and develop an ongoing education and communication campaign.	Wai Kaurū.	Wai Māori (short term).	Wai Māori (short term).	Medium term

4. Te Oranga Wai assessment for Korokoro

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Water quality	Suspended sediment	Minimal impact of suspended sediment on instream biota/stream life.	Wai Māori.		Short term
	Temperature	Water temperature remains below the 20 degrees celcius threshold, even in the summer months.	Wai Ora.		
	Periphyton	Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime or habitat.	Wai Māori.		Short term
	Flow	Stream flow is steady with natural variation (pools, runs, riffles)	Wai Ora.		
	<i>E. coli</i>	There is 0% risk of <i>Campylobacter</i> infection.	Wai Kautū.		Short term
	Dissolved oxygen	No stress caused by low dissolved oxygen on any aquatic organisms that are present.	Wai Māori.		Short term
	Clarity	The water is clear across the entire awa, you can see through to the river bed.	Wai Ora.		
	MCI	Macroinvertebrate community, indicative of pristine conditions with no organic pollution or nutrient enrichment.	Wai Māori.		Short term
	Taste, drinkability	I would feed water that comes from this stream to children or kaumātua without hesitation.	Wai Māori.	Wai Māori entire length (medium term).	Medium term
	River bed composition	No mud or silt present along the riverbed across the entire awa.	Wai Ora.		

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Water quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the awa.	Wai Kautū.	Wai Māori at swimming holes. (medium term).	Medium term
	Develop assessment of wadeable awa through cultural framework	To be determined.	Wai Māori.	Wai Ora.	Medium term
	Development of cultural flows	Develop cultural framework for water allocation for all of the whaitua, small streams and large (these are not environmental flows). *Check consents for water takes.	Wai Mate. Develop cultural framework for water allocation for all of the whaitua, small streams and large.	Wai Ora (short term).	Short term
Mahinga kai	Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	Wai Kautū.	Wai Māori (short term).	Short term
	Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	Wai Kino.	Wai Māori (medium term).	Medium term
	Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	Wai Kino.	Wai Māori (medium term).	Medium term
	Species presence/abundance	Five or more mahinga kai species present.	Wai Kino.	Wai Māori (medium term).	Medium term
	Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.	Wai Māori.	Wai Māori (maintain).	Immediately Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Habitat assessment					
Rubbish audit	No evidence of waste present across the awa.	<u>Wai Ora</u> .	<u>Wai Ora</u> .	<u>Wai Ora</u> (maintain).	Short term
Smell	There is no odour present in the water.	<u>Wai Ora</u> .	<u>Wai Ora</u> .	<u>Wai Ora</u> (maintain).	Short term
Riparian cover	There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones (awa, awa banks and surrounding land).	<u>Wai Ora</u> .	<u>Wai Ora</u> .	<u>Wai Ora</u> (maintain).	Short term
Fish passage assessment	The passage of fish is maintained, or improved, by removal of instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.	<u>Wai Kautū</u> .	<u>Wai Māori</u> . Audit short term, remediation all structures (medium term).		Short term
Sources of pollution	All known point sources of pollution have been identified and remedied. Discharges include mortuary waste.	<u>Wai Kautū</u> .	<u>Wai Ora</u> (medium term).		Medium term
Feeling in puku/ puku-kōrero	There is a sense of calm and a feeling of waitua in the surrounding area.	<u>Wai Ora</u> .	<u>Wai Ora</u> (maintain).		Short term
Sounds	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Ora</u> .	<u>Wai Ora</u> (maintain).		Short term/Half generation
Channel modification	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	<u>Wai Ora</u> (upper catchment) and <u>Wai Kautū</u> at (lower).	<u>Wai Ora</u> (maintain) and <u>Wai Māori</u> at lower (medium term).		Short term (upper) and medium term (lower)

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Flora/fauna	Species presence/absence	Native flora species cover 100% of the wai. Retire Korokoro pine forest. Native fauna species cover 100% of the wai.	Wai Kauri.	Wai Ora (medium term).	Medium term
	Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa. Weed has taken over areas of watercross.	Wai Māori.	Wai Ora (short term).	Short term
Taonga species	Kōrero tuku iho	Mātauranga knowledge and connection is strong and being passed onto younger generations.	Wai Ora.		
	Species presence	There is 100% of taonga species present across the FMU.	Wai Māori.		Medium term
	Physical health	Health of taonga species are excellent across this FMU, 0% covered with diseases/parasites.	Wai Kauri.		Medium term
	Habitat quality	Habitat for taonga species provides remedy, protection and food sources.	Wai Kauri.		Short term
Wāhi tapu	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place.	Wai Mate.		Short term
	Access	Wāhi tapu are accessible by Mana Whenua.	Wai Māori.		Short term
	Kōrero tuku iho	Mātauranga knowledge and connection are strong. These are passed onto younger generations.	Wai Ora.		

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangī Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Relationship audit	Development of management plans	A management plan reflecting Te Mana o te Wai hierarchy has been developed and is implemented with Mana Whenua which defines roles in protection, access arrangements and contains all kōrero pertaining to the site.	<u>Wai Mate.</u>		Short term
	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the awa. The data is being listened to and informs future decision-making regarding the awa. They are decision-makers.	<u>Wai Mate.</u>		Short term
	Review of resource consents, compliance	A full review of all discharge and water take resource consents is performed.	<u>Wai Mate.</u>		Short term
Mātauranga	Place names	Where they exist, all original names of sites, awa, features and areas will be privileged. Mana Whenua will develop and implement the naming policy for adoption by local government to ensure the right to name streams and other sites.	<u>Wai Mate.</u>		Short term
	Sound (te reo Māori, karakia)	Te reo me ona tikanga are present at this site. Te reo Māori is heard, through karakia and kōrero. Signage, apps and technology use.	<u>Wai Mate.</u>		Short term
	Sites of significance have been identified	All sites of significance have been identified by Mana Whenua and stories are recorded and shared where appropriate.	<u>Wai Mate.</u>		Short term
	Education	Iwi and Greater Wellington work together to resource and develop an ongoing education and communication campaign.	<u>Wai Mate.</u>		Short term

5. Te Oranga Wai assessment for Southwest Coast (to be assessed with Mana Whenua kaitiaki)

5. Te Oranga Wai assessment for Wainuiomata

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Wai Ora attribute state	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute			Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Water quality	<i>E. coli</i>	There is 0% risk of <i>Campylobacter</i> infection.	Headwaters <u>Wai Ora</u> , <u>Wai Mate</u> urban area. Rural <u>Wai Kino</u> (stock faeces). <u>Wai Māori</u> coastal area.	Maintain. <u>Wai Māori</u> (medium term) for all.	Long term	
	Taste, drinkability	I would feed water that comes from this stream to children or kaumātua without hesitation.	<u>Wai Mate</u> .	<u>Wai Māori</u> (long term).	Long term	
	River bed composition	No mud or silt present along the riverbed across the entire awa.	Not assessed.			
Water quantity	Swimmable	Rangatahi can do bombs without getting sick or hitting the bottom of the wai.	<u>Wai Ora</u> above Black Creek. <u>Wai Māori</u> (depth). <u>Wai Mate</u> for lower reaches (<i>E. coli</i>). <u>Wai Māori</u> open coast area.	Maintain <u>Wai Ora</u> upper reaches. Urban <u>Wai Māori</u> (medium term). <u>Wai Māori</u> rural (short term). <u>Wai Māori</u> maintain open coast.	Long term	
	Develop assessment of wadeable awa through cultural framework	To be determined.	<u>Wai Ora</u> headwaters. <u>Wai Mate</u> Black Creek. Other parts <u>Wai Kaitiū</u> .	<u>Wai Ora</u> (maintain). <u>Wai Māori</u> (long term) for Black Creek. Other parts <u>Wai Māori</u> (short term).	Long term	

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Development of cultural flows	Develop cultural framework for water allocation for all of the whaitua, small streams and large (these are not environmental flows).	<u>Wai Mate.</u>	<u>Wai Mate.</u>	<u>Wai Ora</u> (short term).	Short term
Mahinga kai	Kōrero tuku iho	Knowledge around sites, species and tikanga are abundant and transferred to younger generations.	<u>Wai Kino.</u>	<u>Wai Ora</u> (short term).	Short term
Harvest potential	There is a possibility to harvest sustainably twice a year for ceremonies.	<u>Wai Mate.</u>	<u>Wai Mate.</u>	<u>Wai Māori</u> (short term).	Long term
Health of mahinga kai	Mahinga kai are healthy, free of disease and regenerating. Habitat for mahinga kai provides remedy, protection and food sources.	<u>Wai Kautū.</u>	<u>Wai Kautū.</u>	<u>Wai Māori</u> (short term).	Long term
Species presence/ abundance	Five or more mahinga kai species present.	<u>Wai Māori.</u>	<u>Wai Māori.</u>	<u>Wai Māori</u> (short term).	Medium term
Kai safe to eat	I would feed food that comes from this stream to children or kaumātua without hesitation.	<u>Wai Kautū.</u>	<u>Wai Kautū.</u>	<u>Wai Māori</u> (short term).	Long term
Rubbish audit	No evidence of waste present across the awa.	<u>Wai Kautū.</u>	<u>Wai Kautū.</u>	<u>Wai Ora.</u>	Short term
Smell	There is no odour present in the water.	Black Creek – <u>Wai Mate.</u> Forested – <u>Wai Ora.</u> Mainstem – <u>Wai Kautū.</u> Coast – <u>Wai Ora.</u>	Black Creek – <u>Wai Mate.</u> Forested – <u>Wai Ora.</u> Mainstem – <u>Wai Kautū.</u> Coast – <u>Wai Ora.</u>	<u>Wai Kautū</u> (medium term). Forested maintain (short term). <u>Wai Māori</u> (short term). Coast maintain <u>Wai Ora.</u>	Medium term
Habitat assessment					

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangī Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora	
Mahinga kai	Riparian cover	There is riparian overhang cooling the water. Riparian shade covers the entire awa. Riparian continuation occurring across the 3 zones (awa, awa banks and surrounding land).	Wai Mate, Black Creek Wainuiomata. Forested Wai Ora. Mainstem/rural Wai Kino. Coast/estuary Wai Kaurū.	Wai Kaurū, Black Creek (medium term). Maintain forest Wai Ora. Mainstem, Wai Māori (medium term). Coast/estuary Wai Ora (medium term).	Wai Māori long term for Black Creek.
Fish passage assessment	The passage of fish is maintained, or improved, by removal of instream structures, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.	Wai Kaurū.	Wai Ora (short term).	Short term	
Sources of pollution	All known point sources of pollution have been identified and remedied.	Wai Mate. Land fill. Urban stormwater 1 in 10 year standard. Point source stormwater and wastewater. Whole plan approach required.	Plan development Wai Māori (short term). Wai Māori prioritised (medium term).	Long term	
Feeling in puku	There is a sense of calm and a feeling of wairua in the surrounding area.	Wai Ora upstream. Strong spiritual connection. Wai Kaurū.	Maintain upstream Wai Ora. Wai Māori (short term).	Long term	

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangī Wā e Tutuki ai Te Wai Ora
Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Wai Ora upstream. Strong spiritual connection. Wai Kautū urban area.	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Sounds	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	Wai Ora upstream. Strong spiritual connection. Wai Kautū urban area.	Maintain upstream <u>Wai Ora</u> . Wai Māori (short term) urban area.	Maintain upstream <u>Wai Ora</u> . Wai Māori (short term) urban area.	Long term
Channel modification	The awa can be heard from a fair distance away (past the riparian zone). Native birds are loud and can be heard a distance away from the awa.	Black Creek, Wainuiomata, waimate. <u>Wai Kautū</u> for the rest.	<u>Wai Māori</u> (short term).	<u>Wai Māori</u> (short term).	Long term
Flora/fauna	Species presence/absence	Native flora species cover 100% of the wai.	<u>Wai Ora</u> for te mātāpuna (headwaters). <u>Wai Mate</u> , Black Creek. <u>Wai Kautū</u> for the rest.	<u>Wai Ora</u> (maintain). Black Creek, <u>Wai Māori</u> (long term). <u>Wai Māori</u> (short term) for the rest.	
Introduced species presence/abundance	Pest flora and fauna species are managed to below 10% of species present. There are no willows present along this awa. Trout, cow cress, weeds, blackberry, trout, willows.	Native fauna species cover 100% of the wai.	Bush area is <u>Wai Ora</u> . Black Creek <u>Wai Mate</u> . Remainder <u>Wai Kautū</u> .	Maintain. <u>Wai Māori</u> (long term). Remainder <u>Wai Māori</u> (short term).	Long term

	Ānuatanga	Tūnga Ānuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
Kaupapa	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
Taonga species	Kōrero tuku iho	Mātauranga knowledge and connection is strong and being passed onto younger generations.	<u>Wai Kino</u> – not enough people to give effect to this.	<u>Wai Māori</u> (short term)	Medium term
	Species presence	There is 100% of taonga species present across the FMU.	Urban/rural <u>Wai Kino</u> . Remainder <u>Wai Ora</u> .	<u>Wai Māori</u> (long term). Remainder <u>Wai Ora</u> (maintain).	Long term
	Physical health	Health of taonga species are excellent across this FMU, 0% covered with diseases/parasites.	Forested <u>Wai Ora</u> . <u>Wai Kauri</u> . Urban/Black Creek <u>Wai Kino</u> .	Forested maintain/protect <u>Wai Ora</u> . <u>Wai Māori</u> (short term). Urban/Black Creek (Wai Māori medium term).	Long term
	Habitat quality	Habitat for taonga species provides remedy, protection and food sources.	<u>Wai Ora</u> headwaters. Black Creek <u>Wai Mate</u> . Mainstem <u>Wai Kino</u> .	<u>Wai Ora</u> (maintain). <u>Wai Kauri</u> Black Creek (medium term). Mainstem <u>Wai Māori</u> (medium term).	Long term
Wāhi tapu	Site assessment	Wāhi tapu are completely protected and a wāhi tapu management plan is in place.	<u>Wai Kino</u> .	<u>Wai Māori</u> (short term).	Short term
	Access	Wāhi tapu are accessible by Mana Whenua.	<u>Wai Māori</u> .	<u>Wai Māori</u> (short term).	Long term
	Kōrero tuku iho	Mātauranga knowledge and connection are strong. These are passed onto younger generations.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
Relationship audit	Development of management plans	A management plan reflecting Te Mana o te Wai hierarchy has been developed and is implemented with Mana Whenua which defines roles in protection, access arrangements and contains all kōrero pertaining to the site.	<u>Wai Kino</u> .	<u>Wai Ora</u> (immediately).	Short term

Kaupapa	Āhuatanga	Tūnga Āhuatanga Whāinga mō Te Wai Ora	Aromatawai ā-kaupapa arowhānui	Ngā tikanga o Te Mana Whenua	Rārangi Wā e Tutuki ai Te Wai Ora
	Attribute	Wai Ora attribute state	Overall current kaupapa assessment	Mana Whenua target attribute state	Timeframe to reach Wai Ora
	Resourcing of kaitiaki	Mana Whenua kaitiaki are being resourced to do monitoring in the awa. The data is being listened to and informs future decision-making regarding the awa. They are decision-makers.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
	Review of resource consents, compliance	A full review of all discharge and water take resource consents is performed.	<u>Wai Kino</u> .	<u>Wai Māori</u> (immediately).	Medium term
Mātauranga	Place names	Where they exist, all original names of sites, awa, features and areas will be privileged. Mana Whenua will develop and implement the naming policy for adoption by local government to ensure the right to name streams and other sites.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
	Sound (te reo Māori, karakia)	Te reo me ōna tikanga are present at this site. Te reo Māori is heard, through karakia and kōrero. Signage, apps and technology use.	<u>Wai Kino</u> .	<u>Wai Ora</u> (short term).	Short term
	Sites of significance have been identified	All sites of significance have been identified by Mana Whenua and stories are recorded and shared where appropriate.	<u>Wai Kautū</u> .	<u>Wai Ora</u> (short term).	Short term
	Education	Iwi and Greater Wellington work together to resource and develop an ongoing education and communication campaign.	<u>Wai Kautū</u> .	<u>Wai Māori</u> (short term).	Medium term

7. Te Oranga Wai assessment for Orongorongo (to be assessed with Mana Whenua kaitiaki)

8. Te Oranga Wai assessment for Parangārehu Lakes (to be assessed with Mana Whenua kaitiaki)

9. Te Oranga Wai assessment for Wai Tai (to be assessed with Mana Whenua kaitiaki)

Appendix 3

Te Mangai Wai Ora (the voice for water)

Implementation of Te Mahere Wai

Mana Whenua expect to have an active role as kaitiaki in the management of Whaitua Te Whanganui -a-Tara. The role of iwi kaitiaki expresses our kawa (traditions) and tikanga (practices) and addresses our kaupapa (policy priorities) and take (issues) identified in Te Mahere Wai.

We propose that an entity is formed to help implement Te Mahere Wai that will support the development, training and employment of kaitiaki in the ongoing management of our whaitua Te Whanganui-ā-Tara.

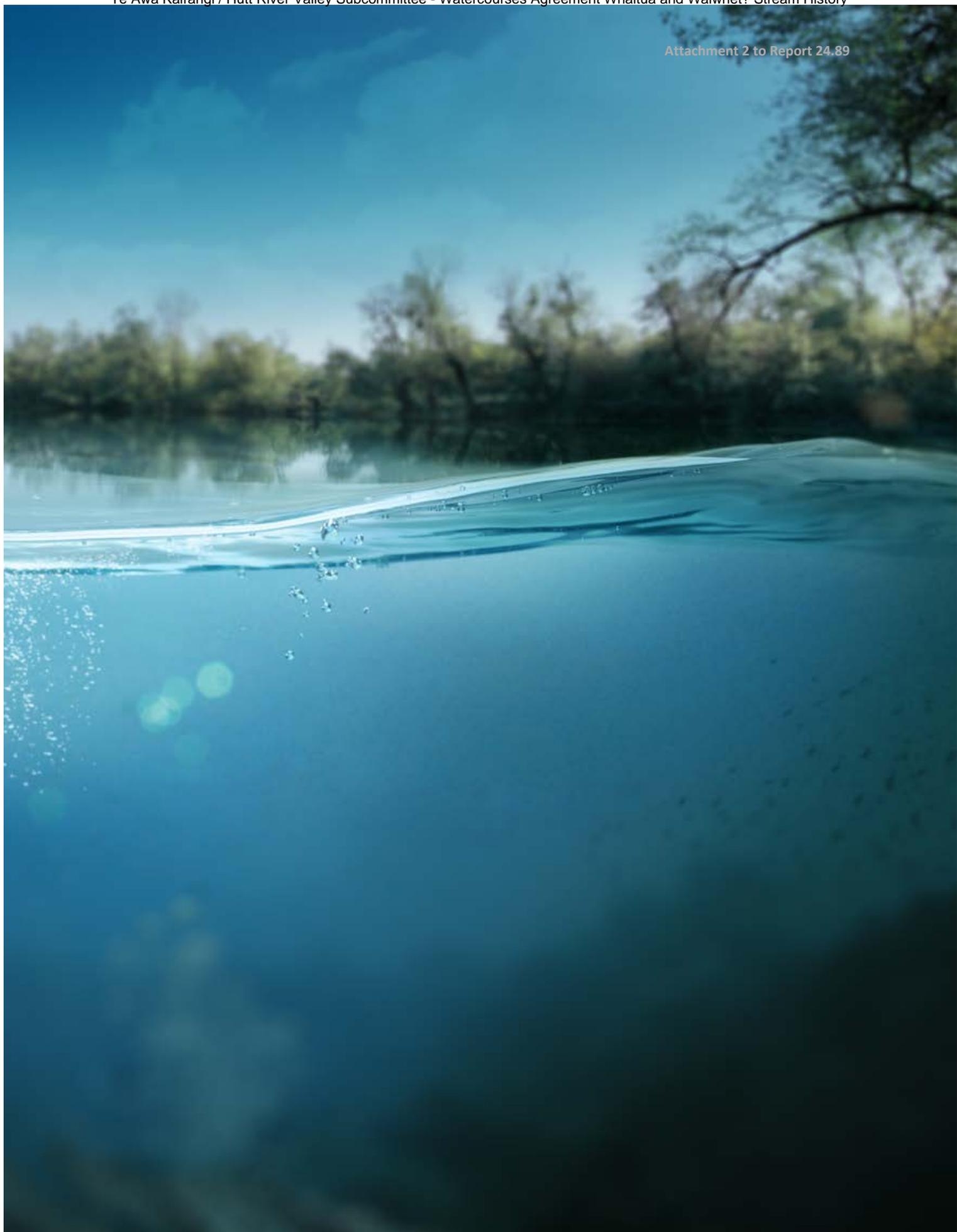
We propose that the new entity will focus on supporting our people through mātauranga-a-iwi (iwi knowledge systems) and applying that knowledge

to inform water quality restoration projects in the catchment. This could include our rangatahi and pakeke (youth and mature people). The entity could comprise a joint venture between Taranaki Whānui and Ngāti Toa Rangatira with resourcing from central government.

Kaitiaki roles and functions

Kaitiakitanga-a-iwi roles are required across all disciplines including:

1. Policy and planning that implements Te Mahere Wai and includes mātauranga-a-iwi in freshwater management and decision-making.
2. Cultural oversight and monitoring of Mana Whenua values, places and practices.
3. Training of kaitiaki in the tikanga required to deliver cultural oversight and management.
4. Compliance monitoring of wastewater and stormwater infrastructure in a similar manner to the Wellington Water or Wellington City Council roving crews.
5. Freshwater and receiving environment monitoring using Western science, mātauranga Māori and citizen science techniques. This data will inform our understanding of the current state of our wai, ecosystems, mahinga kai and the wider taiao/ environment, and will determine whether measures to improve the freshwater environment are effective or not.
6. Inclusion of an education and collaborative role between community, industry and schools sharing knowledge and mātauranga-a-iwi, to improve their understanding of, and relationships with, local waterbodies.
7. A partnership between community groups, mana whenua, industry and schools to clear waterways of rubbish, and plant native vegetation along riparian margins,
8. Reporting and responding to contamination and threats to waterways including monitoring of resource consents.
9. Providing mātauranga-a-iwi support and training to councils, community, schools and industry.





Te Whaitua te Whanganui-a-Tara Implementation Programme

Whaitua Te Whanganui-a-Tara Committee, September 2021



Our Story

In 2019, the members of the newly established Whanganui-a-Tara Whaitua Committee from Wellington, Upper Hutt and Lower Hutt, accompanied by Greater Wellington (Greater Wellington Regional Council) Councillors and staff members, gathered on Matiu Island to meet for the first time. Led by Taranaki Whānau, with Ngāti Toa Rangatira at their side, a pōwhiri to welcome the committee was followed by a full day wānanga. This process would set the tone for what we wanted to achieve collectively for our communities, how we wanted to work together, and the partnership approach we wanted to demonstrate with Mana Whenua within our committee.

Collectively, we agreed to establish a way of working that would recognise a bicultural and culturally safe way of working that would authentically give effect to our job to restore Te Mana o te Wai ki Whanganui-a-Tara.

This, in turn, resulted in a uniquely bicultural operating framework grounded in te ao Māori principles and values that resonated perfectly with our work to protect the mana of our freshwater streams, rivers, lakes and wetlands.

The following outlines the committee's aspirations, values and operating principles that have guided how we have worked together over the past three years. Over time, members have departed, and new members arrived. However, our dedication to the purpose and way in which we have worked together remained the same. This Tiriti partnership approach was adopted by all members of Te Whaitua te Whanganui-a-Tara and represents a shared long-term vision for freshwater (Te Pūtake), sets the genealogy of the whaitua (Pepeha), and then identifies a set of protocols for how we intended to work with each other as a collective.

TE PŪTAKE/ THE ORIGIN

The mauri of Whaitua te Whanganui-a-Tara and the communities who live within it is nurtured, strengthened and able to flourish.

Kei te pūtake o te whaitua o te Whanganui-a-Tara tōna mauri mana motuhake... hei oranga mō te katoa.

TE WHAITUA MO TE WHANGANUI A TARA PEPEHA / TRADITIONAL STATEMENT DEFINING TE WHANGANUI-A-TARA REGION

No te kawa ora te mauri o te wai

From the ultimate life principles is the vitality of water.

Ka tupu te taurikura o ngā iwi, nga uri, ngā ruranga katoa

From this the nourishment of the iwi, their descendants and those who call this place home is provided.

Ko tātou katoa ngā tangata tiaki o ēnei wai!

For we all are the responsible guardians of these waters

Ngā wai o te Whaitua o Te Whanganui-a-Tara

The waters of the Te Whanganui-a-Tara Whaitua

E rere mai

Flow within the boundaries of

Turakirae ki Rimurapa

Turakirae to Rimurapa

Mai Rimurapa ki Remutaka

From Rimurapa to Remutaka

Mukamuka ki Te Ra Whiti

From Mukamuka to Te Ra Whiti

Pipinui ki te Ra Tō

To Pipinui across to te Ra Tō





NGĀ KAWA / THE PROTOCOLS

Te Kawa Ora/ The Natural Systems of Life

Ko te Te Whanganui a Tara Whaitua te mātāpuna o te ora:
The waters give life.

The waters of Whaitua Te Whanganui-a-Tara are the source of spiritual and physical sustenance for all life within its waters and lands.

Te Kawa Wai/ The Natural Systems of Water

E rere kau mai ngā wai iti, ngā wai roa, ngā wai nui, ngā wai puna, ngā wai tuku kiri mai i ngā pae maunga ki Tangaroa:
The waters flow from the mountains and hills to the sea.

Within Whaitua Te Whanganui-a-Tara is a living system of interconnected waterways, streams, rivers, springs and groundwater that flow from the hills to the sea.

Te Kawa Tiaki / The Protocols of Care

Ko tātou ēnei wai, ko tātou ngā tangata tiaki: We are these waters, we are responsible for their care.

The communities of the whaitua are united with, depend on and have responsibility for the waters of Whaitua Te Whanganui-a-Tara, the health of which is vital to all that live within it.

Te Kawa Honohono / The Protocols of Unity

Ngā manga iti, ngā manga nui e piripiri kau ana, ka tupu ngā awa, ka tupu te taurikura o ngā tangata katoa: The small and large streams that flow into one another form the numerous rivers, harbour and coast which provide nourishment for all.

The Te Whanganui-a-Tara Whaitua is woven from the land, the waters and the life within it. It transcends its component threads and cradles all who live within it.

Note that these statements are not a direct translation between te reo and English.

Partnership and shared leadership from the community up

The programme to restore and improve water quality and ecosystem health in Whaitua Te Whanganui-a-Tara is formed by two documents.

This Whaitua Te Whanganui-a-Tara Implementation Programme (WIP) has been developed and draws on the views of many people who call Te Whanganui-a-Tara home. It aims to ensure that all of our connections and values for freshwater and receiving coastal waters are sustained.

Te Mahere Wai is a Mana Whenua Whaitua Implementation Programme for Te Whanganui-a-Tara. It is a companion document that describes Mana Whenua values and establishes a Mana Whenua assessment framework, called Te Oranga Wai, for the measurement and management of freshwater, receiving coastal waters and mahinga kai in the whaitua. It represents a Te Tiriti o Waitangi partnership response to enhance the voices of local Mana Whenua – Taranaki Whānui and Ngāti Toa Rangatira.

It is important to acknowledge this unique approach that the committee has taken. The creation of a Mana Whenua enhancing and culturally safe space for Mana Whenua to discuss, debate and reconcile and develop a Mana Whenua voice signals a maturity for a Te Tiriti o Waitangi partnership model. It is a first of its kind for Te Upoko o te ika and our hope is that the process influences future policy development processes.

Both documents have been developed within a context of significant system change across New Zealand's public policy landscape, including the Resource Management Act 1991, local government reform and a new national direction to protect, improve and lift the mana of our freshwater rivers, streams, lakes and wetlands.

Both the WIP and Te Mahere Wai should be considered and actioned together because they share an inter-dependency of knowledge, information and priorities.

The committee collectively agree that the implementation of both reports will require collaboration between the Crown, Greater Wellington, territorial authorities (local councils) and Mana Whenua. This will mean the sharing of power and resources, enabling stronger Te Tiriti o Waitangi partnerships. Importantly, we are strongly of the view that Greater Wellington will need to act quickly to build its organisational capability and confidence to fulfil its Tiriti obligations, responsibilities and commitments, starting with authentic relationships with iwi and Māori.

Foreword from co-chairs

The waters of Te Whanganui-a-Tara are central to our lives. They define the landscapes we cherish, provide life and wellbeing to all living things, including us who live in Wellington, Lower Hutt and Upper Hutt. We want to see their mauri (life force) restored - as healthy waterways and connected communities.

We acknowledge those who have worked for decades as kaitiaki in our urban and rural environments, working for healthy wai (water) at many levels. Those at the grass roots who have planted streambanks, removed rubbish from our awa (rivers) and our foreshore, those who have led change within their businesses and communities, and those who have campaigned for stronger regulations and policy change. Their work set the scene for the National Policy Statement for Freshwater Management which led to the Greater Wellington's whaitua process being based on community and Mana Whenua involvement. Our work is also informed by, and builds on, the work of the Ruamāhanga and Te Awarua-o-Porirua Whaitua Implementation Programmes as well as Ngāti Toa Rangatira's corresponding Statement.

Whaitua Te Whanganui-a-Tara Committee represents a partnership between Mana Whenua, the wider community, our territorial authorities and Greater Wellington. A partnership approach will also be fundamental for implementing this Programme. We especially endorse the opportunity for councils to better partner with Mana Whenua – in particular to support a more holistic approach to improving waterway health and community wellbeing.



Louise Askin



Sam Kahui

This WIP is a call to action. It calls for a paradigm shift in the way we view water (wai), our relationship with water, how we value water and its life maintaining properties.

Our three waters networks are crumbling due to under-investment, population growth is forecast to put more pressure on water use and supply, and climate change will exacerbate the challenges we face, with more extreme weather events predicted to occur much more frequently. Many of our waterways are in poor condition, some hidden, piped underground, out of sight out of mind. A continuing decline in water quality and culture of consumption sets up our children and grandchildren for a bleak and insecure future.

Sites of cultural significance including traditional mahinga kai / food gathering areas have been significantly degraded, having disproportionate impacts on different communities including Mana Whenua and tangata whenua.

Our long-term vision is for all waterways in Wellington, Lower Hutt and Upper Hutt to be restored to a state of Wai Ora (healthy water) within 100 years. We envisage many water bodies will achieve this state much earlier. This Programme sets out the first steps on that journey. There will be some quick wins but there are also some significant challenges to even 'hold the line' of current water quality before improvements can be seen.

Aotearoa is experiencing a shift in how we view water. Government requires councils to stop the decline in water quality and to drive improvements within a generation. Mana Whenua recognise the loss of health and mauri of local waterways that has occurred over generations. New government policy introduced in September 2020 recognises the life maintaining properties of water for all life and ecosystems, including human beings. The principle of Te Mana o te Wai puts the health of a waterbody first, human health needs second, followed by recreational, economic and other needs. Change is now necessary, for the good of our children, grandchildren and following generations.

The WIP is a companion document to Te Mahere Wai – a unique, indigenous body of work that more fully articulates the aspirations of Taranaki Whānui and Ngāti Toa Rangatira. Te Mahere Wai is a landmark document and the two interdependent documents should be considered together.

This Programme sets out recommendations to move us toward our vision of healthy water / Wai Ora. Our recommendations are ambitious and will require changes to current ways of operating and current levels of investment. However, they also seek to balance pace with practicality and equity. We acknowledge the range of barriers that exist to implementation and the lack of information currently available on the health of our waterways. We also acknowledge the power of individuals, whānau, and collaborative community action to help move us toward those outcomes.

We now call on Greater Wellington, Wellington City Council, Hutt City Council, Upper Hutt City Council, and all organisations with a statutory role as kaitiaki of freshwater in our whaitua, to drive action under this Programme.

This document presents a clear voice for water in this whaitua and a unique opportunity to make change. Alongside Te Mahere Wai, it is a founding document for future work and we expect councils to report progress against it over coming years.

We thank and acknowledge those in our communities who had their say in this process – providing feedback online, completing surveys, attending hui (meeting) on this kaupapa (important matter) or sharing your views with a committee member or council officer. Your direction has guided us in the development of our work.

The Whaitua Committee was supported by a project team of dedicated, passionate people from Greater Wellington, Wellington, Hutt and Upper Hutt City Councils, Wellington Water, Mātauranga Māori providers and Mana Whenua. Thank you to each and every one of you, we could not have delivered this taonga (treasure) without your hard work.

It is a privilege and a responsibility to serve on a committee tasked with the opportunity to drive change for our communities, the environment and future generations. Our fellow committee members are a diverse group of community representatives, Mana Whenua representatives, regional and city councillors. This is ‘heart’ work and you brought your whole selves to the mahi, listening to your communities, leaning in and collaborating for the good of all. Your passion, dedication, tenacity and understanding will be rewarded as the Programme is implemented and the changes start to manifest. We thank you now on behalf of generations to come for the benefits they will derive because of the work we have done up front.

This Programme is just the beginning. It is a first step in charting the course toward healthy waters across Wellington, Lower Hutt and Upper Hutt. We look forward to the journey ahead.

**Sam Kahui and Louise Askin, Co-chairs,
Whaitua Te Whanganui-a-Tara Committee**



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Executive summary

The Whaitua Te Whanganui-a-Tara Committee is made up of members of the Wellington and Hutt Valley communities, and representatives of Mana Whenua and local councils. It was tasked with advising the Greater Wellington (Greater Wellington) on how to give effect to the National Policy Statement for Freshwater Management 2020 (NPS-FM), which requires actions to be taken to maintain or improve the health of water and give effect to Te Mana o te Wai. The advice of the committee sits alongside (and is informed by) Te Mahere Wai, which has been prepared by and for Mana Whenua to express their aspirations and needs in the context of the NPS-FM.

Te Mana o Te Wai requires the integrated management of freshwater in line with the principle of Ki Uta ki Tai (from the mountains to the sea). This goes beyond the alignment of storm, waste and drinking-water management and must include flood management practices that shape our waterways, commercial allocation, changing land use, water sensitive urban design (WSUD), the active role of Mana Whenua, and many other critical elements.

Eighteen spatial areas have been identified within Whaitua Te Whanganui-a-Tara for integrated management to recognise the specific mana and individual needs of different water bodies. We hope that local communities will develop a sense of ownership and connection for these areas, as well as for each awa within them, as they learn about their names, values, Mana Whenua and community history, and the challenges faced.

All awa in all spatial areas are set a long-term vision of wai ora for all water-quality indicators and have a pathway of short-to-medium term steps towards achieving that vision. Steps beyond that have been left for the next generation to determine, so they can reflect on their own aspirations and contexts and all we learn through the implementation of this WIP.

A paradigm shift is needed to achieve these steps towards wai ora, honour Te Mana o Te Wai and prioritise the health of waterbodies as required by the NPS-FM. Our recommendations are intended to address the past, look to the future, and reset our multi-generational relationship with water to one of care and respect. As part of this, we have deliberately framed our recommendations as ‘managing people’s impacts on water’ instead of the dominant ‘freshwater management’ approach.

In summary, the committee’s recommendations, which sit alongside those in Te Mahere Wai, require a range of actions that will:

- » Strengthen community connections with water
- » Avoid toxic algal blooms
- » Address sources of pollution and reduce future risks
- » Balance the needs of nature and people in the places we live
- » Ensure we are responsible and respectful in our use of water
- » Develop the workforce needed to realise Te Mana o te Wai
- » Make clear where we expect central government to act
- » Improve information available for better decision making in the future.

These recommendations have been informed by extensive work over the best part of three years. This has included community input (through meetings, public events and online channels), scientific and expert input (through technical reports, presentations and direct advice), Mana Whenua input (through meetings, the direct involvement of Te Kāhui Taiao members, and Te Mahere Wai), and extensive technical support and expertise from officials in all councils in the whaitua.

Te Whaitua te Whanganui-a-Tara Implementation Programme

Upholding Te Mana o te Wai is a responsibility of councils (mana kaunihera), Mana Whenua (mana whakahaere) and all in the community (mana tāngata). All of these have a role to play in the successful implementation of these recommendations. However, the most immediate responsibility sits with Greater Wellington to make the amendments to the Regional Policy Statement and the Proposed Natural Resources Plan that are necessary to give our recommendations regulatory weight. Greater Wellington's investment decisions and operating model are also important to creating the enabling conditions for mana whakahaere and mana tāngata to be effective in their respective roles.

Ongoing transparency and accountability to Mana Whenua and the community on the implementation of recommendations and progress towards wai ora and Te Mana o Te Wai is essential. The catchment journeys for each of the 18 spatial areas provide an incomplete baseline, so Mana Whenua have begun the development of a kaupapa-based measurement framework. In time, this work will inform a holistic Te Oranga Wai framework that is expected to be the primary way communities understand the state of water and progress towards 'wai ora everywhere'.



Committee purpose and decision-making context

The role of our committee is to advise Greater Wellington on how to give effect to the NPS-FM in Whaitua Te Whanganui-a-Tara. This is one of five whaitua in the Wellington Region. Whaitua is a te reo Māori word for 'place', and this whaitua is the geographic area defined by the water catchments across Wellington, Lower Hutt and Upper Hutt. We were charged with developing recommendations that express, and create a pathway towards, Te Mana o te Wai and the aspirations held by the communities and Mana Whenua. The scope of our work includes all freshwater bodies and the impacts of freshwater on the harbour and coast. The process is explained in more detail in Appendix 1.

Our committee of 16 comprises community members and representatives of councils and Mana Whenua. We committed to a bicultural process from the start, establishing co-chairs and sustaining a focus on learning how to bring this commitment to life throughout the process. Together, and through talking with communities, we bring different voices and worldviews into our work. We have also been supported by a team of experts, including scientists, planners, territorial authority advisers, three waters advisers, facilitators, Mana Whenua and te ao Māori advisers. Appendix 1 contains more information about our membership.

The implementation of the NPS-FM was the catalyst for our work and provides important clarity and tools. We agreed early on, however, that it should not overly constrain our approach. We believed we could provide advice that was consistent with the NPS-FM and better reflects the needs and aspirations of Mana Whenua and the communities of Whaitua Te Whanganui-a-Tara. The NPS-FM has been updated during our work, and we anticipate it will be again in the future as learnings from local efforts (such as ours) and from national level work are considered.

While our recommendations have been developed at the request of Greater Wellington, they are also relevant to Taumata Arowai, the Ministry for the Environment and all central agencies that have a role in how society cares for water. In some cases, change at the national level is needed to realise Te Mana o te Wai, and we acknowledge the reforms already underway for resource management, local government and three waters management. As reforms progress, we expect national decision makers and any new agencies to recognise this WIP and Te Mahere Wai as the statements of what needs to be delivered for Whaitua te Whanganui-a-Tara.

The ultimate test is how our recommendations are put into action. We are concerned that progress in implementing the Ruamāhanga and Te Awarua o Porirua WIPs has been slow. There is little public awareness of these documents or transparency about actions or outcomes. Maintaining political commitment requires mechanisms for citizens and Mana Whenua to hold councils to account for implementing the WIPs.

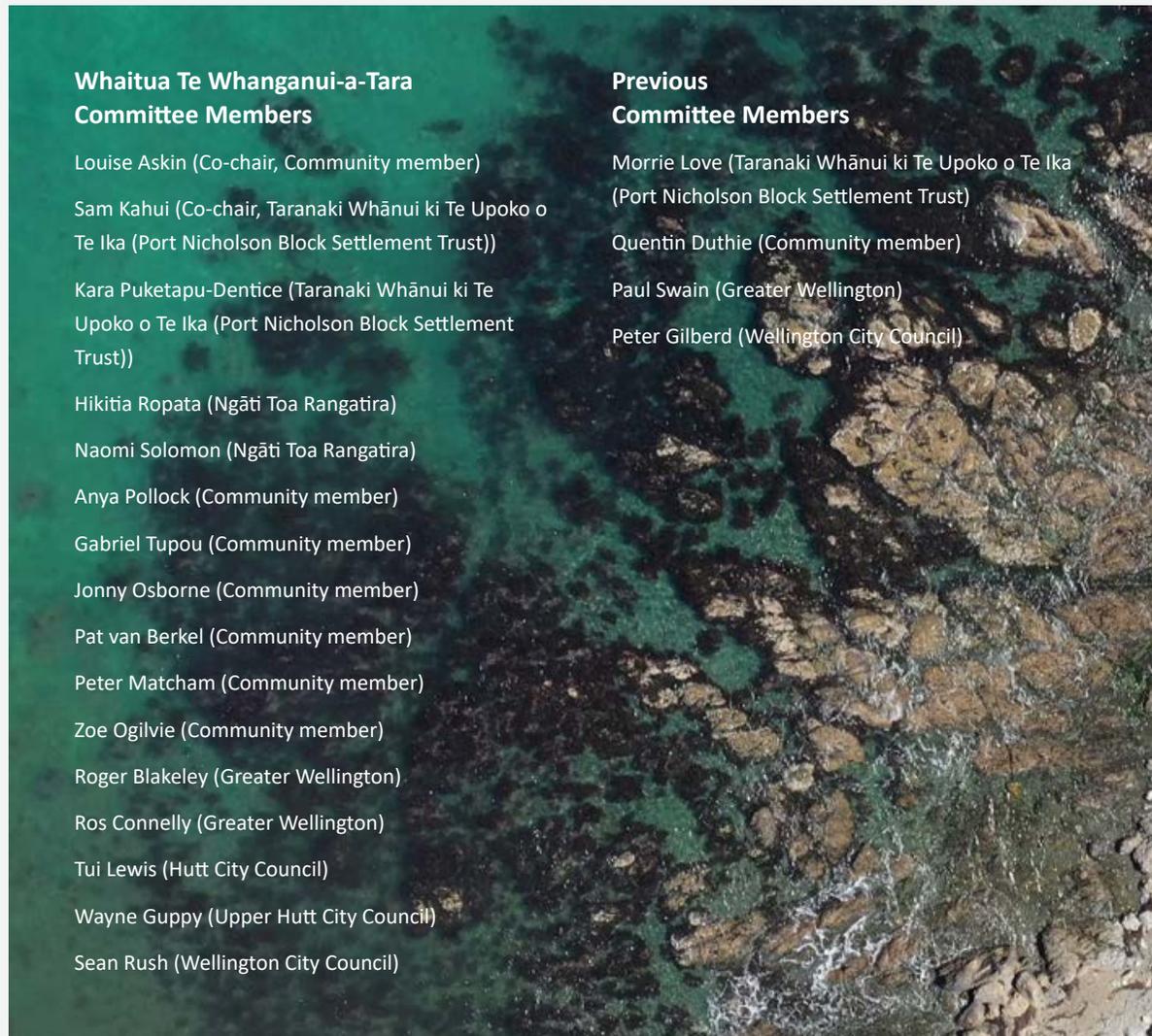
In Te Whanganui-a-Tara, territorial authorities (local councils) fund Wellington Water to manage the three waters network, primarily through the collection of rates and developer contributions. There has been under-investment in three waters infrastructure for decades. While councils are responsible for the failure to properly plan and fund the network, funding constraints have also had an impact. Implementing all our recommendations in the timeframes specified will require new approaches to funding for three waters.

Of course, public costs ultimately fall on ratepayers and taxpayers, and there will also be costs beyond these to some individuals as taking greater care of private impacts on water becomes the new norm.

Te Whaitua te Whanganui-a-Tara Implementation Programme

This will be hard for some people, so support through the transition will be needed. It is particularly important that the approach to implementing our recommendations avoids increasing inequities in people’s wellbeing. While some changes will initially feel like extra costs, they really reflect a bill we haven’t been paying in the past, but which is necessary now to sustain healthy waterways across generations.

We have tried to set an ambitious, but achievable, pathway based on what we currently know. Our recommendations are part of a 100-year journey and include actions to be implemented in the short term (10 years), in a generation (20-30 years) and in the long term (over 30 years) for more intractable or costly problems. We recommend that Mana Whenua and the community review progress every 10 years and are enabled when necessary to advise councils on adjustments to improve the pace of progress.



Whaitua Te Whanganui-a-Tara Committee Members

- Louise Askin (Co-chair, Community member)
- Sam Kahui (Co-chair, Taranaki Whānui ki Te Upoko o Te Ika (Port Nicholson Block Settlement Trust))
- Kara Puketapu-Dentice (Taranaki Whānui ki Te Upoko o Te Ika (Port Nicholson Block Settlement Trust))
- Hikitia Ropata (Ngāti Toa Rangatira)
- Naomi Solomon (Ngāti Toa Rangatira)
- Anya Pollock (Community member)
- Gabriel Tupou (Community member)
- Jonny Osborne (Community member)
- Pat van Berkel (Community member)
- Peter Matcham (Community member)
- Zoe Ogilvie (Community member)
- Roger Blakeley (Greater Wellington)
- Ros Connelly (Greater Wellington)
- Tui Lewis (Hutt City Council)
- Wayne Guppy (Upper Hutt City Council)
- Sean Rush (Wellington City Council)

Previous Committee Members

- Morrie Love (Taranaki Whānui ki Te Upoko o Te Ika (Port Nicholson Block Settlement Trust))
- Quentin Duthie (Community member)
- Paul Swain (Greater Wellington)
- Peter Gilberd (Wellington City Council)

Te Mana o te Wai – putting water first



Ka ora te wai – If the water is cared for

Ka ora te whenua – The land will be nourished

Ka ora te whenua – If the land is nourished

Ka ora te tangata – The people will prosper.

Te Mana o te Wai is the fundamental concept underpinning the National Policy Statement for Freshwater Management 2020 (NPS-FM) and is the guiding kaupapa reflected in the kawa-based vision at the start of this document and described by Mana Whenua in Te Mahere Wai.

As part of this, the NPS-FM directs decision making to prioritise:

- » **First**, the health and wellbeing of water bodies and freshwater ecosystems.
- » **Second**, the health needs of people (such as drinking water).
- » **Third**, the ability of people and communities to provide for their social, economic and cultural wellbeing, now and in the future.

Te Mana o te Wai presents us with an opportunity to prioritise the health of freshwater for the first time. It demands different thinking about our relationship with water. We cannot take water for granted and treat it as just another resource to be managed, used and degraded. We cannot consider the health and wellbeing of water bodies and freshwater ecosystems as an afterthought whenever we want to do something. Te Mana o te Wai requires that the importance of water in our lives is asserted and demonstrated through our actions.

Upholding Te Mana o te Wai is the shared responsibility of councils (mana kaunihera), Mana Whenua (mana whakahaere) and all in the community (mana tāngata). Our recommendations expect and support each of us to play our part. In doing so, we enhance our own mana and that of the water.

Council leadership – mana kaunihera

The level of power held by councils within our regulatory systems impacting on water makes their leadership and action critical. Greater Wellington has responsibility for meeting the requirements of the NPS-FM, including setting regulatory limits and targets for water that will drive the action needed to achieve Mana Whenua and community outcomes for water.

All four councils in the whaitua are expected to lead community transformation in the way water is valued and treated, as set out in the recommendations in this document. Some of these recommendations are also relevant in Porirua, which relies on this whaitua for its water supply. Regulatory frameworks need to be implemented and, importantly, enforced to ensure that all activities are managed for their effects on water. Three waters infrastructure must be maintained to a high standard so that Te Mana o Te Wai is not compromised. Councils are expected to show leadership on their own land and in their operations.

Iwi leadership – mana whakahaere

The leadership of Taranaki Whānui and Ngāti Toa Rangatira is critical to achieving the transformative shift required to achieve Te Mana o Te Wai in Whaitua Te Whanganui-a-Tara. Many of the core constructs of Te Mana o Te Wai (ki uta ki tai, mauri, mahinga kai) rely on Mana Whenua interpretation and leadership, and require equitable resources and support that enables their participation to be embedded in whaitua management.

Tangata Tiriti members of this committee acknowledge that current barriers to Mana Whakahaere reflect failures over many generations to bring Te Tiriti o Waitangi to life in our regulatory and governance systems. We have worked to help break down rather than perpetuate these barriers through our work and our recommendations, but more is needed, as expressed in Te Mahere Wai.

Community leadership – mana tāngata

The waters of Whaitua Te Whanganui-a-Tara are a core part of our landscape and identity and we all have a responsibility for their care. Decisions that affect water quality and quantity are made by individuals, families and businesses every day. Many people are already working individually and in groups to do better for water, and every action makes a difference. But we need to bring care for water to the forefront of our daily lives and support more people to live and work in ways that value and restore the environment

Better connecting communities with, and empowering them to care for, water depends on leadership, support and long-term investment in education and action, as set out in our recommendations. The implementation of these recommendations is intended to increase community participation and leadership, grow people's ability to take actions that care for water, and support collaboration across catchments and the whole whaitua so that water, communities and future generations can flourish.

Understanding our relationship with water – freshwater values

Our kawa direct us to the importance of spatial, social and intergenerational equity, which means that all waterbodies (from small streams to larger rivers, aquifers, wetlands, lakes, estuaries and coastal waters) need to be thriving in all awa. Upholding Te Mana o te Wai means striving for wai ora everywhere. We may need to prioritise in the short term to make progress achievable, but it is not possible to trade off the mana of one water body for another in the long term.

What this means for freshwater values is set out in *Appendix 2: Our community's freshwater values in Waitua Te Whanganui-a-Tara* and in Te Mahere Wai.

Values which apply to some extent to all waterbodies in this waitua include:

- » Ecosystem health
- » Mahinga kai
- » Threatened species
- » Natural form and character
- » Māori customary use and wai tapu
- » Drinking-water supply
- » Human contact (primary)
- » Community connection
- » Animal drinking water
- » Commercial, industrial use and the production of food and beverages
- » Transport and Tauranga waka
- » Fishing.

In the section we show catchment by catchment how (in many cases) the state of water quality is currently far from our aspirations for supporting our values. There

are signs of hope for what can be achieved when we put water first, but water quality is still getting worse in many places, and there are challenges still to come through climate change and urban growth. The scale of the task means we need to start rapidly increasing the pace of action to halt the causes of decline and start noticing improvement.

Within the chapter of each catchment area are a set of tables that set out clear pathways of staged targets for improvement in each catchment's journey from current state to wai ora state for each of the water-quality attributes in the NPS-FM. The timeframes set for each step of the pathway are intended to increase the pace of action across the waitua, while recognising what can realistically be achieved by when. In some places, achieving wai ora will be a 100-year journey and actions beyond our recommendations will need to be determined by future generations.

The different journeys reflect the reality of different starting points and pressures, natural cycles and the need for prioritisation. All actions can't be implemented everywhere all at the same time, especially when a significant investment of money and the time of skilled people is required. Where we have prioritised spatially, this reflects:

- » The trends in water decline
- » The risks of inaction to public health, including drinking-water sources
- » The significant values for Mana Whenua
- » Impact levels
- » Inequities in the benefits people receive from their local waterways.

Te Whaitua te Whanganui-a-Tara Implementation Programme

Attachment 3 to Report 24.89



The health of our waterways is far from what we aspire it to be, and it's getting worse in many places. The scale of the task means we need to rapidly increase the pace of action to halt the decline and work toward a goal of wai ora.

Care for water needs to be at the forefront of our daily lives. We need to support more people to live and work in ways that value and restore the environment.



Te Whaitua te Whanganui-a-Tara Implementation Programme

Attachment 3 to Report 24.89



Strengthen community connections with water



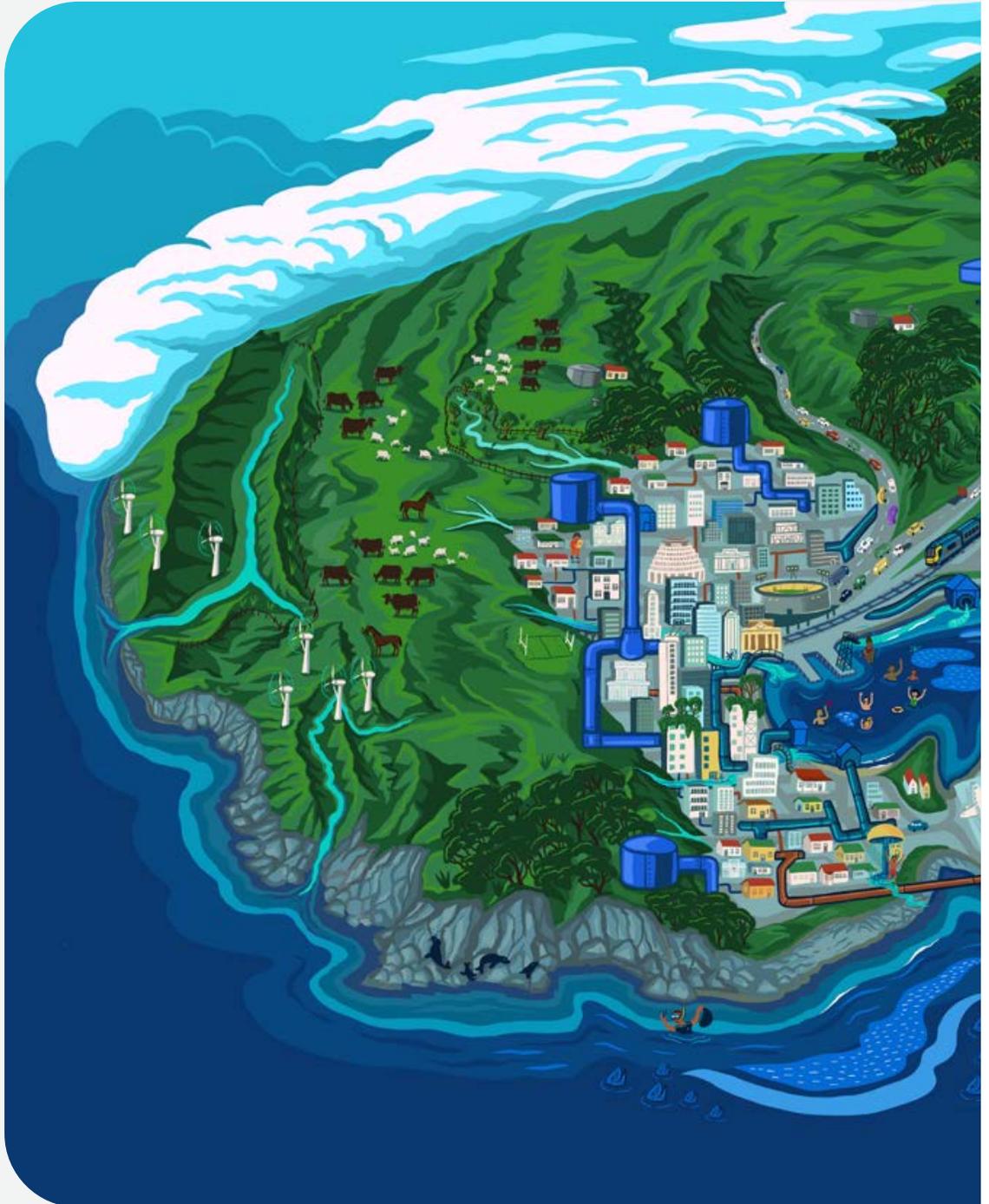
Avoid toxic algal blooms



Address sources of pollution and reduce future risks



Balance the needs of nature and people in the places we live



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Ensure we are responsible and respectful in our use of water



Develop the workforce needed to realise Te Mana o Te Wai



Make clear where we expect central government to act



Improve information for better decision making in the future



Actions to enhance Te Mana o te Wai – our recommendations

The evidence we have received tells us that water will continue to degrade without a step change in action. This does not reflect Mana Whenua and community values or meet NPS-FM requirements, but is a sign that our systems and actions are not yet showing enough care for water. It is a sign that decision making isn't putting the water first as required by Te Mana o te Wai.

The systems and norms that have led to the decline of water are well engrained in society and decision making. We believe that a shift in mindset is key to turning things around – from managing water as a resource, to managing the impacts of people on water. From waiting for proof that something is a problem, to taking care to avoid anything that could become a problem. After all, not having a problem in the first place is always cheaper than fixing something that is broken. It better respects the water as well as future generations to come.

Turning things around is a complex problem to solve because of the wide range of causes and responsibilities. This is an 'everybody problem' and all of us have a role to play in solving it. Our recommendations complement those in Te Mahere Wai and are focused on actions that:

- » Strengthen community connections with water
- » Avoid toxic algal blooms
- » Address sources of pollution and reduce future risks
- » Balance the needs of nature and people in the places we live

- » Ensure we are responsible and respectful in our use of water
- » Develop the workforce needed to realise Te Mana o Te Wai
- » Make clear where we expect central government to act
- » Improve information available for better decision making in the future.

The impacts and solutions will look different in different places for different people, but each of us has a duty of care to minimise our impacts and this is reflected in our recommendations. By acting together, we'll see improvements in community health, social connections and the health of our streams, harbour and coastline, and secure our water's future for generations to come.

The scale of improvement needed, even just to achieve the minimums set in the NPS-FM, means that there will be significant funding and workforce challenges to implement all recommendations everywhere. This has been recognised in the timeframes we have set for achieving different actions, but it is also why our recommendations cover matters that are about supporting successful implementation, rather than just focusing on direct action to improve water.

As our recommendations are implemented, further decisions will be needed about where planning and investment needs to be directed first.

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A vital component of the regulatory response is incorporating the relevant aspects of this document, including the future attribute states, into the Regional Policy Statement and Proposed Natural Resources Plan to support our recommended trajectory.

Transparency about what is happening and ongoing opportunities for involvement by the community are

key to successful implementation. To achieve this, the recommendations below sit alongside those in Te Mahere Wai about Mana Whenua participation and giving effect to mana whakahaere responsibilities.

Our first set of four recommendations address the need for both a regulatory response to this WIP and Te Mahere Wai and for ongoing community participation in implementation.

RECOMMENDATIONS

- 1** Greater Wellington adds all ‘first steps’ attribute states (short term and generational) identified in the catchment chapters of the WIP into the PRNP as part of the 2022 and 2024 plan changes.

- 2** Greater Wellington works with Mana Whenua to complete Te Oranga Wai attributes for freshwater and coastal receiving environments for inclusion in the PNRP as part of the 2022 and 2024 plan changes.

- 3** Greater Wellington proactively communicates the WIP and Te Mahere Wai with stakeholders, community groups and partners through a variety of channels to ensure there is adequate awareness in our whaitua to support ongoing dialogue and accountability for implementation.

- 4** Greater Wellington establishes a community-led reference group tasked with monitoring progress on the implementation of WIP for Whaitua Te Whanganui-a-Tara and ensures that the council is reporting on progress to the wider community in meaningful ways.





Strengthen community connections with water

Water is a defining feature of our whaitua, encompassing our harbour, coast, rivers and lakes, which are interconnected with aquifers under the ground. Water is part of our everyday life in many ways – from turning on the tap each morning to jumping in a river on a hot day, and everything in-between. However, with the increasing urbanisation of our whaitua in the past decades, we've also reduced water's presence in our landscape (such as piping small streams or covering them with landfills) and made it easy to forget how much we depend and impact on it.

If we're to restore our waterways to good health, we all need to play our part. Each journey begins by acknowledging the problem, which develops to understanding, builds with commitment, and results in communities that are willing and enabled to take action to change our future. At the heart of it all is relationships – with water and with each other. We are all connected, and only when our waterways are clean and healthy will the community be the same. Understanding this is an important part of growing the next generation of children to become kaitiaki and stewards, helping communities act in ways that care for water and develop skills to respond and adapt to change.

Many community groups are already championing and volunteering time on behalf of rivers, streams and environments in our whaitua, but they are often disconnected from each other and what is happening elsewhere. Practical and specialist support is needed to bring people together, increase their knowledge of the state of their water, and help identify the biggest opportunities to make a difference. Community groups are also well placed to lead wider community education as they know what matters locally.

Council monitoring can only go so far. Activating 'citizen science' is therefore key to providing accurate information to councils to target local changes, developing ways to share the story of streams (whether piped or above ground), and leading conversations in local areas on what people want to change and how to do it. It also benefits landowners, who can apply local science and local knowledge in their role as kaitiaki of their land and water.

To strengthen community connections with water our recommended actions focus on:

- » **Connecting communities with waterways and piped streams**, so that people get to know their local streams, including those now under the ground.
- » **Bringing water into teaching and learning**, so that our tamariki and mokopuna grow their understanding of local waterways and what it means to care for water.
- » **Supporting catchment-based planning and local action**, so that community groups have information, support and connections to lead local solutions for local problems and strengthen relationships with water in their community.

RECOMMENDATIONS

CONNECTING COMMUNITIES WITH WATERWAYS AND PIPED STREAMS

- 5** Greater Wellington, Mana Whenua and territorial authorities work with communities located around piped and above-ground streams to share those streams' stories through visual images, signs, sculptures, temporary artworks or other interactive ways that the communities design.
-
- 6** Greater Wellington works with Mana Whenua to name unnamed streams, including those currently piped underground, starting with large streams and then smaller streams within the whaitua (by 2026).
-
- 7** Greater Wellington and territorial authorities add information to property Land Information Memorandum (LIM) reports about wetlands and streams that a property drains to and its pathway to the sea; the source of the property's water supply; and the treatment of its wastewater.

BRINGING WATER INTO TEACHING AND LEARNING

- 8** Mana Whenua, community groups and Greater Wellington take advantage of opportunities to get involved in the refresh of the National Curriculum, which guides teaching and learning in schools, with a focus on how well it identifies and grows capabilities that will help realise aspirations for communities that care for wai and te taiao.
-
- 9** Mana Whenua, community groups and Greater Wellington work with early learning centres, schools and kura to develop local resources and supports that help teachers and kaiako to provide teaching and learning that connect tamariki with their local waterways, including piped streams, and grow their understanding of the interconnectedness of the wellbeing of our communities and Whaitua Te Whanganui-a-Tara.

SUPPORTING CATCHMENT-BASED PLANNING AND LOCAL ACTION

- 10** Greater Wellington, Mana Whenua and territorial authorities establish services to support new and existing catchment or community groups (by 2025), including for:
- » Providing access to easy-to-use data from all relevant sources, including citizen science, especially data that is relevant to each group's locations and needs
 - » Inspiring and supporting the formation of new groups
 - » Funding ongoing organisational and technical support, including lab analysis
 - » Supporting citizen-led science and monitoring with appropriate training and tools
 - » Mātauranga monitoring
 - » Providing specialist support (such as engineering and legal support, help with navigating local government politics, and communication guidance)
 - » Supporting catchment coordinators for catchment-scale projects and help with project management, people facilitation and fundraising (it includes tapping into the wider volunteer base)
 - » Offering guidance on where to put the best efforts and take actions, consistent with the kawa and Te Mana o te Wai.

RECOMMENDATIONS

SUPPORTING CATCHMENT-BASED PLANNING AND LOCAL ACTION

- 11** Greater Wellington creates cross-whaitua structures and services that support a coherent and connected approach to local action knowledge-sharing. These should include:
- » Spatial and catchment-level planning that helps coordinate efforts aimed at meeting Te Mana o te Wai and community goals, and makes roles and responsibilities clear
 - » Community-to-community knowledge exchange and connecting groups
 - » The provision of transparent and clear mechanisms for accessing and allocating funding and services, including expert knowledge
 - » The provision of frameworks and supports that give community groups confidence that they are working in the interests of Mana Whenua
 - » A strategic approach to the use of council support services (such as Mountains to Sea Wellington)
 - » Providing a single contact point for questions and advice for all the agencies involved.
-
- 12** Greater Wellington and Mana Whenua develop resources (by 2024) that community groups can use and adapt for their own communication with local communities, to help build understanding, connections and involvement that complement messages and campaigns by councils and water agencies.
- Specific themes to include are:
- » Where drinking water comes from, and the relationships between activities in the Hutt Valley and risks to the Waiwhetū aquifer
 - » Awa as tipuna, living entities of distinctive mana and whakapapa
 - » Our responsibility to respect the awa and their mana, and act on this in our behaviour with water
 - » The state of our waterways, including for different places
 - » Action being taken, including for different places
 - » Actions people can take, including those specific to their local areas.
-
- 13** Greater Wellington, Mana Whenua and territorial authorities partner with communities in developing catchment plans, co-designing their journeys and sharing the delivery process and roles required to achieve Te Mana o te Wai and local outcomes. This will help groups to know where to put their best efforts and provide clear resourcing strategies to follow through with their plans.
-
- 14** Greater Wellington works with Mana Whenua and catchment groups to make data easily available and accessible in a user-friendly way, including through the use of aggregated data.
-
- 15** Greater Wellington provides more specific, local information on water quality to communities – through making existing data more readily available and collecting new data, including via citizen science programmes, Greater Wellington monitoring programmes and the integration of the two (where appropriate).
-

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Avoid toxic algal blooms

The increased size and frequency of toxic algal blooms in Te Awa Kairangi/Hutt River and our other major rivers is a direct risk to dogs and humans. These organisms are a major public concern and make those who visit the rivers wary of going to, using and enjoying them, often at the time of year when they're at their best.

Our vision for Te Awa Kairangi/Hutt River is that toxic algal blooms will be rare and the river will be in balance with the land and its communities, including people. At all points in its journey from the mountains to the sea we'll be comfortable engaging with the river to nourish ourselves physically and spiritually.

The ecological and physical systems that influence the growth of toxic algal blooms are complex. Many of our recommendations in this WIP are expected to help reduce their frequency and size by reducing nutrient availability. But we just don't yet understand enough about how to best avoid creating the conditions in which toxic algal blooms can thrive and more research is needed (see Recommendation 111).

Communities, Mana Whenua and Greater Wellington need to continue working closely together on how best to enable people to continue connecting with the awa they love. This means avoiding interaction with toxic algal blooms when they occur in the short term, while working towards a future where they are no longer a problem.

RECOMMENDATIONS

- 16** Greater Wellington, with Mana Whenua and communities, develops a toxic algal bloom action plan that includes:
 - » Management actions
 - » A monitoring plan specific to toxic algae
 - » Research priorities
 - » Climate change adaptation
 - » A communications approach that supports community and Mana Whenua visions and outcomes.



Address sources of pollution and reduce future risks

Water is life. It nourishes us and all of nature around us. It is essential to our modern way of life, which is why humanity's impacts on water must be looked at closely. Too often our precious water is inadvertently contaminated by human activities, even when we rely on the very same water to sustain us. Living a good life doesn't need to threaten the mauri of water, but it does require a significant step up in how we manage ourselves and our impacts. We need to address current sources of pollution and find ways to minimise the chance of pollution occurring in the future. Our recommendations are focused on the most important issues affecting the health of water in this whaitua:

- » Appropriate waste and stormwater management
- » Appropriate rural land use practices
- » Council leadership to ensure best practices that do right by water
- » Avoiding and managing risks from the use of contaminants
- » Identifying and addressing risks to water from historic contaminated land
- » Paying extra respect to water sources.



Appropriate waste and stormwater management

Water is used to transport our waste away in ways that protect public health. Protecting the mauri of water requires water used for this purpose to re-join the waters of Te Awa Kairangi/Hutt River or Te Whanganui-a-Tara and the coast in the same state that it entered the system. Systems for transporting wastewater should only deposit the wai mate (and the human waste it contains) at its destination – a septic system in rural areas or a sewage treatment plant in urban areas. However, we've found that there are several problems with both urban and rural wastewater systems in our whaitua.

Wellington's water crisis is well known and has attracted considerable media attention. A great deal of work is needed to bring our infrastructure up to scratch, while at the same time the population in our whaitua is only going to grow – adding more stress to an already creaking three waters system and raising the risk of pipes bursting and contaminating the environment.

This situation has arisen because the pipes in the urban wastewater system haven't been maintained properly. They're now failing regularly, allowing wai mate to enter the soil and our natural waterways. A pipeline grading assessment (where grade 1 pipes are in very good condition and grade 5 in very poor condition) shows that 32 per cent of the network of wastewater pipes in our whaitua – around 550km – is in grade 4 or 5 and in urgent need of repair or replacement.

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The same thing may be happening to pipes in private ownership, which we understand comprise more than half of the wastewater network. While we have very little information on the condition of those pipes, many are likely to be in their original condition and (based on our knowledge of the public network) leaking wastewater into the environment.

There are situations where new public pipelines are being installed and connected to existing private pipelines, of which some are more than 60 years old. This highlights the importance of ensuring that the three waters infrastructure on private land is up to standard, otherwise we'll only solve half the problem. The entire network, both public and private, needs to be improved.

Stormwater has also been allowed to enter the wastewater system, to such an extent that the wastewater pipes can't cope when it rains. To prevent this from causing wastewater to flood back into houses, engineers have built overflows that deposit the excess water (including human waste) into our streams and rivers. We consider this unacceptable.

In areas that do not have access to municipal wastewater systems, landowners often use septic systems to treat waste from their property. Many of these systems are old (some date from the 1940s or even earlier) and have not been adequately maintained. As a result, these septic systems often leach untreated waste into the soil, from which the contaminants can enter water bodies. This situation is not acceptable and should not continue. We believe that landowners with septic systems need to have access to information about the proper maintenance of these systems, and that Greater Wellington should investigate just how big the impacts of leaching systems are.

Because overflows or leaching of untreated wastewater is a major environmental and cultural issue, our recommendations set a tight timeframe for repairing and replacing leaky wastewater pipes in both public and private ownership.

Our recommendations include:

- » **Preparing plans within stormwater and wastewater resource consents**, so that there is a clear investment pathway for addressing issues in the municipal network.
- » **Repair and renewal of the public wastewater pipe network**, so that people can be confident that pipes are fit for purpose and will keep wastewater out of local waterways.
- » **Stopping wastewater overflows**, so that our systems reflect the complete unacceptability of sewerage polluting our waterways.
- » **Identifying and fixing degraded pipes and cross-connections in private parts of the network**, so that urban property owners are supported to take responsibility for problems associated with their own pipes.
- » **Creating safety nets to avoid new problems arising in the future**, so that we can be confident that private pipes are being maintained as well as the public ones.
- » **Reducing sludge to landfill**, so that dealing with solids left over from wastewater treatment doesn't come at the expense of the natural environment.
- » **Ensuring rural wastewater systems are well maintained**, so that rural property owners are supported to take responsibility for problems associated with their septic systems.

RECOMMENDATIONS

PREPARING PLANS WITHIN STORMWATER AND WASTEWATER RESOURCE CONSENTS

- 17** Greater Wellington amends regulatory documents to require the relevant three waters agency to develop a stormwater strategy (by 2023), within the global stormwater network resource consent, to contribute to achieving the relevant first steps in each of the catchment tables under the heading 'Journey from current state to wai ora'.
- 18** Greater Wellington amends regulatory documents to require the relevant three waters agency to develop a strategy/plan (by 2023), within the wastewater network resource consents, to contribute to achieving the relevant first steps in each of the catchment tables under the heading 'Journey from current state to wai ora'.

REPAIR AND RENEWAL OF THE PUBLIC WASTEWATER PIPE NETWORK

- 19** The relevant three waters agency increases the number of repairs and renewals in the public wastewater infrastructure (aligning with the strategy in Recommendation 18) to ensure that:
- » By 2033, no more than approximately 22 per cent of the wastewater pipe network will be worse than grade 3 (average condition)
 - » By 2040, no more than ~12 per cent of the wastewater pipe network will be worse than grade 3 (average condition)
 - » By 2050, no wastewater pipe assets will be below grade 3, and asset management plans will be actively identifying and replacing ageing pipes or pipes in poor condition.

STOPPING WASTEWATER OVERFLOWS

- 20** Territorial authorities and the relevant three waters agency prioritise the repair and replacement of public wastewater assets that lead to overflows on private or public land.
- 21** A target of zero wastewater overflows (by 2060) is achieved, except in infrequent situations (such as pump failures or rainfall events) with a >25-year average return period (ARI).¹⁻²
- To meet this goal, we recommend implementing six-yearly targets for reducing wastewater overflows set out in the relevant three waters agency's 2024 wastewater strategy and resource consent. These overflow reductions must align with our obligation to achieve the relevant first steps in each of the catchment tables under the heading 'Journey from current state to wai ora' and the primary contact recreation national bottom lines set by central government by 2040.
- 22** The relevant three waters agency investigates, and reports to, Greater Wellington and Mana Whenua (by 2022) on the feasibility of pre-treating wastewater overflows and any locations where this could be prioritised for upcoming Long Term Plan reviews.

¹ While we appreciate flooding events can result in wastewater contamination in the environment, we should not accept this as 'normal practice' for the wastewater network. By 2060, we expect the wastewater network to be of such a standard that it does not leak wastewater and that overflows only happen under unplanned or extreme events.

² A 25-year average return period (ARI) is a storm of a certain size and duration that could be expected to occur once in a generation, which has a four per cent probability of occurring every year. While historical records indicate this storm should occur every ~25 years, it could occur more than once over this period, but the probability would be low. Similarly, a 100-year ARI storm could occur twice in one year, but the probability would be very low.

RECOMMENDATIONS

STOPPING WASTEWATER OVERFLOWS

- 23** The relevant three waters agency increases its monitoring of wastewater overflows across the network, with the aim of identifying faults through increased data collection (by 2025). The identified faults are to be repaired in line with the timelines specified in Recommendations 19, 27 and 28.

IDENTIFYING AND FIXING DEGRADED PIPES AND CROSS-CONNECTIONS IN PRIVATE PARTS OF THE NETWORK

- 24** Greater Wellington amends the relevant regulatory documents, and the relevant three waters agency increases its investigations of, the public/private water networks (by 2030) to identify all cross-connections (wastewater connected to stormwater) and inflow faults (stormwater connected to wastewater).

The assessed pipe conditions and any faults are to be recorded on the relevant properties' LIMs and updated as repairs are made.

- 25** Greater Wellington amends the relevant regulatory documents on, and the relevant three waters agency increases its investigations of, the public/private water networks (by 2040) to identify all groundwater infiltration (to the wastewater network) and wastewater leakage (exfiltration).

The assessed pipe conditions and any faults are to be recorded on the relevant properties' LIMs and updated as repairs are made.

- 26** All territorial authorities provide financing mechanisms (subject to appropriate terms and conditions) no later than 2024 to assist landowners to fix faults in private laterals. These mechanisms could be deferred payments collected through rates, or territorial authorities could recover the costs when the properties are sold.

Territorial authorities and the relevant three waters agency also provide supporting advice to private landowners on their rights and responsibilities regarding private laterals.

- 27** Territorial authorities apply their existing powers under the Local Government Act 1974 and Health Act 1956 to ensure landowners repair all faults related to cross-connections (wastewater to stormwater) and inflows (stormwater to wastewater) within two years of their identification.

Cross-connection and inflow fault repairs on private land may be undertaken by the relevant three waters agency. However, the costs are to be covered by the landowners either directly or through other funding mechanisms (see Recommendation 26).

RECOMMENDATIONS

IDENTIFYING AND FIXING DEGRADED PIPES AND CROSS-CONNECTIONS IN PRIVATE PARTS OF THE NETWORK

- 28** Territorial authorities, through the relevant three waters agency, apply their existing powers under the Local Government Act 1974 and Health Act 1956 to ensure that:
- » All identified leaky private wastewater laterals, including infiltration and/or exfiltration leaks, are fixed within five years of identification. Enforcement action is to be taken if the fixes are not made in this timeframe
 - » By 2045, all identified leaky private wastewater laterals have been fixed and an ongoing cycle of maintenance is in place
- A database is developed and maintained of the conditions and ages of all private and public assets in the three waters network.

CREATING SAFETY NETS TO AVOID NEW PROBLEMS ARISING IN THE FUTURE

- 29** By 2025, territorial authorities and the relevant three waters entity develop a process (such as a 'warrant of fitness'), through which the condition of private laterals is assessed at the point of a property's sale or when a building consent application is lodged. The costs are to be covered by the property owners.
- The condition of these laterals, and any faults revealed through the process, are to be recorded on the properties' LIMs with the information updated as repairs are made (aligning with the timelines in Recommendations 27 and 28). Once the repairs are complete, an ongoing cycle of inspection and maintenance should be established.
-
- 30** By 2024, territorial authorities establish a complete set of regulatory and policy measures that:
- » Require landowners to repair all failed private laterals and record these failures on their LIMs until the repairs are complete
- Provide a funding mechanism to support landowners in making these repairs (such as instalments on their rates bills or councils recovering the costs when properties are sold).³

REDUCING SLUDGE TO LANDFILL

- 31** Relevant three waters agency investigates methods (by 2025) to significantly reduce sludge going to landfills from wastewater treatment plants.

³ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 23.

RECOMMENDATIONS

ENSURING RURAL WASTEWATER SYSTEMS ARE WELL MAINTAINED

32

Greater Wellington and territorial authorities provide good-practice information and advice to septic tank owners.

They also develop a programme for regular septic tank investigations undertaken in rural/lifestyle areas in the whaitua, with the aim of improving their understanding of the impact of septic tanks on water quality, ecology and public health.

Where septic tanks are identified as affecting water quality, ecology or public health, territorial authorities or Greater Wellington are to work with the relevant landowners to reduce these effects by repairing, replacing or enhancing their septic systems and having an ongoing cycle of maintenance.





Appropriate rural land use practices

Rural areas should be thriving, productive places where freshwater is valued and water quality is the best it can be. Many rural landowners are already working hard to achieve this, but the challenge involves many properties across a complex terrain, and it is often hard to gauge the wider impact of improvements made at the property/farm level.

The biggest impacts from activities on rural land are high levels of sediment and *Escherichia coli* (*E. coli*). Clearances of vulnerable land in the past have increased the amount of sediment entering waterways from hillsides and stream-bank erosion, and *E. coli* is entering streams via a range of human, livestock and avian sources. As in our urban environment, an integrated catchment management approach, which is informed by local monitoring information and involves the whole community, will be most effective for identifying contaminant hotspots and targeting the effort involved.

There are a number of national rules already being rolled out around farm planning and stock exclusion, so we have focused our attention on local needs. Landowners affected by national rules will need support to target implementation well in the context of their land and the wider catchment. But an approach of only applying the national rules in our rural catchments is not enough to uphold Te Mana o te Wai. Just as we expect of landowners and businesses in our urban environment, all rural landowners need to be taking action to reduce impacts on water and enhance the environment.

Plantation forestry can have benefits for water quality, but it also brings a high risk of sediment loss in the years after harvesting, particularly in the headwaters of Te Awa Kairangi/Hutt River. Unfortunately, the evidence we have heard suggests that good-practice sediment management in line with national rules is not yet being consistently used. This suggests a need to ramp up investigations of, and prosecutions for, poor management with greater accountability to communities affected by the consequences of poor practice.

Our recommendations include:

- » **Supporting implementation of national regulations and beyond, to better protect waterways**, small streams and manage contaminant hotspots through a local community catchment approach.
- » **Developing local monitoring information**, to better inform Freshwater Farm Plan development.
- » **Supporting best practice and monitoring compliance of forestry operations**, so the amount of sediment entering our waterways is reduced.



RECOMMENDATIONS

SUPPORTING IMPLEMENTATION OF NATIONAL REGULATIONS AND BEYOND

- 33** Greater Wellington provides sufficient Land Management advisory resources and funding to:
- » Support the implementation of actions at property and catchment levels to achieve catchment plan objectives
 - » Support landowners' implementation of national stock exclusion rules
 - » Help link farmers' action (including through their Freshwater Farm Plans) to catchment plans, and help small block owners to link their actions to catchment plans
 - » Support the implementation of Freshwater Farm Plans to ensure quality delivery of farm planning services and effective connections to catchment plans
 - » Promote the uptake of best management practice, and ensure open communication between landowners and Greater Wellington to keep best practices up to date
 - » Integrate advice to landowners with other relevant objectives to achieve co-benefits (e.g., carbon sequestration, biodiversity)
-
- 34** Greater Wellington supports landowners to exclude livestock from waterways by:
- » Helping them to develop and implement practices that minimise stock access to streams not covered by regulations
 - » Investigating the specific impacts of horses on water quality and considering further stock exclusion regulations if they are identified as a significant source of contaminants.
-



RECOMMENDATIONS

INCENTIVISING REVEGETATION OF VULNERABLE LAND

35 Greater Wellington investigates alternative incentives (e.g., rates rebates) to increase landowners' uptake of revegetation projects, including projects using native plant species.

This applies particularly to landowners with marginal and erosion-prone land (to reduce erosion and sediment loss), wetlands (for nutrient stripping, etc), and rural catchments generally (to slow flood flows further down the catchment).

SUPPORTING THE DEVELOPMENT OF PROPERTY LEVEL INFORMATION

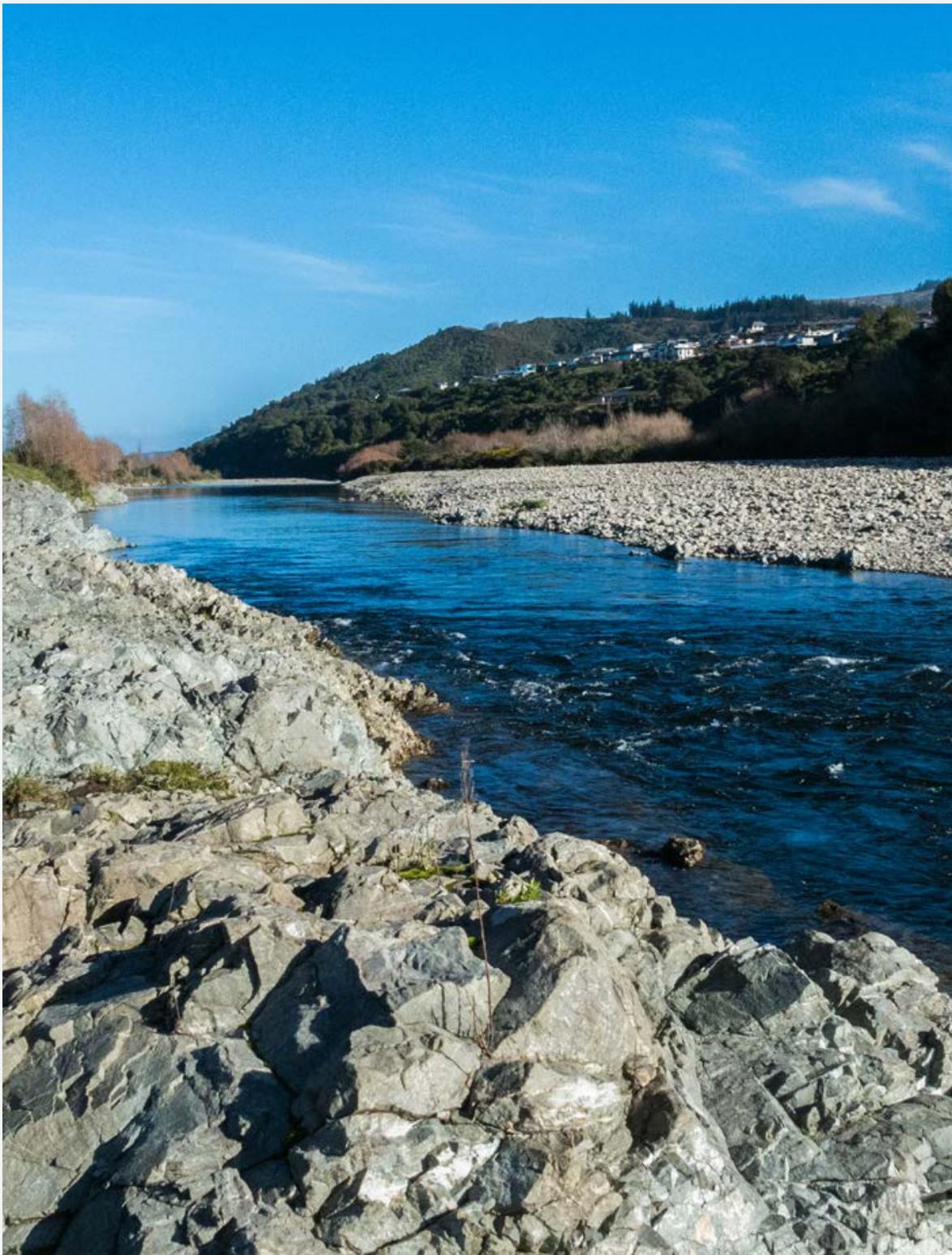
36 Greater Wellington supports the development of property-specific information to inform Freshwater Farm Plan development, particularly for managing diffuse discharges, CSA (Critical Source Area, i.e., hotspot) management, riparian planting (to complement stream fencing regs), and management methods for those streams where stock exclusion rules do not apply.

SUPPORTING BEST PRACTICE AND COMPLIANCE OF FORESTRY OPERATIONS

37 Greater Wellington provides enough staff and resources to:

- » Work with forestry groups (New Zealand Farm Forestry Association, New Zealand Forest Owners Association) and contractors to provide proactive advisory support that includes ensuring all forestry operators are aware (by 2023) of relevant regulatory requirements and good practice
- » Ensure all forestry operators in the whaitua are monitored for compliance with the National Environmental Standard for Plantation Forestry (NES-PF) and other relevant requirements from 2023 onwards, and share this monitoring information with the community
- » Take enforcement action on non-compliance.

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Council leadership to ensure best practices that do right by water

People and organisations throughout New Zealand have key roles in improving the quality of our freshwater and its environment, from those who work with water or have responsibility to protect freshwater, to the plumbers, developers and industries that rely on it to run their businesses.

Greater Wellington has an important role in leading the way in best-practice environmental management for green spaces, farms and forests, public transport systems and its own vehicle fleet. Other countries are phasing out copper brake pads with the aim of improving their water environments and preventing poisoning in rivers and streams – councils need to lead by example in using copper-free alternatives in their car fleets.

Councils also need to consistently expect all land use and activities to put water first. We know there are many examples of excellent professional practice, but there are still areas for improvement. Te Mana o te Wai is the responsibility of us all, so all urban development needs to use water sensitive urban design (WSUD). Land use and activity rules designed to protect water need to be enforced, with consequences based on the principles of restorative justice for water and local communities. Te Mahere Wai also includes a proposed restorative justice approach.

To increase council leadership to ensure best practices that do right by water, our recommended actions focus on:

- » **Councils leading by example**, so that they are not asking others to do what they are not doing themselves, and to support an ongoing focus on evolving to better practices.
- » **Consistent enforcement of rules that protect water**, so that there is transparency and growing trust that people will be held to account if they're not playing their part.

RECOMMENDATIONS

COUNCILS LEADING BY EXAMPLE

- 38** Greater Wellington and territorial authorities:
- » Are exemplars of good practice on all council-owned land and infrastructure, including contaminated land, farms, forestry land, wetlands and golf courses.
 - » Provide information on how good-practice decisions have been made.
 - » Report publicly on their year-on-year improvements.
-
- 39** Greater Wellington, territorial authorities and the relevant three waters agency set an example by ensuring that (from 2022), their fleet vehicles are renewed with copper-free brake pads or replaced by vehicles with these pads.

CONSISTENT ENFORCEMENT OF RULES THAT PROTECT WATER

- 40** Territorial authorities review and strengthen their plumbing consent and code compliance processes (by 2024), to ensure there are clear accountabilities and consequences for compliance transgressions and ultimately a low risk of future illegal cross-connections.⁴
-
- 41** Greater Wellington and the relevant three waters agency engage with and express the importance of environmental consequences to the Plumbers, Gasfitters and Drainlayers Board, relevant professional regulatory bodies and industry organisations. These organisations shall:
- » Together improve their systems of communication and reporting for disciplinary complaints
 - » Become active and consistent in reporting discovered evidence of sub-standard tradesperson work, especially for instances of illegal wastewater to stormwater connections
 - » Apply disciplinary action as set out under the defined offences in section 89 of the Plumbers, Gasfitters, and Drainlayers Act 2006.
-
- 42** The relevant three waters agency works with industry organisations to reinforce or improve standards, communication and training for best industry practice. Priority should be given to industries where there is high interaction with the stormwater and wastewater network (e.g., painters and cleaners).
-
- 43** Greater Wellington investigates and considers adopting new mechanisms to improve compliance (such as restorative processes and requiring bonds for earthworks and forest harvesting).

⁴ Adapted from WCC Mayoral Task Force Review on three waters, Recommendation 22.



Avoiding and managing risks from the use of contaminants

Some contaminants can have toxic and visual effects on freshwater and coastal environments. While we have many recommendations that look at changing our practices and increasing levels of treatment (such as implementing WSUD under the 'Making water sensitive urban design the norm' section), these recommendations do not specifically target the sources of all contaminants.

The recommendations below recognise that some practices (such as washing cars or cleaning paint brushes) can have detrimental impacts on environmental quality when not performed correctly and they still occur on a regular basis. Also, many old materials (such as roofs) can have an ongoing effect on water quality until they are replaced or treated.



RECOMMENDATIONS

44	Greater Wellington and Mana Whenua work with territorial authorities to ensure that all large green spaces (e.g., parks, school grounds, golf courses) are managed to reduce the infiltration of fertiliser into groundwater and waterways, with plans in place (by 2023) that include public reporting.
45	<p>With input from the relevant three waters agency (by 2026), Greater Wellington and territorial authorities develop or amend regulatory instruments to help reduce the risk of contaminants entering the stormwater system.⁵ These could include:</p> <ul style="list-style-type: none"> » Painting and/or replacing old roofs to reduce the prevalence of heavy metals » Washing paint brushes or cars » Treating runoff from carparks and roads.
46	Greater Wellington and territorial authorities develop a scheme to support the painting or replacing of large-scale high zinc-yielding roofs, which could include education, advice and incentives.
47	Greater Wellington and territorial authorities develop a scheme to reduce the impacts on waterways from the washing of cars.
48	Greater Wellington and territorial authorities investigate options to minimise the impacts of agrichemical sprays on waterways and report on options (by 2025).
49	<p>Greater Wellington, territorial authorities, the relevant three waters agency and relevant industry groups develop and implement a pollution prevention programme. This will be outlined, delivered and monitored through various mechanisms.</p> <p>The programme must:</p> <ul style="list-style-type: none"> » Raise the awareness of the public about what they can do to reduce their impacts on harbour and stream health » Promote and incentivise industry good management practice, targeting high-risk land-use activities that contribute relatively high levels of contamination » Identify and target priority areas for contaminant reduction based on the identification of catchments that contribute to localised hotspot areas » Investigate opportunities to enable change by streamlining regulatory processes and removing barriers to businesses and industries initiating change » Work with specific industries/suppliers to increase understanding around risks from exterior chemical cleaning products, with an aim to reduce usage through point-of-sale warnings and changes in product care advice.
50	Territorial authorities and the relevant three waters agency work together in high-risk areas to increase and prioritise regular street sweeping and sump clearance. They also need to investigate other opportunities to capture and clear contaminants from stormwater drains, including those to increase awareness and education with residents and businesses about how they can reduce contaminants (e.g., litter ending up in waterways).

⁵ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 12.



There are likely to be many contaminated sites in our rohe that we don't know about. We need to understand the size of the challenge ahead, so councils must prioritise working with landowners to find these sites, identify their effects on water quality, and try to stop any contaminants affecting the environment. This is important for private land, because landowners might not have caused the contamination, may not be aware of it, or may not have the funds to remediate the land. Local knowledge and vision will be vital to this process. Councils should also lead by example on publicly owned land by taking steps to manage the risks to water quality, particularly from closed landfills.

Identifying and addressing risks to water from historic contaminated land

Our whaitua has dozens of closed sites (such as factories, quarries, landfills and cemeteries) that have been contaminated by chemicals. Even though these facilities are not operating any more, some may still pose a risk to water quality due to leaching of contaminants which can harm our streams, rivers, aquifers and harbour. Current activities can also be contaminating land (e.g., landfills), but the risk of these activities to water quality and aquatic ecosystems is closely managed through resource consents.

RECOMMENDATIONS

- | | |
|-----------|---|
| 51 | Greater Wellington works with territorial authorities, Mana Whenua and landowners to identify and document (by 2026) the locations of potentially contaminated land, including landfills, and the risks to water quality and aquatic ecosystems. |
| 52 | Greater Wellington, territorial authorities and Mana Whenua work with owners of land with contaminated sites to further investigate, monitor, develop and implement remediation plans for those that pose medium-to-high risks to water quality and aquatic ecosystems. These plans are to be developed within five years of the identification of these sites, and those posing high risks to water quality are to be prioritised for remediation. |
| 53 | Agencies involved in the remediation of contaminated land affecting water quality and aquatic ecosystems include Mana Whenua in decision making and involve, consider and contain the visions and ideas of community groups in the planning and implementation, including as part of developing catchment plans (see Recommendation 13). |

Paying extra respect to water sources

The hierarchy of obligations under Te Mana o te Wai provides for the health needs of people, as a second priority behind the health and wellbeing of waterbodies. But by protecting water sources, such as te mātapuna (headwaters) and aquifers, we also protect communities' health and wellbeing by providing for safe drinking water.

Keeping nitrates out of our drinking-water sources, for example, will protect the health and wellbeing of waterbodies and people. We are fortunate in our whaitua to have low levels of nitrates in our water supply sources and our recommendations intend to keep it that way. Recent studies suggest the maximum allowable level for nitrate-nitrogen in drinking water (11.3mg/L) may be too high when accounting for the risk of colorectal cancer. Our recommendation to maintain nitrate-nitrogen in our water supply sources in the 'A' band (< 1mg/L) will future-proof against this potential risk.

Drinking water sourced from rivers in the Hutt Valley, Wainuiomata and Ōrongorongo catchments is well protected through the designation of 'water collection areas' (land above the water takes that is owned and managed by Greater Wellington and Wellington Water to provide safe drinking water).

The quality of drinking water at greatest risk is that in the aquifers in the Hutt Valley, where a city sits above them. The Waiwhetū aquifer is an essential source of drinking water, sometimes providing up to 70 per cent of our supply in



summer. Investigations after a bacterial contamination event in 2016-17 found that the aquifer was more vulnerable to contamination than previously thought. Further investigations are needed to better understand our aquifers to better manage risks to water quality and ecological health (see Recommendation 110).

Those living above aquifers have a role in managing the risks to them from their activities. Implementation of many of our recommendations will help better protect the aquifers, but councils, Mana Whenua and communities need to work together to investigate risks, prioritise actions and closely manage activities that create risks. Any work will need to align with regulation changes about drinking-water sources, signalled as part of the Three Waters Reform Programme.

RECOMMENDATIONS

- 54** Greater Wellington, Mana Whenua, Hutt City Council, Upper Hutt City Council, the relevant three waters agency and the community actively work together to better protect the current and future sources (surface water and groundwater) of human drinking-water from emerging threats.

They do this by investigating the risks associated with water quality and quantity and managing activities that may adversely affect this (such as land use and contaminant discharges). This may include developing district and regional plan provisions and other methods.

Balance the needs of water and people in the places we live

Te Mana o te Wai requires us to prioritise the health and wellbeing of water bodies and freshwater ecosystems first. While there are notable examples of past decisions that have done this (such as the areas which protect our drinking-water sources and our 'green belt'), for the most part the current design of the places we live in reflects decisions that have prioritised economic wellbeing at too great a cost to our relationship with water and its health.

Re-balancing things will not be easy, but there are ways we can start doing things differently so that our tamariki and mokopuna inherit an environment working more in harmony with water than what we have today. By putting water at the centre of our thinking we can re-imagine possible futures, identify the opportunities and work out how to overcome perceived constraints. To make a start our recommendations are focused on:

- » Making water sensitive urban design the norm
- » Approaching flooding risks in ways that better respect natural processes
- » Protecting and restoring wetlands
- » Letting the fish move freely throughout the whaitua.



Making water sensitive urban design the norm

Urban development disrupts natural cycles. Urban growth has cleared and contoured land to establish built environments with largely impermeable surfaces, introducing new (emerging) contaminants and increasing existing contaminants into the environment, with little treatment along the way. This results in reduced water storage and natural treatment, and a reduction in stream flows to maintain the remnant ecosystems.

We need to reconsider the way our urban spaces grow and develop. This isn't a new idea, as many cities in New Zealand are years ahead of us. What's missing, in our view, are strong requirements and an easy-to-follow regulatory and design pathways to incorporating WSUD into any new developments. In our cities we must also install in new developments (and the existing built environment) more natural stormwater systems ('green infrastructure') to treat contaminated water at its source. We must also drive a community-wide and industry-wide shift that considers environmental impacts at the household level.

Councils are responsible for controlling urban developments and should ensure their rules require the widespread use of WSUD. This is because WSUD uses interventions (such as rainwater/stormwater harvesting, rain gardens, constructed wetlands, swales, green roofs and permeable pavements) to reduce water-quality impacts and reduce peak wet weather flows through naturalised treatment processes.

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This would be a game-changer and help to rekindle our connections to water and the environment, especially for our children.

To realise our vision of WSUD being the norm for our urban environments, our recommendations focus on:

- » **Creating a consistent approach to WSUD across the whaitua**, so that it is easier for people to understand expectations and to ensure equal care for water no matter where in the whaitua development is happening.

- » **Supporting people to make the most of Water Sensitive Urban Design (WSUD)**, so good decisions are made that maximise the benefits for water and people and take account of the wider catchment context.
- » **Being smarter about approaches to stormwater management**, so that we achieve a more natural water cycle and make good use of water where it falls.
- » **Ensuring green infrastructure is maintained**, so that it remains fit for purpose throughout its life.

RECOMMENDATIONS

CREATING A CONSISTENT APPROACH TO WSUD ACROSS THE WHAITUA

- 55** The relevant three waters agency's (currently Wellington Water) Regional Standard for Water Services should incorporate WSUD stormwater and water conservation interventions.⁶

Also, territorial authorities' codes of practice and district plans should be amended to refer to the Regional Standard for Water Services (where applicable) by 2025, and should be mandatory for all developments (greenfield, infill/brownfield and re-development, including infrastructure). It should be supported through education programmes for contractors, community groups, and the design and engineering community.

- 56** By 2022, Greater Wellington convenes a WSUD working group with Mana Whenua, territorial authorities, the relevant three waters agency and Waka Kotahi.

The group will need to be funded to cover its wide-ranging work, which will aim to:

- » Resolve barriers to WSUD in the Wellington Region
- » Identify opportunities to retrofit WSUD and green infrastructure into the existing urban environments, incorporating communities and catchment-level planning
- » Identify opportunities to 'daylight' piped streams and restore existing streams to promote community connection, habitat restoration and flood mitigation
- » Lead by example in promoting new WSUD initiatives.

The working group should be part of Greater Wellington's newly established regional stormwater forum. It should also collaborate with key stakeholders (such as developers and commercial, industrial and residential community groups), and help provide education and training material/programmes for contractors.

- 57** By 2025, Greater Wellington, Mana Whenua and territorial authorities amend the relevant planning documents to retain, restore and enhance the natural drainage system – so that they require hydraulic neutrality and water-quality treatment in urban catchments through WSUD.

⁶ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 7.

RECOMMENDATIONS

SUPPORTING PEOPLE TO MAKE THE MOST OF WSUD

58 Greater Wellington and Mana Whenua, together with territorial authorities and the relevant three waters agency, develop (by 2025) a comprehensive suite of regulatory and non-regulatory interventions for new property developments and infrastructure, to be implemented through WSUD via a catchment-management approach.

These interventions would include water impact assessments, rainwater/stormwater harvesting, rain gardens, constructed wetlands, green roofs, improved sump maintenance, strategic street sweeping and permeable pavements to reduce water-quality impacts and reduce peak wet weather flows.⁷ Existing properties and infrastructure should be retrofitted using this WSUD approach whenever opportunities arise (e.g., at the end of an asset's life).

59 The relevant three waters agency:

- » Develops a standardised tool (by 2025) that can be used to assess a development's potential contributions of contaminants and hydrological impacts
- » Recommends potential options to mitigate these effects using site-appropriate WSUD green infrastructure.

This supports the global stormwater strategy (Recommendation 56) and Recommendation 58.

BEING SMARTER ABOUT APPROACHES TO STORMWATER MANAGEMENT

60 By 2025, Greater Wellington and territorial authorities amend the relevant planning documents so that all resource consents for property developments and infrastructure upgrades/repairs require the minimisation of stormwater effects and achieve hydraulic neutrality on-site. Where this is not possible or practical on development sites, a formal stormwater offsetting programme could be adopted to fund more efficient centralised systems in the public realm.⁸

61 Territorial authorities amend regulatory documents, while working with the relevant three waters agency, to (by 2035) reduce the effects of stormwater flooding on public health, safety and property by further integrating the use of roads and open spaces (such as parks and sports grounds) to act as overland flow paths and flood storage.⁹

ENSURING GREEN INFRASTRUCTURE IS MAINTAINED

62 By 2024, territorial authorities work with the relevant three waters agency to develop an approach to the ownership and management of green infrastructure for property developments, and ensure this infrastructure meets appropriate standards when being vested to council ownership.¹⁰

63 Territorial authorities ensure that (by 2024) all green infrastructure is adequately capitalised and depreciated to provide funding for ongoing maintenance and renewals.¹¹

⁷ Modified from WCC Mayoral Task Force Review on the three waters, Recommendation 6.

⁸ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 8.

⁹ Modified from WCC Mayoral Task Force Review on three waters,

Recommendation 14.

¹⁰ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 10.

¹¹ Modified from WCC Mayoral Task Force Review on three waters, Recommendation 11.

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Approaching flooding risks in ways that better respect natural processes

Flooding can affect many parts of the whaitua, in both rural and urban settings. This can occur from small streams overflowing their banks, surface ponding due to insufficient stormwater system capacity, or even large-scale and extensive flooding when a river bursts its banks. Much of the urban environment has developed on floodplains, with the largest supporting over 70,000 people around Te Awa Kairangi/Hutt River.

To keep these communities safe, we rely on stop-banks to constrain the river's flow and keep it away from people and houses. However, while this keeps us safe, the process can damage habitats, remove swimming holes and mahinga kai, and prevent the river flowing in its natural path. Allowing rivers to self-adjust aligns with te Mana o te Wai and can work out cheaper than ongoing hard engineering interventions.

Te Mana o te Wai requires us to change the way we manage rivers, including through flood protection. We can't compromise the safety of our communities, but we must honour the mana and the mauri of the wai (both Te Awa Kairangi/Hutt River and the smaller streams that flow into it). This means flood protection works must balance the safety of communities and the ability of the river to flow naturally, while enhancing swimming holes and habitats, and empowering Mana Whenua to act as kaitiaki and undertake mahinga kai. We must also not allow new development in areas that we know are at high risk of flooding. Keeping people out of harm's way in the first place is the best way to keep our communities safe.

We're calling on councils to change the ways they manage flooding and the dangers it creates, aligning with Te Mana o te Wai. This change should happen as soon as possible, because it will take a long time for the benefits to appear of giving streams and rivers room to move. We may not reap those benefits ourselves, but our children and grandchildren will enjoy rivers and streams flanked by native trees and surrounded by native birds.

RECOMMENDATIONS

- 64** Greater Wellington works with Mana Whenua, community groups and territorial authorities to amend (by 2024) all relevant regulatory documents to ensure:
- » That river management enhances habitat restoration and stormwater treatment along the full length of developed rivers
 - » The protection of swimming holes.

Specifically, for Te Awa Kairangi/Hutt River, these objectives should be accounted for when undertaking flood protection works.

- 65** Territorial authorities update the relevant regulatory documents (by 2025) to ensure they incorporate up-to-date flood hazard mapping and are supported by rules that prevent property development in high-risk areas.

- 66** By 2024, Greater Wellington amends the relevant regulatory documents to include policies that aim to avoid unsuitable property development, with reference to setbacks from stream/river margins and hydraulic neutrality.

By 2025, territorial authorities incorporate rules in their district plans that:

- » Require WSUD, including hydraulic neutrality in any developments
- » Provide for buildings to be set back from river and stream margins (these setbacks are to provide for āhua and natural character)
- » Restrict development in known overland flow paths (in line with Recommendation 61).

- 67** Greater Wellington amends the relevant regulatory documents by 2023, while working with Mana Whenua and territorial authorities to co-design operational guidelines for undertaking flood works on small urban streams, including those on private property.

These guidelines would:

- » Leave room for the river, floodwater and natural processes
- » Establish native riparian vegetation, which also gives effect to the values in the NPS-FM 2020.

- 68** Greater Wellington, territorial authorities, Mana Whenua and the relevant three waters agency develop plans (by 2030) for the managed retreat and adaptation of three waters infrastructure due to rising sea level.





Protecting and restoring wetlands

Natural wetlands are rich in biodiversity and have a unique role in filtering contaminants from water. They are a natural and essential part of water's journey from the mountains to the sea and are important for slowing the impacts of flooding, cleansing water and as carbon sinks. From micro wetlands that are the source of our streams, to large areas such as the Mangaroa peatland and those wetlands around the Parangārehu Lakes (Lakes Kōhangapiripiri and Kōhangaterā), they are a highly valued environment that must be protected.

The retention and restoration of our remaining repo (wetlands) is of great importance to Mana Whenua who recognise repo for their role as habitat for rongoā (plants able to be used as remedies), mahi raranga (plants and soils used for weaving and construction) and supporting mahinga kai values (places, taonga species and activities relating to cultural harvest).

Unfortunately, most of the wetlands in our whaitua have been lost, and what's left are our most critically endangered habitat. Only three per cent of the original wetland extent remain in Whaitua Te Whanganui-a-Tara. Most of these wetlands are on private land and depend on landowners' efforts for their protection and to avoid further fragmentation and degradation. The Mangaroa peatland is the only deep peat land in the Wellington Region, and while originally 420ha in area it has been affected by draining for more than a century. Draining wetlands has changed them from carbon sinks to sources of carbon dioxide.

Our goal is to see the remaining wetlands protected and enable degraded wetlands to be restored by communities in a way that does not affect people's housing. Many landowners are already investing in protecting wetlands on their properties, but there is still work to be done. Barriers to taking action need to be overcome, so that landowners have the information, support and community aspirations to act as kaitiaki for these precious areas. To this end, the committee also supports Mana Whenua aspirations for the Parangārehu Lakes area.

The further loss or degradation of wetlands is incompatible with our role as kaitiaki, because without wetlands and the species they support the mauri of our waters is diminished. Our recommendations give protection to these rare habitats and acknowledge our debt to them for the physical and spiritual sustenance they provide. Restoration benefits the journey of water from mountains to sea and enhances Te Mana o te Wai.

RECOMMENDATIONS

69	Greater Wellington supports and incentivises landowners wanting to restore wetlands and removes barriers for best-practice restoration of the mauri of degraded wetlands.
70	Greater Wellington increases the resourcing available to implement and enforce the NPS-FM 2020, National Environment Standards and PNRP provisions about wetland identification, protection and restoration.
71	Greater Wellington supports positive relationships with wetland owners, including those with wetlands above the Parangārehu Lakes and at Mangaroa. It also provides assistance to protect and restore those wetlands.
72	Greater Wellington and Mana Whenua seek opportunities to develop and restore wetland habitat when managing and designing flood protection works and developing green spaces.
73	Greater Wellington maps all natural wetlands in the whaitua, as required by the NPS-FM 2020. This is to be completed by 2024, rather than the NPS-FM deadline of 2030.
74	Greater Wellington addresses the issues raised in Te Mahere Wai on the recommendations about the Parangārehu Lakes area.





Letting the fish move freely throughout the whaitua

Our streams, rivers, wetlands and lakes are home to a large variety of native and introduced fish. Many people are not aware that within our dense urban footprints some native species may still be present, despite the highly modified environment.

However, life for the fish is not without its problems. As our cities have grown, we’ve piped the streams that used to flow to the sea and those pipes have made it difficult – even impossible – for fish to migrate between the sea and freshwater. Added to this are other potential barriers (such as poorly installed and maintained culverts, flood gates, ford, weirs and dams, e.g., the Silverstream Weir across Te Awa Kairangi/Hutt River).

The situation is especially grave for mahinga kai – the native fish species, the fish-gathering process and the passing on of knowledge from generation to generation. Blocking the fish passages threatens not only their survival, but also the kaitiaki role and cultural practices of Mana Whenua. With so many native fish species under threat of extinction, change is urgently needed.

To start with, we need to understand the scale of the problem by identifying all the barriers in our whaitua, then find ways to remove them. Greater Wellington can start this process, but we know that Mana Whenua will be the key to the programme’s successful implementation. While councils can help Mana Whenua in setting up the programme, they simply don’t have the mandate, the capacity or the expertise to manage freshwater for mahinga kai.

We understand that restoring fish passages will be a long process, and for that reason our recommendations include priorities (such as the spawning places of mahinga kai species). Also, we believe it will be easier to find and remove barriers to fish passage on public land, so we’ve scheduled this work ahead of that on private land. Together, we’ll enable our native fish to live the way they did before we modified their habitat, restoring mahinga kai and the mauri of our precious water.

RECOMMENDATIONS

75	Greater Wellington identifies all fish passage barriers on public land by 2025 and private land by 2030.
76	Greater Wellington, together with Mana Whenua, community groups and territorial authorities, works with owners of fish passage barriers to remediate the highest-risk sites by 2040 and all other sites as soon as practical, but no later than 2045. Catchments highly valued for their indigenous fish and mahinga kai species are prioritised and Greater Wellington reports publicly on the identification and remediation progress.
77	Greater Wellington and Mana Whenua work with territorial authorities to identify (by 2025) and restore (by 2035) the spawning habitats of indigenous fish and mahinga kai species (e.g., inanga) in their rohe.

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Be responsible and respectful in our use of freshwater

Our awa need abundant water to be their true selves and support vibrant freshwater ecosystems. All water we take for our own use is precious – given to us by water as the source of all life. But our way of life uses water in a way that affects water health more than it should. This isn't consistent with Te Mana o te Wai as the health and wellbeing of water bodies and freshwater ecosystems should come first.

The population dependent on the waters of Whaitua Te Whanganui-a-Tara is expected to rise significantly in the coming years, with a corresponding rise in the need for water. However, climate change means rainfall will be more erratic, with occasional longer droughts and bigger storms. Sea-level rise will increase the risk of salt water getting into the Waiwhetū aquifer. Together, these factors mean that unless we change our ways, the health of water will decline.

If we want to realise Te Mana o te Wai and have enough water to thrive in the future, we need to respect water by being more careful with what we take and use. Our recommendations for being more responsible about how we meet the needs of people are focused on:

- » Redesigning our water allocation system
- » Moving towards more natural flows in our rivers and streams
- » Only using the amount of water we need
- » Future planning for our public water supply

Councils, individuals and commercial water users in the Porirua community have the same responsibilities to Whaitua Te Whanganui-a-Tara as those who live here, as their water is supplied from the same sources within this whaitua. Engagement between the relevant councils and three waters agency will be needed to support the Porirua community with the implementation of our recommendations.



Redesigning our water allocation system

Many of our problems can be traced back, in part, to our water allocation systems. We need to transform and redesign these systems if we're to achieve Te Mana o te Wai and give effect to iwi rights and interests. We also need to develop measures to understand what success in giving effect to Te Mana o te Wai looks like for water quantity.

Tweaks within the current water allocation regulatory framework will not be enough to achieve outcomes.

Fundamental system change is needed for Mana Whenua and communities to be able to realise their aspirations for water use. For instance:

- » We need to rethink the way we source water and supply it to our cities.
- » There must be changes in the way people and businesses use and value water.
- » There needs to be a better way to decide who can access water, because the 'first come, first served' approach is inequitable and hasn't worked well for Mana Whenua or the community.
- » We need to consider how we dispose of our sewage, because using large amounts of high-quality drinking water to dispose of it is wasteful of the water.

As we restore the mauri of our awa we can build a better system – one in which we look after the water first, in partnership with Mana Whenua. The transformation of our water allocation system will take time, but changes can be made now to begin that journey and better protect our rivers and streams as set out in other parts of our recommendations.

RECOMMENDATIONS

78	<p>Mana Whenua and Greater Wellington work together and with input from relevant interested parties, including the three waters agency, to design a new water allocation regulatory regime that:</p> <ul style="list-style-type: none"> » Gives effect to our understanding of Te Mana o te Wai » Provides for Mana Whenua rights and interests, which may include a specific allocation for iwi » Includes mātauranga Māori in its development and monitoring.
79	<p>Greater Wellington investigates options for iwi allocation in the current regulatory regime.</p>
80	<p>Mana Whenua and Greater Wellington work together to develop a framework of how Te Mana o te Wai (for water quantity) can be achieved and demonstrated. This includes agreeing on the process, measures and indicators of success.</p> <p><i>Note: This links to wider attribute work, as the measures can't sit with water quantity alone.</i></p>
81	<p>Greater Wellington supports Mana Whenua to develop mahinga kai measures related to water quantity.</p>
82	<p>Greater Wellington, Mana Whenua and territorial authorities (including Porirua City Council) recognise, promote and provide for the mana of the Te Awa Kairangi/Hutt, Wainuiomata and Ōrongorongo Rivers as awa tupuna for Taranaki Whānui and Ngāti Toa Rangatira. They are treasured taonga and providers of wai ora and hauora (health and wellbeing) for the whole Whaitua Te Whanganui-a-Tara community and Te Awarua-o-Porirua community.</p>

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Moving towards more natural flows in our rivers and streams

While it will take time to re-design our water allocation system, we can make changes to our regulations now that will enable us to reduce the amount of water taken at times of low flows and better protecting our rivers and streams. To move towards more natural flows in our rivers and streams, our recommended actions focus on:

- » Changes to minimum flows and allocation amounts, to better protect the health of water and ecosystems through natural cycles of change in water abundance.
- » Removing permitted water takes, so that the only takes not consented are for the provision of drinking water for people and livestock.
- » Supporting the implementation of new regulations around water takes, so that people know the rules and the impact of changes is well understood.

The current minimum flow at Kaitoke on Te Awa Kairangi/ Hutt River, where the main water supply intake is located, is 600L a second. As a percentage of the mean annual low flow (MALF), approximately 35 per cent, and considering the high volume of abstraction, this is well below what is deemed to be precautionary in Aotearoa for providing for ecosystem health. It is also likely to be impacting on other values.

We don't yet have measures or understanding about what minimum flows give effect to Te Mana o te Wai, but the hierarchy of obligations in the NPS-FM requires the health and wellbeing of the river to be prioritised over other uses.

Our recommendations take a precautionary approach by endorsing significant increases to minimum flows over time to reduce risks to ecosystem health from abstraction at low flows. At the same time investigations will be undertaken to improve our understanding (see Recommendation 107).

Raising the minimum flows will help achieve a more natural flow that is less affected by water takes, but it will impact on our community water supply. People still need water, which is why we have recommended that the transition happen over a significant length of time. This allows for engagement with councils and community (including Porirua), the community water supply to diversify its sources and create more storage, and for tools to reduce water demand and wastage to be implemented (see recommendations in the 'Only using the amount of water we need' and 'Future planning for our public water supply' sections).

There is a very small amount of groundwater available to be allocated, but we are recommending that the allocation be capped at the existing consented use. This is because aquifers and surface water are highly connected, so taking more groundwater will result in a greater impact on the surface water that is already fully allocated.

In addition to the consented water takes, people can take up to 20,000L of water a day from any stream under the 'permitted activity water take' rule in the PNRP. While evidence suggests people don't often take the full amount, if they did, the flow and overall health of our streams would be at serious risk. These smaller streams and the water they carry are vital to the whole whaitua, as they provide important environments for our urban and rural residents and precious habitats for native fish species and mahinga kai.

For this reason, we recommend that the current permitted allowance be replaced with a requirement that people taking water from a stream or aquifer gain a resource consent first. This wouldn't apply to takes that provide drinking water for people and livestock, as these takes are protected under the Resource Management Act.

RECOMMENDATIONS

CHANGES TO MINIMUM FLOWS AND ALLOCATION AMOUNTS

- 83** Greater Wellington includes in the PNRP the following water allocation limits for the Te Awa Kairangi/ Hutt, Wainuiomata and Ōrongorongo Rivers:
- » Increase the minimum flows over time to 80 per cent of MALF in 50 years' time:
 - The first minimum flow increase must be included in the upcoming plan changes to be notified by 2024 and will apply from the mid-2030s, or whatever date is most appropriate, to ensure that the new minimum flow applies when the bulk water consents to take surface water in the major water supply catchments are renewed
 - Future increases in minimum flow must be stepped out in line with the bulk water consent renewals
 - We expect this pathway for increases in minimum flows to be revised as a result of further investigative work to understand the limits that would achieve Te Mana o te Wai, outlined in Recommendation 107.
 - » Cap the amount of water available to be allocated through consents at the existing consented use.

- 84** Greater Wellington includes in the PNRP the following water allocation limits for all streams (outside the three major water supply catchments):
- » 100 per cent of MALF for the minimum flow
 - » 30 per cent of MALF for the allocation limit.

- 85** Greater Wellington retains the current policy settings that allow the reallocation of any water that becomes available within the allocation limit to be reallocated.

REMOVING PERMITTED WATER TAKES

- 86** Greater Wellington amends the PNRP policy and rule framework in Whaitua Te Whanganui-a-Tara so the region-wide permitted activity rule (R136) no longer applies to this whaitua.

Note: Water takes for reasonable domestic use and animal drinking water are still authorised under section 14(3)(b) of the Resource Management Act. All other takes will require a resource consent.

SUPPORTING THE IMPLEMENTATION OF NEW REGULATIONS AROUND WATER TAKES

- 87** Greater Wellington amends the PNRP through a plan change (by 2022) to ensure that all water takes requiring resource consent within Te Whanganui-a-Tara require metering. Electronic metering is required by 2027.

- 88** Greater Wellington reviews all existing consents in catchments outside the major water supply catchments that haven't expired within five years of the whaitua plan change, to ensure that any updated allocation limits are applied to consents.

- 89** In collaboration with catchment communities, Greater Wellington develops a work programme designed for and with landowners (particularly for lifestyle block owners), to ensure they are aware of regulations on the use of water.

RECOMMENDATIONS

SUPPORTING THE IMPLEMENTATION OF NEW REGULATIONS AROUND WATER TAKES

- 90** Greater Wellington undertakes assessments (e.g., through rural engagement surveys and targeted catchment investigations) to understand any potential changes in the way people are taking unconsented water (section 14(3)(b) of the Resource Management Act about takes).
-
- 91** Greater Wellington increases its flow monitoring in small streams in catchments where land use is changing significantly, or there is thought to be a relatively high potential for change (e.g., rural intensification). This is to establish whether any increase in water use is affecting flows and therefore values.
-



Only using the amount of water we need

The large population base in Wellington and the Hutt Valley relies on Te Awa Kairangi/Hutt River and its aquifers for most of its community water supply, and Porirua does as well. In total, about 95 per cent of all water taken in this whaitua is for community water supply. Of that, around 60 per cent is used for residential purposes, 20 per cent for commercial/ industrial purposes and 20 per cent is lost to leaks.

Our whaitua has one of New Zealand’s highest rates of water use per person – and that’s not a statistic to be proud of. Practically speaking, and at the current rate of use, we can expect more restrictions on water use in the future due to the pressures of population growth and climate change. We must reduce demand and improve water efficiency to both solve our future water crises and have more respect for the mauri of our awa.

Individuals and commercial water users have a vital role in making this happen and need to be supported with information and tools that enable them to make more informed decisions about their water use. Reducing individual use will help overall demand, which is essential to achieving a more resilient water system in the future.

Water tanks are a useful tool for reducing the pressure on the public water supply. We recommend they be installed in residential and commercial properties for purposes that don’t require treated water (such as watering gardens). Water tanks also improve people’s connection to their water, slow runoff from impervious surfaces, and act as emergency water sources in events like earthquakes.

RECOMMENDATIONS

92 Territorial authorities and the relevant three waters agency implement universal residential metering to identify water wastage, reduce demand and enable more effective network management. To enable metering:

- » Territorial authorities will consult on how to fund water meters by 2025
- » The relevant three waters agency will install water meters.

The whaitua committee recognises that water metering enables a range of mechanisms for reducing demand. These include, for example: leak detection; information provision; the identification of potential excessive users for advice, support and/or fines; and volumetric charging.

Agreement could not be reached on whether volumetric charging should be introduced as a lever for reducing demand. However, if it is, it will be important to ensure that:

- » Water assets remain in public ownership
- » People can access enough water to flourish
- » Vulnerable communities are not disadvantaged
- » Water is respected as the giver of life and doesn't become a commodity
- » It prevents exploitation and excessive use by people who can afford it.

93 The relevant three waters agency provides the community (by 2022) with information on and practical support for being more efficient with water. The information might cover:

- » Technological solutions (such as the different uses of rainwater tanks)
- » Water-saving tips
- » The natural water cycle and where our water comes from.

The support could be provided through partnerships with catchment groups, through the Mangai Wai Ora (kaitiaki) programme (see Recommendation 101), professional associations and enterprises (e.g., a Sustainability Trust model).

RECOMMENDATIONS

- 94** The relevant three waters agency develops a programme by 2023 that engages with commercial water users (and starts with identifying the top 100).
- » The programme: Identifies how water is used
 - » Helps users to understand how their use compares to that of similar industries nationally and globally
 - » Supports businesses to improve water efficiency and/or lower their demand.
-
- 95** Greater Wellington and the relevant three waters agency investigate the current pricing for commercial water users (by 2023), to determine if changes in pricing mechanisms could help improve their water-use efficiency and identify the possible economic implications.
-
- 96** Territorial authorities promote the use of rainwater tanks or alternative water-storage solutions for non-potable uses in new commercial and residential developments.
- Note: The majority of the committee strongly supported rainwater tanks being mandatory for new developments, but there was not consensus agreement. The committee did agree that more rainwater tanks in new developments would be beneficial and their use should be promoted.*
-
- 97** Greater Wellington, territorial authorities and the relevant three waters agency incentivise (and support with educational material) the retrofitting of rainwater tanks to reduce demand and/or attenuate stormwater, prioritising suburbs that are prone to flooding due to capacity issues in the stormwater network.
- Territorial authorities provide a funding mechanism for willing property owners.
-



Future planning for our public water supply

We want to have enough water available to provide for Wellington’s future population growth, while putting the rivers and aquifer first as part of Te Mana o te Wai and accounting for the impacts of climate change on future rainfall. We also want to ensure our rivers have enough water to support their ecosystems, provide us with

recreation opportunities, and protect our aquifers from salt water intrusion. Although we use more water in the summer than in the winter, the total amount doesn’t vary much, so we need a steady supply.

Work needs to start straightaway on assessing and fixing leaks in the public drinking-water network, to reduce leaks and water wastage over time. If investigations reveal that the network is in a worse state than expected, and therefore that short-term leak reduction targets can’t be met, it’s still important to ensure that individuals, communities and businesses have accessible and fit-for-purpose information on the situation.

We also need to find ways to ensure water is supplied from more diverse sources in the future, with water supply less reliant on the three major water supply catchments at times of low flows. This includes investigating options to: harvest more water when the rivers are more resilient e.g., in higher flows); investigate options for additional large-scale storage; use rainwater tanks for storage of non-potable water; and recycle urban water on a community scale.

RECOMMENDATIONS

98 The relevant three waters agency ensures that 100 per cent of the public drinking-water network is assessed for leakage (by 2030) and a plan (publicly available with progress reporting) is developed to repair and replace assets in the Wellington drinking-water network so that:

- » By 2030, the network will have an Infrastructure Leakage Index (ILI) of 4.5 or lower
- » By 2040, the network will have an ILI of 3.5 or lower
- » By 2050, an ILI target of 2 or less will have been achieved and an ongoing cycle of maintenance will be in place to ensure this continues.

99 The relevant three waters agency investigates additional water storage and harvesting water at high flows as soon as possible to ensure continued security of supply for municipal use.

100 The relevant three waters agency engages with the community and Mana Whenua (by 2023) on implementing community-scale, urban-water recycling for uses such as firefighting, the irrigation of parks and industrial/commercial applications.

Initiatives to be considered should include:

- » Collecting and storing community stormwater in public spaces for non-potable purposes
- » Using the continuous supply of treated wastewater for non-potable purposes.

Continued public education and long-term three waters strategies should also encourage a greater use of recycled urban water, and evaluate where existing networks can be optimised, replaced or retrofitted to make greater use of recycled water.



Develop the workforce needed to realise Te Mana o Te Wai

People in industries that use or affect water need to have a 'care for water' mindset, along with the knowledge and skills to integrate that philosophy with their everyday work. As more information is gained about the state of public and private three waters networks instances of cross-connected

pipes and other sub-standard work continue to come to light. This is just one example of the importance of thinking about water within vocational training and professional standards.

Implementation of our recommendations relies on the availability of skilled Mana Whenua to advise at the governance level, partake in cultural monitoring and act as kaitiaki. There are already significant pressures and constraints on their capacity, and the value of their time is not always recognised.

Implementation (at the desired pace) also depends on the availability of workforces in a range of sectors with the right skills and capabilities to do the work, now and in the future. These workforces are already in high demand and the skills required are not always available locally. We need to be deliberate about finding and creating the workforce we need, in the context of the nationwide focus on improving the health of waterways and unprecedented infrastructure investment internationally.

RECOMMENDATIONS

101 Greater Wellington provide resourcing for a Mangai Wai Ora (kaitiaki) programme (as outlined in Te Mahere Wai), to be developed and led by Taranaki Whānui and Ngāti Toa, alongside relevant industry bodies to train a workforce of kaitiaki to support the ongoing delivery of work on freshwater projects in the whaitua.

The scope of the role could include:

- » Freshwater and coastal monitoring using a range of scientific information, including mātauranga Māori, citizen science and community knowledge to inform the current state of water and the environment
- » Leadership in freshwater policy and plan development
- » Providing for cultural relationships with freshwater and coastal environments
- » Monitoring of mahinga kai and Māori customary use
- » Checking wastewater and stormwater infrastructure on private and public land, in support of three waters agency roving crews
- » Providing advice and support for industries on their potential impacts on water quality and mitigations
- » Supporting education on local streams, water quality and water usage in schools and the community
- » Clearing waterways of rubbish, riparian planting and reporting pollution.

102 Mana Whenua, Greater Wellington and territorial authorities engage with relevant Workforce Development Councils (WDCs) to identify how the WDCs can best contribute, through their leadership roles in vocational education and training, to growing the workforce needed to take care of water.

Attachment 3 to Report 24.89





Make clear where we expect central government to act

Central government has a role to play alongside councils, Mana Whenua and the community in achieving water-quality aspirations for fresh and coastal waterbodies. Several areas have been identified in our recommendations where central government need to play their part by changing national regulations.

The need for national-level reform doesn't stop individuals from doing their bit to protect water in the meantime (such as replacing the copper brake pads in their own cars).

RECOMMENDATIONS

- | | |
|------------|--|
| 103 | Greater Wellington and territorial authorities continue to advocate and petition central government for new regulations to restrict the supply of water for water-bottling activities. |
| 104 | Greater Wellington advocates to central government in 2022 for the Emissions Trading Scheme to include the protection and restoration of natural wetlands, whether or not they are currently functioning wetlands. |
| 105 | By 2022, Greater Wellington, Mana Whenua and territorial authorities (through the regional stormwater forum – see Recommendation 56) will advocate to central government to introduce with urgency rules that will phase out copper brake pads in vehicles by 2030 or earlier. |



Improve information available for better decision making in the future

The recommendations in this WIP have been informed by the best available knowledge and information. However, gaps have been identified in several areas and we are still growing our understanding of how science (through research) can draw on the knowledge of mātauranga Māori (as kaitiaki). Understanding their complementary relationships and the benefits for both will help us take a holistic view in seeking solutions to our problems.

Investing in research and learning now will lay the foundation for innovation and more targeted decision making around these complex issues in the future. We expect to be continually adjusting how we care for water as knowledge and information evolves over time. We recommend focusing further investigations on:

- » **Strengthening the use and influence of mātauranga Māori**, so that progress on Mana Whenua values is better understood and used to inform kaitiakitanga.
- » **Developing measures for community participation and connection**, so that we better understand people’s relationships with water.
- » **Informing future minimum water flow and allocation decision making**, so that we can be confident we are making the best decisions for the awa.
- » **Better understanding the health and connections of aquifers**, so that we can understand whether further actions are needed to restore their mauri and uphold their mana.
- » **Improving our understanding of nutrient sources to inform toxic algal management**, so that we can target and build on recommended actions to further lower the risk of regular blooms.

RECOMMENDATIONS

STRENGTHENING THE USE AND INFLUENCE OF MĀTAURANGA MĀORI

106 Greater Wellington partners with Mana Whenua to use mātauranga Māori in developing an understanding of water quality and quantity within the whaitua (e.g., our understanding of springs, aquifers and wetlands, and stream water-quality monitoring).

107 Greater Wellington partners with Mana Whenua to develop a comprehensive approach to understanding, managing and allowing for mahinga kai values throughout the whaitua.

This should build on existing work by Mana Whenua and include:

- » Developing attributes for understanding whether the values are being provided for with Mana Whenua
- » Designing and implementing a comprehensive monitoring programme to provide information on current state and trends
- » Developing targets for mahinga kai throughout the whaitua
- » Determining any management methods beyond those already recommended in this WIP that are required to achieve the targets.

RECOMMENDATIONS

DEVELOPING MEASURES FOR COMMUNITY PARTICIPATION AND CONNECTION

108 Greater Wellington works with Mana Whenua and communities to develop measures for community participation in and connection to their water bodies – and in doing so build on the kaupapa framework, Te Oranga Wai, being developed by Mana Whenua (as outlined in Te Mahere Wai).

‘Community connection’ is important beyond narrow in-stream measures of environmental outcomes. It spans participation, mental health, spiritual connection, identity, sense of place, story and culture, and physical health needs.

Note: This recommendation should only be undertaken once the kaupapa framework, Te Oranga Wai, being developed by Mana Whenua is complete and only if there are identified gaps in meeting wider community needs.

INFORMING FUTURE MINIMUM WATER FLOW AND ALLOCATION DECISION MAKING

109 Greater Wellington, Mana Whenua and the relevant three waters agency undertake, or continue to undertake, investigations to determine the changes in minimum water flows and allocation required to meet the long-term whaitua vision and Te Mana o te Wai. Investigations are to begin by 2022 and to be completed by 2027.

These investigations should lead to a package of actions and a timetable for implementation. Their scope should be defined in detail and include, but not be limited to:

- » Prioritising catchments based on information requirements, values and pressures, which includes any catchment focal points for small stream investigations beyond the main water supply catchments
- » Mātauranga Māori and quantifying water flows to support Mana Whenua values and outcomes for catchments of interest
- » Testing alternative minimum water flow and allocation regimes alongside a range of municipal water supply infrastructure options
- » Facilitating the implementation of any new allocation regime and detailed assessments of its implications for municipal water supply infrastructure
- » Assessments of the implications of climate change on stream flows
- » Ecosystem function modelling
- » A review and revision of the Waiwhetū aquifer’s management.

RECOMMENDATIONS

BETTER UNDERSTANDING THE HEALTH AND CONNECTIONS OF AQUIFERS

110 Greater Wellington supports and invests in research (to begin by 2023) to better understand our aquifers.

This includes investigations of the:

- » The hydrogeology of aquifers (such as groundwater sources and flow paths, and water availability)
- » Indicators of aquifer ecosystem health, such as stygofauna
- » Stressors on aquifer ecosystem health, such as contamination from *E. coli* and land uses
- » Risks to the sources of human drinking water, including from emerging contaminants.

Note: Ecosystem health encompasses the five elements of the NPS-FM 2020 – water quality, water quantity, habitat, aquatic life and ecological processes.

To support this research, Greater Wellington develops a monitoring network for aquifer ecosystem health by 2023.

IMPROVING OUR UNDERSTANDING OF NUTRIENT SOURCES TO INFORM TOXIC ALGAL MANAGEMENT

111 Greater Wellington initiates (by 2025) and carries out more investigations into the nutrient sources of Te Awa Kairangi/Hutt River, to help in developing the actions needed in future to manage toxic algae.

These investigations may include:

- » Nitrogen coming from tributaries and groundwater in the Pakuratahi and Mangaroa River catchments
- » Nitrogen entering the shallow, unconfined Upper Hutt aquifer
- » The contribution of sediment-bound phosphorus
- » Identifying the sources of fine sediment and its role in toxic algal bloom formation.

The pathway to healthy water

Our ultimate destination is for all waterbodies, from small streams to larger rivers, aquifers, wetlands, lakes, estuaries and coastal waters, to be returned to a state of wai ora (water of life-giving quality) over time. We can't know exactly what the journey there will look like, particularly as some parts are for future generations to lead. But we must keep this destination in our collective sight and chart a pathway of clear steps (or 'waypoints'), which can guide more immediate decisions and tell us whether we are on course for wai ora in each catchment area.

Describing the destination and steps towards healthy waters

The NPS-FM contains a set of nationally consistent measures for water quality that are called 'attributes' (such as *E. coli*), as a measure for health risk from pathogens. In turn, the attributes have states ('attribute states') ranging from A (excellent) to E (poor). In most cases the C attribute state represents an environmental bottom line. Greater Wellington must use these attribute states to set the water-quality target states which lay out the pathway, require action and mark progress.

We believe, however, that these measures are only part of the picture and do not fully express a holistic understanding of 'healthy waterbodies' for kaitiaki and communities. Mana whenua mātauranga considers a wider set of measures which means that, for example, an area measured against the NPS-FM attributes (as in a good or excellent state) may still be considered degraded by Mana Whenua for mahinga kai and mauri outcomes.

We expect that new measures of holistic health are used to broaden the description and waypoints of our journey towards healthy water once they are developed. Te Mahere Wai has more on this, including Te Oranga Wai, an assessment framework approach (currently in development) based in mātauranga Māori. This framework offers wider tools for assessing the NPS-FM's first priority of Te Mana o te Wai.

As these holistic frameworks begin to be used by kaitiaki and communities, the information in the catchment chapters will be able to be enriched. This will improve our understanding of progress towards Te Mana o te Wai and the impact of our recommendations. We also expect it to reveal opportunities to improve outcomes that are not immediately apparent in the information currently available, improving future decision making. Our hope is that each catchment chapter will become a living document used by catchment communities to capture the journey for each awa and plan local actions that complement the recommendations in this WIP.

Whaitua catchment areas

We have identified six broad 'catchment areas' in the whaitua, with sub-catchments within some of these. The six areas follow from the mountains to the sea – ki uta ki tai – and the sub-catchments within reflect where we know there are broad changes in the character and conditions of the stream and our activities in the catchment. These are spatial areas where the opportunities and challenges faced by the individual awa within them are similar, and there is value in people coming together to work out how best to care for those awa.

In reality, people in community and kaitiaki groups work in a much more locally focused way at smaller scales than these. This reflects the personal connections that people feel with particular places. Water is all-connected, so integrated management of our impacts is important – without it, groups can be frustrated by activities upstream or downstream undermining their efforts. We hope that the frameworks we provide for these larger areas will help local groups understand the wider catchment context for their place and how their contributions can best sit alongside the efforts of others. Information and insights at a local scale will also help fill the gaps in our knowledge, and support better planning across each catchment.

The six areas are:

- » Te Awa Kairangi/Hutt Valley and Waiwhetū
- » Ōrongorongo and Wainuiomata
- » South-West Coast, Mākara and Ohariu
- » Korokoro
- » Wellington Urban, Southern Coast and Te Whanganui-a-Tara
- » Parangārehu Lakes.

Each area is described in detail in its own chapter, with a map showing the major sub-catchments, a description of each catchment, the opportunities and challenges we see in implementing our recommendations, and tables showing:

- » The expected stream conditions now, and what is forecast if there is no further intervention beyond current rules and practices
- » The stream conditions we expect will be achieved once our recommendations are implemented
- » Steps that signal where more improvement will still be needed, providing waypoints to guide future decisions on actions towards wai ora.

Achieving wai ora is a long-term journey

Within the chapter of each catchment area are a set of attribute tables that illustrate the planned pathway from current state to wai ora state for each awa, using the water-quality attributes from the NPS-FM.

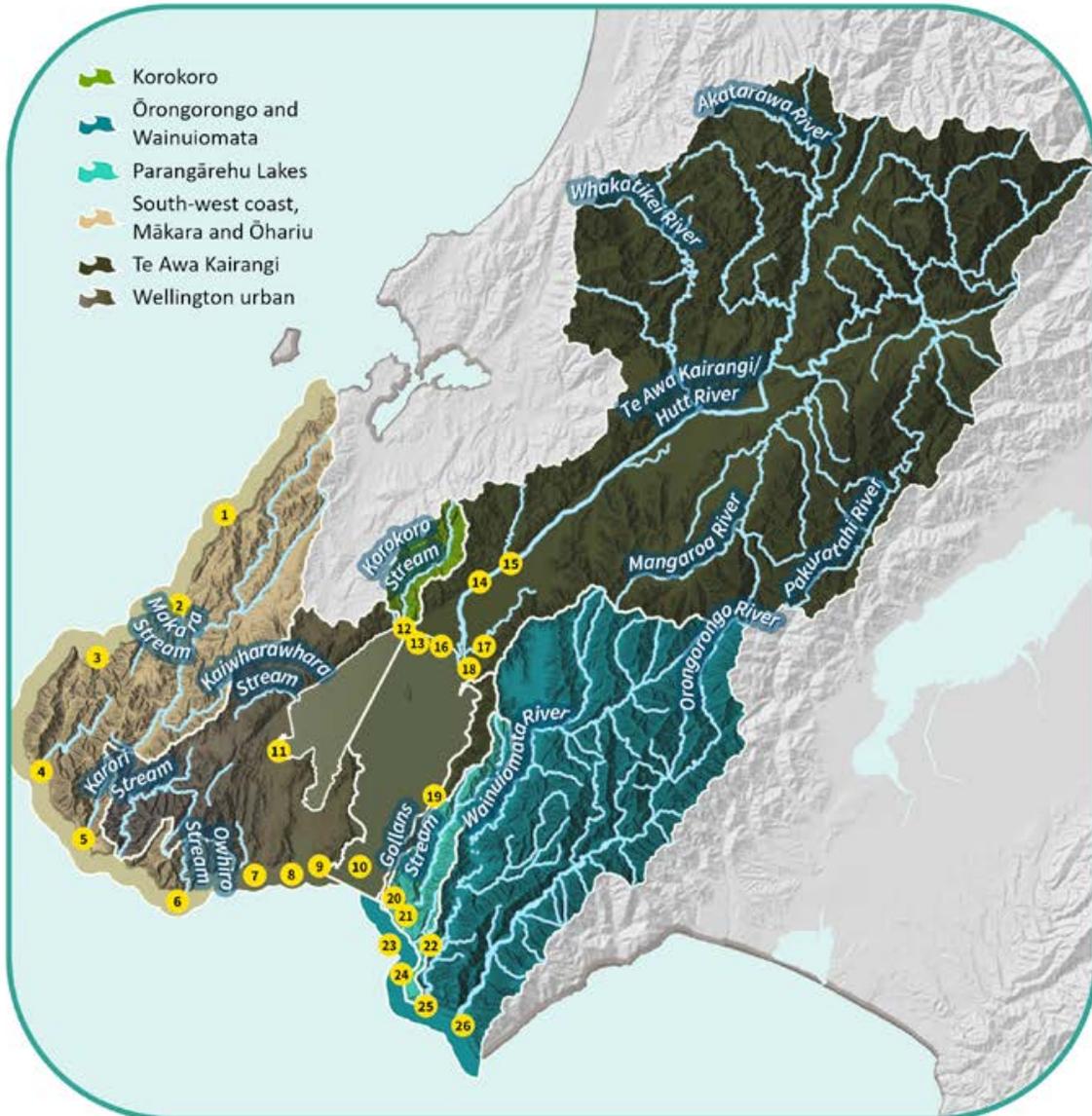
Current and forecast attribute states

The first set of columns in each attribute table shows the current attribute state of streams in each catchment area now, and the forecast state if no further intervention beyond current rules and practices has taken place. It is based on the science advice from our expert panel scenarios, and information provided by other expert advisers, and considers projected climate change impacts and population growth.

While this gives a single current state and forecast trend assessment for a whole area, we know water-quality states vary widely in every sub-catchment and along each reach of stream. Even an urban stream can have excellent mauri, habitat and water quality in its headwaters. It is vital that we access local knowledge to understand all the places where mauri and water quality are good or excellent and ensure they are protected, maintained and improved.

The forecast illustrates that climate change is expected to increase many pressures in the coming decades, with decreases in summer low flows and increases in temperatures, periphyton, sediment and flood disturbance of freshwater habitat in many parts of the whaitua. Without better practices and infrastructure, urban development will exacerbate flood disturbance, habitat modification and contamination in streams and downstream waterbodies. If we continue to manage the environment as we do, we will see ecosystem health and other values continue to deteriorate in many parts of the whaitua. This is not good enough, and does not provide for Te Mana o Te Wai or align with our kawa.

Whaitua te Whanganui-a-Tara



Sites with significant Mana Whenua values

- | | | |
|---|--|--|
| 1 Kie Kie/Kia Kia (Ngutu Kākā pā) (Pipinui Point) | 10 Te Tangihanga-a-Kupe (Barrett Reef) | 19 Korohiwa (East Harbour coast) |
| 2 Ōhariu - Wharehou Bay | 11 Te Aro pā | 20 Parangārehu Lakes, Kohangapiripiri |
| 3 Te Ika a Maru - Ohau Bay | 12 Te Korokoro o Te Mana (Korokoro Stream mouth) | 21 Parangārehu Lakes, Kohangatera |
| 4 Ōterongo Bay | 13 Pito-one pā (Petone foreshore) | 22 Ōkākaho Stream |
| 5 Waiariki Stream mouth and coast | 14 Te Awa Kairangi/Hutt River - Maraenuku pā | 23 Parangārehu (Fitzroy Bay) |
| 6 Te Rimurapa - Pariwhero (Sinclair Head - Red Rocks) | 15 Te Awa Kairangi/Hutt River - Motutawa pā | 24 Baring Head/Ōruapouanui |
| 7 Tapu te Ranga - Ōwhiro - Haewai | 16 Hikoikoi pā, Pitoone (Petone) foreshore | 25 Wainuiomata River mouth and foreshore |
| 8 Te Raekaihau Point reef | 17 Te Awa Kairangi (Hutt River mouth) | 26 Ōrongorongo River mouth |
| 9 Hue te Taka (Wellington south coast) | 18 Waiwhetū Stream – Ōwhiti pā | |

Attachment 3 to Report 24.89

As the current and forecast attribute states highlight, many rivers, streams and fresh and coastal waterbodies are degraded in places and exposed to current pressures and future risks. In places, the national bottom lines for water-quality measures have been exceeded. We must start changing our practices in development, land and water use and realise the committee's vision for all waterbodies.

First steps

The 'first steps' columns show the changes in stream conditions that we expect to see from implementing our recommendations for all the issues we have addressed. The short-term (S) states indicate an intention to hold the line in the face of expected declines, and in doing so sets in motion a need to implement our recommendations immediately. Generational (G) states describe the environmental conditions that are expected to result from the full implementation of our recommendations. They are based on science advice given through our expert panel scenarios and other expert advisors. A generational timeframe is 20-30 years, and achieving the attribute improvement depends on the speed of implementation.

Our recommendations represent a significant shift in practice and commitment. We expect our recommendations to lead to improvements for all catchments, but unfortunately some places may not meet a national bottom line or show an improving state within a generation because of the scale of some of the issues we face. This does not mean reducing our efforts or lowering our ambitions for these places, but we want to see all places reach wai ora, including the most degraded waterways. It is just that they will need the most effort to overcome the effects on their wellbeing of catchment modification and legacy contaminants.

Longer term

While improvements are expected to take a long time to achieve in some places, the scale of the task to repair the damage means we need to start now and continue working towards our destination of wai ora everywhere. The restoration of our estuarine environments is expected to take multiple generations and may require significant improvements in water quality in the upstream catchments. While changes in these environments may be incremental and small, they are highly valued and ecologically significant.

Some of the improvements illustrated in our first steps appear underwhelming because they reflect just how degraded many streams are and how much effort it will take to improve them. We know that these improvements do not reflect what the committee, Mana Whenua and the communities we have engaged with seek to reach. The longer-term column helps illustrate our aspirations and our intention of continuous improvements towards wai ora throughout the whaitua in subsequent generations. We do not know yet what this might take or how long it will take, but we are committed to reviewing and adjusting next steps as we learn more. We must hold to our aspirations and re-express them so that each generation knows we have been guided by high aspirations, and that our legacy to them reflects our best efforts, not a trade-off of their wellbeing for short-term gain.

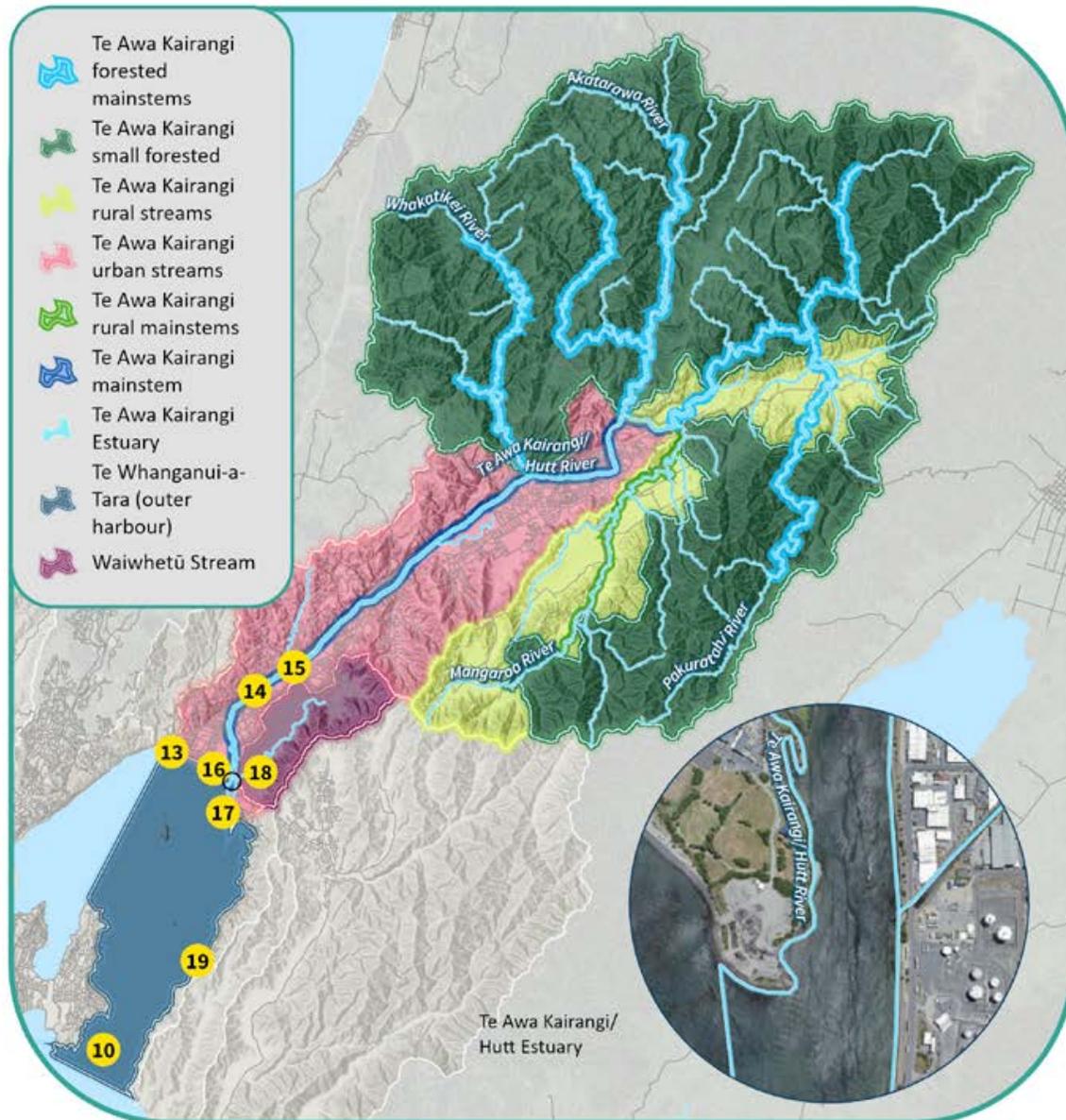
The challenge of meeting human health standards for primary contact

The suitability of water for primary contact (such as swimming), in terms of risks to human health is measured in the NPS-FM using the *E. coli* attribute. The standard set for primary contact sites is very stringent and reflects a very low estimated risk of pathogenic infection. This standard is not currently met in non-forested catchments and some forested catchments across the whaitua.

If we are to improve primary contact safety across the whaitua, we need to have improvements in the state of the overall *E. coli* attribute, which we expect to see as a result of our recommendations. The high standard for primary contact sites is equivalent to the A state for the *E. coli* attribute. *E. coli* itself is not a problem, but it is a strong indicator for the presence of a range of pathogens that are less easy to monitor.

E. coli is entering water via a range of human, livestock and avian sources. Human and livestock sources pose the highest risk to human health, and human faecal contamination in particular must be eliminated because it disrespects Te Mana o te Wai and damages the mauri of water. These priorities are reflected in our recommendations. Our expectation is that the monitoring framework will enable us to track progress in the reduction of human and livestock sources, so that we can be confident that we are making a difference to risks to human health, even if *E. coli* levels from all sources do not yet meet the primary contact standard in the NPS-FM.

Areas in Te Awa Kairangi catchment



Sites of significance for Mana Whenua

- 10. Te Tangihanga-a-Kupe (Barrett Reef)
- 13. Pito-one pā (Petone foreshore)
- 14. Te Awa Kairangi/Hutt River - Maraenuku pā
- 15. Te Awa Kairangi/Hutt River - Motutawa pā
- 16. Hīkoikoi pā, Pitoone (Petone foreshore)
- 17. Te Awa Kairangi (Hutt River mouth)
- 18. Waiwhetū Stream – Ōwhiti pā
- 19. Korohiwa (East Harbour coast)

Attachment 3 to Report 24.89

Catchment context and description

Te Awa Kairangi/Hutt River is the major river system in Te Whanganui-a-Tara and is made up of many unique parts. From the headwaters in the Tararua Ranges, water flows through small, forested streams, before travelling through a number of main stem rivers into the urban environment, and its smaller streams, and then out into Te Whanganui-a-Tara/Wellington Harbour.

The catchment is full of contrasts. The water supply areas and regional parks feature huge areas of native vegetation, while grassland and peatland dominate the Mangaroa Valley on the river's eastern side. The Western Hills are a mix of grassland, exotic forest, native vegetation and urban areas, while the entire length of the valley floor is heavily urbanised. State Highway 2 and the railway shadow the river from Lower Hutt to the base of the Remutaka Range. Te Awa Kairangi/Hutt River enters Te Whanganui-a-Tara/Wellington Harbour via the Hutt Estuary, which is surrounded by a heavily industrialised area at Seaview. The river also aligns with the main Wellington earthquake fault line. Over the centuries, successive earthquakes have raised the Hutt Valley and harbour and the beach has moved southwards.

Early European arrivals identified the Hutt valley as a good site for settlement, and in the 1840s to 1880s the entire floodplain was deforested to make way for development. However, as the population grew and the valley's forest cover reduced, flooding became a major issue. Stop banks and a narrowing of the river channel began to modify Te Awa Kairangi/Hutt River, and that process continues today. These works continue to have significant impacts on mahinga kai species, Mana Whenua sites of significance, and the mauri of the rivers and their tributaries. The Hutt Valley is now the most densely populated floodplain in New Zealand.

Residents in the Hutt Valley love their waterways, as they provide a sense of place and purpose and provide opportunities for recreation and revitalisation.

Te Awa Kairangi is a taonga and awa tupua (treasured ancestral waterbody) for Ngāti Toa Rangatira and Taranaki Whānui. Like all awa (rivers) in the Te Whanganui-a-Tara Whaitua, Te Awa Kairangi is a place for wānanga (traditional learning). Of note are the pā sites, the repō/wetlands and their uses for weaving dyes and building materials. Te Awa Kairangi traditionally sustained a large population and provided access to fish, rich gardening soils, forest birds and numerous wild plant foods.

As the largest river in Te Whanganui-a-Tara Whaitua, Te Awa Kairangi/Hutt River once sustained a large variety of fish species. Upstream of Kaitoke Weir the river is recognised for its outstanding indigenous ecosystem values and continues to support a variety of endemic wildlife, including endangered species (such as banded kōkopu, bluegill bully, giant bully, giant kōkopu, koaro, piharau, longfin tuna, redfin bully and shortfin tuna).

The river is of great importance as it is the largest source of freshwater in the region. Te Awa Kairangi/Hutt River provides most of the drinking water in the metropolitan Wellington area via water abstracted from the river at Kaitoke, groundwater in the Waiwhetū aquifer and artesian water at Petone.

Water takes, discharges and modifications to natural flow have had a significant effect on this awa, and while there is excellent water quality in the headwaters, it is vulnerable throughout its journey mai uta ki tai (from the inland to the sea).

Waiwhetū

Waiwhetū Awa is located at the lower end of the Te Awa Kairangi valley and river mouth. While the lower reach of the Waiwhetū Stream is heavily channelised and polluted, the mid-range of the awa still retains āhua (natural character), and considerable investment in its restoration has brought the community together.

The stream is Ngā Taonga Nui a Kiwa for Ngāti Toa Rangatira and Taranaki Whānui. It traditionally held great significance as it sustained iwi over many centuries, with pā built on the banks (such as the Waiwhetū Pā, and Owhiti Pā). Te Awa Kairangi ngā ngutu awa (the river mouth), the Waiwhetū Stream and the Waiwhetū Estuary are important sources of mahinga kai, and places for te mahi mātaimai for kaimoana.

Te Whanganui-a-Tara (Wellington Harbour)

Te Whanganui-a-Tara (Wellington Harbour) is a Taonga Nui a Kiwa (place of outstanding importance) to Ngāti Toa Rangatira and Taranaki Whānui. The relationship of both iwi with the harbour is synonymous with their mana and identity.

Te Tangihanga-a-Kupe (Barrett's Reef) is but one example of the many places of significance to both Ngāti Toa Rangatira and Taranaki Whānui within Te Whanganui-a-Tara. These places are valued for many reasons, including enabling whānau (family group) to carry out rituals and ceremonies, and also as places where mahinga kai (customary harvest) occurs.

Wellington Harbour is highly valued for its recreational activities, boating, fishing, diving and walking alongside it. Wellington Harbour is home to one of the busiest ports in the country, with thousands of commercial shipping movements in and out of the harbour each year. The Hutt Estuary and Wellington Harbour are impacted by discharges from Te Awa Kairangi (such as stormwater and wastewater discharges).

Main issues in this catchment

Te Awa Kairangi/Hutt River and Waiwhetū are typical of heavily urbanised catchments, with **urban development and encroachment, channelisation, pathogens and stormwater contaminants** degrading their water quality. The need to manage flood risk and the demands of providing sufficient potable water to meet the needs of the growing Wellington Region place pressure on waterways. The aquifer, which is an essential source of the current water supply system, is also at risk of being contaminated by the city built above it.

Wastewater overflows from a storage tank in Silverstream on average six times a year. In 2018 and 2019, this accounted for more than 60 per cent (~195,000m³) of the total recorded wastewater overflows in the whaitua. The contaminants in these overflows present a significant challenge to improving the catchment's water quality. Our recommendations for preventing wastewater overflows and **network leaks**, and eliminating **stormwater contaminants**, are vital to achieving water-quality improvements in the Te Awa Kairangi catchment area.

Low-to-moderate intensity commercial farming and lifestyle properties are valued by our community, but can release **pathogens, nutrients and sediment** into local waterways if not managed well. We need better septic tank monitoring and performance, riparian protection and livestock exclusion from waterways, improvements in hill country management and better localised and catchment group planning, as this will go a long way towards addressing these risks. Improved sediment management during forestry harvesting in the four main tributary catchments will also reduce risks to the health of the river and downstream environments.

The urban environment releases contaminants (such as metals, nutrients, pathogens and hydrocarbons) into Te Awa Kairangi/Hutt River and its tributary streams via the stormwater system. This has many effects on the quality of the water, the health of the aquatic life in the rivers, estuaries and Te Whanganui-a-Tara, and the people who live in the catchment. Shifting the health of Hutt Valley's urban streams will require a fundamental change in the hydrological effects of stormwater and the restoration of stream-bed forms and functions.

Given the **effects of the urban environment on water flows and stormwater**, the adoption of best-practice WSUD for urban redevelopments now and into the future will contribute to improvements in most water-quality attributes.

Attachment 3 to Report 24.89

Urban development and encroachment in the valley has led to the need for flood control works (such as stopbank development and maintenance, river straightening, channel stabilisation and willow planting), to ensure the safety of people, property and infrastructure. It has also changed the form, function and habitat of the riverbed. We need fundamental changes in the hydrological effects of urban stormwater, enhancements in the form and function of stream-beds, and significant habitat restoration.

Many urban streams in Te Awa Kairangi have been modified in ways that stop native fish moving through catchments as they need to at different phases of their life. The advice we have received on **fish passage** remediation is that once all barriers have been identified, remediation should be feasible within 25 to 30 years. Remediation does not equate to removal – passage barriers can often be modified to meet the needs of specific species. When this is achieved, we expect to see the attribute state for fish in rivers to shift to an A state.

A wide range of unpredictable factors affect **toxic algal growth** (including water temperature, flow rates, nutrients and sediment), so addressing the problem is difficult and complex. Although there is no attribute for toxic algae they are a major concern, so we need a bespoke toxic algal bloom action plan that targets all of these factors.

The health of Te Awa Kairangi/Hutt River is affected by water use right across the whaitua, and also in Porirua. Current levels of **water abstraction** to meet drinking-water supply needs are creating issues for ecosystem health and recreation during low-flow periods, primarily in summer. The committee does not believe the current minimum flows provide for the health needs of the awa and Te Mana o te Wai. More responsible and respectful use of water, which enables minimum flows to be raised while also protecting the security of drinking-water supply, is necessary to restore the mauri of the water and will contribute to improvements in ecosystem health attributes.

The **Hutt Estuary and Te Whanganui-a-Tara are affected by discharges** from Te Awa Kairangi/Hutt River, so our recommendations for improvements will also benefit these places.



Pathway from current state to wai ora to guide our journey

Sub- catchment areas	Ecological health												Human health						
	Macroinvertebrates				Periphyton				Fish				E. coli						
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term				
	C	F	S	G		C	F	S	G		C	F	S	G					
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		A	-	A	A		C	-	C	A
Te Awa Kairangi Lower mainstem	B	↓	B	B		C	↓	C	B		A		A	A		D		D	C
Te Awa Kairangi Rural mainstems	C		C	B		C	↓	C	B		B		B	A		D	↑	D	B
Te Awa Kairangi rural streams	C		C	B		C	↓	C	B		B		B	A		D	↑	D	B
Te Awa Kairangi urban streams	C	↓	C	C		C	↓	C	C		B		B	A		E		E	C
Waiwhetū Stream	D	↓	D	C		C	↓	C	C		A		A	A		E		E	C
Te Awa Kairangi/Hutt Estuary •	C	↓↓	C	C		C	↓	C	C		Not applicable					C		C	B
Te Whanganui-a-Tara (outer harbour)•	B	↓	B	B		A		A	A		Not applicable					C		C	B

Sub- catchment areas	Ecological toxicity																			
	Copper				Zinc				Nitrate				Ammonia							
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Lower mainstem	A	↓	A	A		A	↓	A	A		A		A	A		A		A	A	
Te Awa Kairangi Rural mainstems	A		A	A		A		A	A		A		A	A		A		A	A	
Te Awa Kairangi rural streams	A		A	A		A		A	A		A		A	A		A		A	A	
Te Awa Kairangi urban streams	B	↓	B	A		B	↓	B	A		A		A	A		A		A	A	
Waiwhetū Stream	C	↓	C	A		D	↓	D	B		A		A	A		B		B	A	
Te Awa Kairangi/Hutt Estuary •	A	↓	A	A		A	↓	A	A		Not applicable					Not applicable				
Te Whanganui-a-Tara (outer harbour)•	A	↓	A	A		A	↓	A	A		Not applicable					Not applicable				

Sub- catchment areas	Sediment										Phosphorus					Dissolved oxygen						
	Clarity					Deposited					Current		First steps			Longer term	Current		First steps			Longer term
	Current		First steps			Longer term	Current		First steps			Longer term	C	F	S		G	C	F	S	G	
	C	F	S	G	C		F	S	G	C	F		S	G	C	F	S	G				
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A			
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		B	-	B	A		A	-	A	A			
Te Awa Kairangi Lower mainstem	B		B	A		A	-	A	A		A		A	A		A	-	A	A			
Te Awa Kairangi Rural mainstems	D	↑	D	C		A	-	A	A		B	↑	B	A		A	-	A	A			
Te Awa Kairangi rural streams	B	↑	B	A		A	-	A	A		B	↑	B	A		A	-	A	A			
Te Awa Kairangi urban streams	D	↓	D	D		No data					C		C	C		A	-	A	A			
Waiwhetū Stream	A	↓	A	A		Not applicable					D		D	C		B	-	B	A			
Te Awa Kairangi/Hutt Estuary •	Not applicable					B	↓	B	B		Not applicable					Not applicable						
Te Whanganui-a-Tara (outer harbour)•	Not applicable					D	↓	D	D		Not applicable					Not applicable						

Table footnote

Current illustrates the current state assessment (C) and forecast change (F) if we did not change our current management of stressors upon that attribute. A single arrow (↓) indicates that deterioration within an attribute state is expected and a double arrow (↓↓) that an attribute state deterioration is expected.

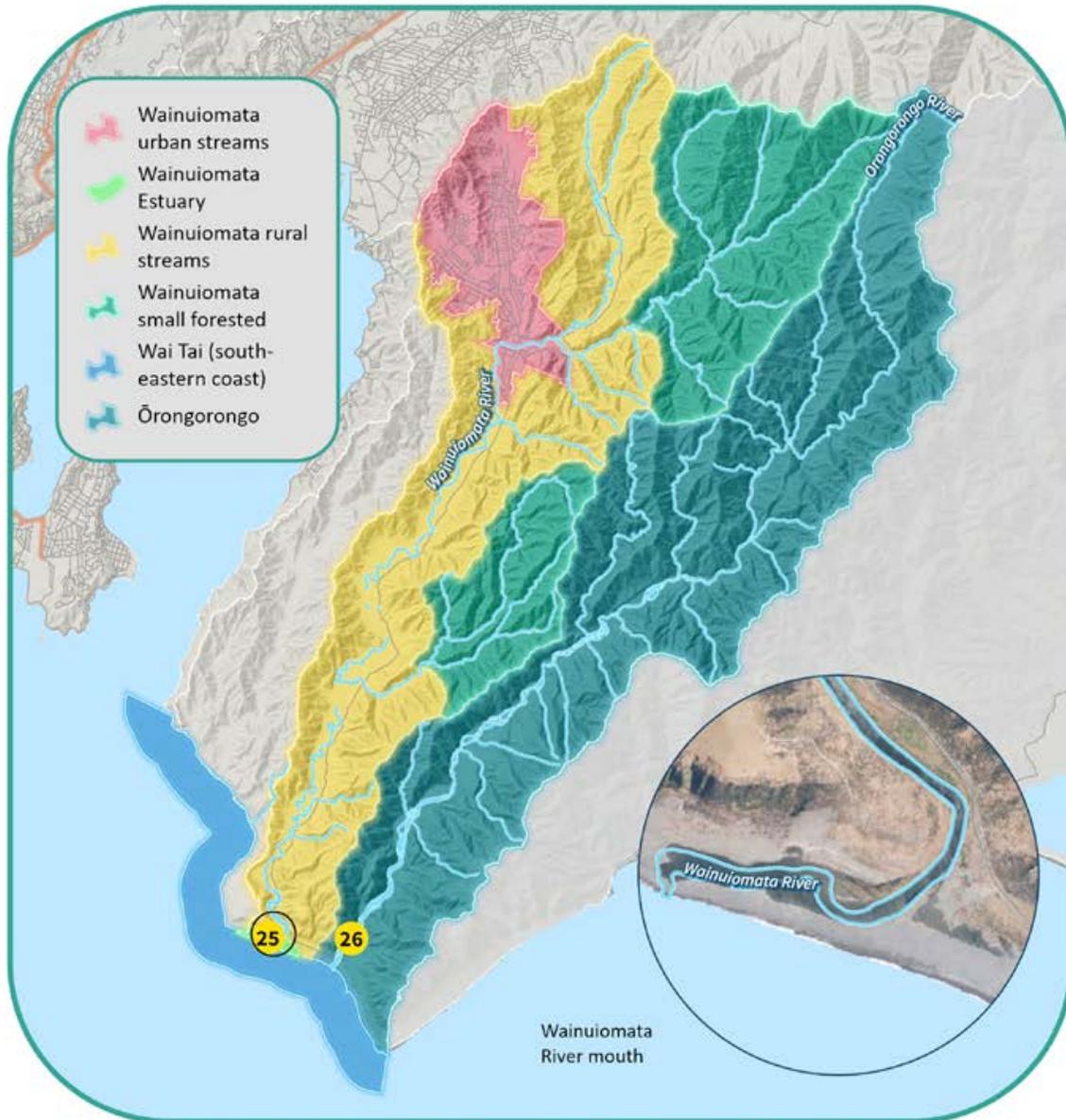
Forecasts have not been made in predominantly forested catchments, or for the deposited sediment and dissolved oxygen attributes, and these are shown as a white box with a dash in the table.

The first steps describe the predicted states that are expected from implementing management solutions to at least maintain the current state in the short term (S) and full implementation of our recommendations in a generation (G). Those that have the same short-term and generation state are expected to have improvement within that attribute state within the generation.

'Longer-term' expresses our direction and intention for continuous improvements desired towards wai ora throughout the whaitua. However, based on current information and approaches we don't currently know what this might require or how long this might take.

*Coastal environments use attributes specific to those environments. However, they are shown under similar river attribute headers: Benthic Macroinvertebrates are presented under MCI, Macroalgae under Periphyton, Enterococci under E. coli, and Muddiness under Deposited Sediment.

Areas in the Ōrongorongo and Wainuiomata catchment



Sites of significance for Mana Whenua

- 25. Wainuiomata River mouth and foreshore
- 26. Ōrongorongo River mouth

Catchment context and description

Ōrongorongo

The Ōrongorongo Awa is located to the east of the Wellington Harbour and runs almost parallel to the Wainuiomata River before entering takutai moana (the sea) on Wellington's south coast. While most of the catchment is covered in native bush (approximately 95 per cent), near the coast there is some low-intensity agriculture (sheep and beef). The catchment also provides important recreational opportunities for the wider Wellington population and is a popular area for tramping.

The awa (river) and surrounding taiao (environment) is valued for its āhua (natural character). The mātāpuna (headwaters) of Te Awa o Ōrongorongo is found in the Pākuratahi Forest and has pristine water quality. The upper reaches of the river contain an abundance of native vegetation, and rongoā (such as tītoki, makomako, manamana, kawakawa and rangiora) can be found.

The Ōrongorongo catchment has steep topography, highly erodible soils that are prone to slips, and is affected by large flood events. There are low numbers of wild animals like goats, pigs and deer.

The Ōrongorongo River and Big Huia Creek are both places in which surface water is abstracted for the community drinking water supply. The awa is also highly valued for its Māori customary and recreational uses.

The Ōrongorongo Swamp is the only montane-alluvial wetland in the region and is considered one of the most pristine wetlands, with exceptional native ecosystem value. The Ōrongorongo awa is braided and the river mouth is wāhi tapu (restricted use) and a site of significance to Taranaki Whānui.

Wainuiomata – Te Wai Nui ō Mata

The Wainuiomata catchment is made up of many unique parts. Te kuinga o te awa (the source of the river) is the Remutaka Ranges. The water flows through a number of small, forested streams before it passes through the suburb of Wainuiomata. In developed parts of the catchment, the river has been heavily modified and engineered to reduce flooding. The mainstem, and a number of smaller rural streams, then flow through primarily pastoral land before entering the ocean at Wellington's south coast, east of the harbour entrance. The awa (river) and its surrounding taiao (environment) is valued for its āhua (natural character).

The small, forested streams of the Wainuiomata and its tributaries (such as Catchpool Stream) are wai tapu, which are sacred places where rituals and ceremonies were practised by Mana Whenua. The water is Wai Mātua o Tūāpapa (virgin water) and tohi (baptism) and cultural immersion take place here. There are numerous Āku Waiheke (small streams) in the upper reaches of the whaitua with unique values and mana that should be recognised and protected.

The Wainuiomata River and George Creek are Wai Māori (fresh drinking-water sources), both being places in which surface water is abstracted for community drinking-water supply.

Many taonga species precious to Mana Whenua have been found in the mātāpuna (headwaters) of the awa, and in the mainstem, above Black Creek. The Wainuiomata River is also valued for its Māori customary and recreational uses. It supports a variety of activities, such as te hī ika (line fishing), te hao ika (netting) te hopu tuna (taking eels) and kaukau (swimming).

The river finishes its journey in the East Harbour Regional Park where it discharges into the Cook Strait via the Wainuiomata Estuary. The Wainuiomata River mouth and foreshore are sites of significance to Taranaki Whānui, as well as key mahinga kai sites. The Wainuiomata Estuary contains habitat for, and is home to, many native fish migratory species and native birds that are taonga to Mana Whenua. The estuary is one of less than half a dozen sites along the South Wellington coastline that supports a breeding population of Tuturuwhatu (banded dotterels). Inanga spawning habitats are found in vegetation near river mouth.

Main issues in this catchment

Because the Ōrongorongo catchment is dominated by native forest from the headwaters nearly all the way to the sea, it is in excellent state with few pressures affecting its health. However, pastoral farming in the lower catchment may be having some effects, and the impacts of the current water abstraction levels require further investigation.

The Wainuiomata catchment, on the other hand, has a diverse range of land uses resulting in a range of water-quality issues and challenges. In urban areas, water is degraded due to **encroachment, channelisation, habitat removal, pathogens and stormwater contaminants**. Ongoing management of flood risks while restoring the mana to waterbodies (such as Black Creek) is going to be a major challenge. In rural areas, macroinvertebrate and fish habitats need to be improved through riparian vegetation planting and stock exclusion. Also, the demand for potable water needs to be met without diminishing Te Mana o Te Wai.

Over 40 per cent of the **wastewater** network in urban Wainuiomata is in a poor state and on average more than 20 **wastewater overflow** events occur every year. **Faecal contamination from rural and urban sources** has resulted in swimming holes (such as at Richard Prouse Park) no longer being safe for human contact, even in dry weather. This is a major concern, as people still visit and swim in these areas.

Our recommendations to address pathogens, particularly human sources from our wastewater network and septic tanks, are expected to improve the attribute state for *E. coli* in streams within a generation.

The low-to-moderate intensity commercial farming and lifestyle properties are valued by our community, but can release **pathogens, nutrients and sediment** into local waterways if not managed well. Our recommendations for improved septic tank monitoring and performance, riparian protection and livestock exclusion from waterways, improvements in hill country management, and better localised and catchment group planning will go a long way towards addressing these risks.

Urbanisation of Wainuiomata has seen contaminants (such as metals, nutrients, pathogens and hydrocarbons) appear in the small streams that feed into the Wainuiomata River via the stormwater and wastewater networks. Repairing the wastewater network and adopting best-practice WSUD for urban redevelopments now and into the future will reduce the sources of **stormwater contaminants** and go a long way to improving the catchment's overall water quality. Implementation of our recommendations will ensure that future urban intensification does not cause further degradation.

Urban development and encroachment in Wainuiomata has seen the need for flood control works to ensure the safety of people, property and infrastructure. While necessary, these works have **altered the mauri of waterbodies by changing their form, functions and habitat**.

Black Creek runs through a heavily populated area of Wainuiomata and has the potential to provide for a range of community values. However, it acts more like a stormwater drain than a functioning stream and will require significant effort to restore its mana and mauri. A key first step is to give it back its name and to seek opportunities for habitat restoration.

The Wainuiomata and Ōrongorongo catchments are major sources of potable water. The priority for these catchments is to better understand the potential **effects of water abstraction on water quality** and Te Mana o Te Wai, especially during periods of low flow. It has been reported that sections of the Ōrongorongo River run dry during summer, and it is unclear whether water abstraction in the upper section is a contributor.

Journey from current state to wai ora

Sub- catchment areas	Ecological health															Human health				
	Macroinvertebrates					Periphyton					Fish					E. coli				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Ōrongorongo	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Wainuiomata small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Wainuiomata urban steams	D	↓	D	D		C	↓	C	C		A		A	A		E		E	C	
Wainuiomata rural steams	C	↓	C	B		C	↓	C	C		A		A	A		D		D	C	
Wainuiomata Estuary*	B		B	B		A	↓	A	A		Not applicable					B		B	B	
Wai Tai (south-eastern coast)*	A		A	A		A		A	A		Not applicable					A		A	A	

Sub- catchment areas	Ecological toxicity																			
	Copper				Zinc				Nitrate				Ammonia							
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Ōrongorongo	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Wainuiomata small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Wainuiomata urban steams	B	↓↓	B	B		B	↓↓	B	A		A		A	A		B		B	A	
Wainuiomata rural steams	A	↓	A	A		A	↓	A	A		A		A	A		A		A	A	
Wainuiomata Estuary*	A	↓	A	A		A	↓	A	A		Not applicable					Not applicable				
Wai Tai (south-eastern coast)*	A		A	A		A		A	A		Not applicable					Not applicable				

Sub- catchment areas	Sediment										Phosphorus					Dissolved oxygen				
	Clarity					Deposited					Phosphorus					Dissolved oxygen				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Ōrongorongo	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Wainuiomata small forested	A	-	A	A		A	-	A	A		C	-	C	C		A	-	A	A	
Wainuiomata urban steams	D	↓	D	C		A	-	A	A		C		C	B		A	-	A	A	
Wainuiomata rural steams	D	↓	D	C		A	-	A	A		C		C	B		A	-	A	A	
Wainuiomata Estuary*	Not applicable					A	↓	A	A		Not applicable					Not applicable				
Wai Tai (south-eastern coast)*	Not applicable					A		A	A		Not applicable					Not applicable				

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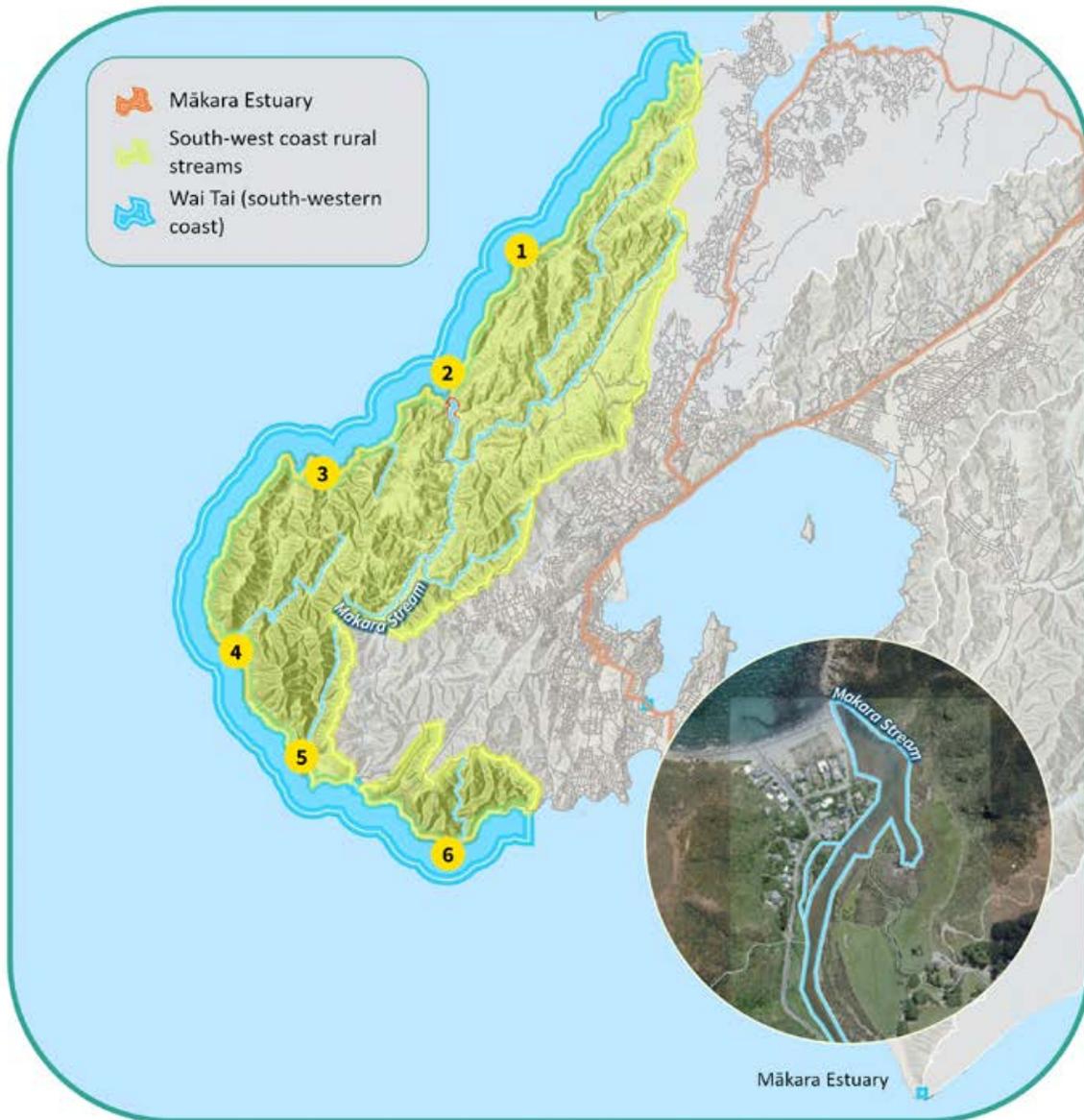
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Areas in the South-west coast, Mākara and Ōhariu catchment



Sites of significance for Mana Whenua

- | | |
|--|--|
| ● 1. Kie Kie/Kia Kia (Ngutu Kākā pā) (Pipinui Point) | ● 4. Ōterongo Bay |
| ● 2. Ōhariu - Wharehou Bay | ● 5. Waiariki Stream mouth and coast |
| ● 3. Te Ika a Maru - Ohau Bay | ● 6. Te Rimurapa - Pariwhero (Sinclair Head - Red Rocks) |

Catchment context and description

The south-west coastal catchments are characterised by steep, scrub and pasture-covered hills above valleys that are generally aligned with fault lines. The streams in these valleys run to the Cook Strait in the south and toward the Tasman Sea in the west. Much of the land was covered in dense podocarp forest until clearance for farming in the late 1800s. Gold prospecting in the mid-to-late 1800s led to a boom in population growth in the western area. Mākara Beach was home to a small fishing community in the early 1900s and is now a popular spot for launching small fishing boats and diving. Its coastal dunes were removed during World War II, modifying the stream mouth.

In more recent years, many small 'lifestyle blocks' have been established in Ōhāriu and Mākara, generally along the waterways and each with its own septic system. Two windfarms built in the late 2000s cover a significant area, with sediment management being a focus at the time of construction. Small tributaries provide drinking water for a number of households.

Much of the eastern and coastal areas have reverted to scrub or native bush, and the north-west area has been largely maintained in pasture. The modified environment means that storm runoff moves more quickly down the catchment, which in turn has increased downstream flood risk and streambank erosion.

There are many āku waiheke (small streams) and head water mātāpuna (springs) in the whaitua that flow into the Mākara Stream. These have unique values that must be recognised and protected. The stream and its corridor support many mahinga kai plants like harakeke, raupō, watercress, puha and fernroot, and plants for weaving and rongoā (healing).

The Mākara Estuary and river mouth is recognised as a significant natural wetland and is the only remaining salt marsh estuary on the Wellington Peninsula. It is an important refuge for feeding and nesting birds (such as pied shag, red-billed gull, white-fronted tern, black shag, pied stilt, and variable oystercatcher). The salt marsh also provides seasonal or core habitat to threatened indigenous fish species (such as longfin eel, giant kōkopu, kōaro, inanga, redfin bully, bluegill bully and piharau). The Mākara Estuary has silted up due to high sediment loads coming from further up the catchment.

While the most noteworthy Mana Whenua values in this area are mahinga kai and kaimoana, the estuary is also recognised for other special values (such as waka, healing from the ocean, and the cleansing qualities of the wind). Ngāti Toa Rangatira identify the southwest coast as a very important mahinga mataitai (customary seafood gathering area) and wāhi kōrero I tuku iho (intergenerational knowledge transfer area). Ohāriu Pā is found on Mākara Beach, and is of significance to Ngāti Tama. Similarly, the wider Wellington community highly values the kai moana provided by the surrounding South Coast area.

The local communities include many small properties and a handful of large sheep/beef farms (some residents having multigenerational connections to the area), most with additional sources of income alongside farming. Farming is valued by the community and is very low intensity, largely due to the catchment's topography and climate (with most land classed as LUC 6+). There are only small pockets of production forestry. Several landowners and local community groups are working to improve water quality in the area.

The area also supports recreational opportunities for the wider Wellington community, with mountain biking, walking and four-wheel drive tracks and venues for functions. Intensive pest control is currently underway, in order to release kiwi in the area within the next couple of years.

Aside from the Mākara Estuary, all streams in the area discharge straight to a very dynamic coastal environment that is thought to quickly dissipate most contaminants, particularly on the South Coast.

Main issues in this catchment

The south-west coastal catchments and streams are subject to several environmental pressures and are in a deteriorated or fair state. **Sediment loss** is a significant issue in several streams in this area. The historical clearance of steep land for farming has left the more vulnerable land unstable and prone to erosion. Alongside this, a **lack of stream-bank vegetation and livestock exclusion** from waterways means stream margins are more prone to erosion during periods of high rainfall and **habitat for aquatic life and ecosystem health is reduced**.

Faecal contamination and high pathogen concentrations are issues in both dry and wet weather for the catchments, and monitoring shows the Mākara Stream has levels considered unsuitable for human contact. The main sources of faecal contamination are likely to be ruminants and wildfowl, with septic tanks and horses also potential sources. Reducing *E. coli* in this mostly rural catchment will require additional, locally specific diagnostic assessments to identify the sources of dry and wet weather exceedances, particularly dry weather contamination.

Because of the steep terrain, for the most part the 2020 stock exclusion regulations do not apply, meaning that achieving improvements for *E. coli* will require additional actions. The vulnerability of small streams to discharges and damage from stock and septic tanks is an ongoing risk. Their relatively small size makes them disproportionately vulnerable to *E. coli* and sedimentation caused by cattle grazing, plantation forestry and water takes.

These catchments are priority areas for dedicated land management support and coordinated catchment planning. The focus needs to be on identifying critical source areas for contaminants, reducing stock access to waterways, establishing riparian vegetation, the retirement or reforestation of some areas, and good maintenance of household septic systems.

We have heard from Mana Whenua that whānau (family group) could traditionally swim, and harvest and consume kaimoana like tuna, mullet, and pipis, without becoming māiuiui (unwell). Areas where paua once lived have now completely disappeared, except in Ohau North where there are lots of small, undersized paua. There is also immense pressure on coastal resourcing from poaching.

Mākara Estuary and the coastal waters are highly valued areas and the local community has already made substantial efforts to restore them. Because of the slow response rate to stressors, improvement will take time, but can be achieved through mitigations further up the catchment. Although naturally low in diversity, Mākara Estuary supports an even sparser benthic macroinvertebrate community than expected because of the impact of **muds and sediment** in particular. Reducing sediment inputs through improved practices up the catchment, and better flushing over generations, will lead to small improvements.

Journey from current state to wai ora

Sub- catchment areas	Ecological health												Human health							
	Macroinvertebrates					Periphyton					Fish					E. coli				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current	First steps		Longer term	
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
South-west coast rural steams	C	↓	C	C		C		C	C		A	A	A			E		E	D	
Mākara Estuary*	D		D	D		C		C	C		Not applicable					C		C	C	
Wai Tai (south-western coast)*	A		A	A		A		A	A		Not applicable					A		A	A	

Sub- catchment areas	Ecological toxicity																			
	Copper					Zinc					Nitrate					Ammonia				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current	First steps		Longer term	
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
South-west coast rural steams	A		A	A		A		A	A		A		A	A		A		A	A	
Mākara Estuary*	A	↓	A	A		A	↓	A	A		Not applicable					Not applicable				
Wai Tai (south-western coast)*	A		A	A		A		A	A		Not applicable					Not applicable				

Sub- catchment areas	Sediment										Phosphorous					Dissolved oxygen				
	Clarity					Deposited					Phosphorous					Dissolved oxygen				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
South-west coast rural steams	D	↓	D	C		D	-	D	C		D	↓	D	C		A	-	A	A	
Mākara Estuary*	Not applicable					C	↓	C	B		Not applicable					Not applicable				
Wai Tai (south-western coast)*	Not applicable					A	↓	A	A		Not applicable					Not applicable				

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‘Longer-term’ expresses our direction and intention for continuous improvements desired towards wai ora throughout the waitua. However, based on current information and approaches we don’t currently know what this might require or how long this might take.

*Coastal environments use attributes specific to those environments. However, they are shown under similar river attribute headers: Benthic Macroinvertebrates are presented under MCI, Macroalgae under Periphyton, Enterococci under E. coli, and Muddiness under Deposited Sediment.

Areas in the Korokoro catchment



Sites of significance for Mana Whenua

- 12. Te Korokoro o Te Mana (Korokoro Stream mouth)

Catchment context and description

The Korokoro Stream originates in Belmont Park and drains approximately 8km to the Wellington Harbour, under State Highway 2 and through a small estuary. The headwaters are primarily forested scrublands and indigenous forest with some rural land use activities and urban development along the foothills in the suburb of Korokoro.

Retaining much of its original āhua (natural character), Te Korokoro o Te Mana is a Taonga for Taranaki Whānui, and it is also protected as a site of significance in the PNRP.

Korokoro Stream is recognised as an exemplar catchment in line with its cultural status as Te Korokoro o Te Ika a Maui (the throat of the fish of Maui). This is reflected in the gurgling sounds made by the stream.

The catchment has a long history of industrial and municipal use. There are two old dams along the Korokoro Stream that are more than 100 years old. One was used for the local community's municipal supply, the other by a wool mill. These original municipal and industrial uses are now gone. The catchment is mainly used for recreation by locals. It is mostly contained within Belmont Regional Park, which contains popular and accessible walking tracks, and is also known for its trout fishery.

Te Mātāpuna of the Korokoro Stream are still pristine and have provided Taranaki Whānui with a vital supply of high-quality drinking water for the Pito-one Pā for many generations. The stream is of exceptional value to iwi due to the abundant spiritual sustenance it provides. Whānau (family group), hapū and iwi carry out rituals, collect rongoā, and continue to share stories of its healing practices and teachings. It is also mahinga kai (food gathering area) for the hapū of Taranaki Whānui and Te Ātiawa, particularly renowned for whitebait, longfin tuna and shortfin tuna.

The Pito-one Pā / Te Tatau o te Po on the Petone foreshore is a significant wāhi ahurea (historical site) positioned near the mouth of Te Korokoro o Te Mana.

Mana Whenua expect that the unique and special values associated with Te Korokoro o Te Mana will be enhanced through the recognition of the persona of the awa and restored through active management.

Main issues in this catchment

Much of the upper Korokoro catchment has regenerating forest cover, resulting in a good current state for most of the freshwater ecological attributes. However, where pastoral grazing and urban development is occurring, water quality has degraded and will continue to do so without interventions.

Low-to-moderate intensity pastoral land use occurs in the upper Korokoro catchment and is a source of **sediment and nutrients** to streams and headwater gullies. This pressure will reduce over time as Belmont Regional Park transitions out of pastoral land use and farm and catchment planning becomes common practice. Sedimentation from plantation forestry harvest needs to be managed well to reduce this pressure.

Urban development is the biggest risk to Korokoro water quality. If not managed appropriately to our recommendations, the Korokoro catchment could quickly be affected by **stormwater contamination, hydrological changes and channel modifications** associated with urbanisation. We recommend the adoption of best-practice WSUD for urban redevelopments now and into the future.

Modification, channelisation and de-vegetation of the Korokoro Estuary and lower stream reaches has reduced overall stream health in this area, including the total removal of inanga spawning habitat. Locally specific assessments and catchment planning with Mana Whenua and communities will identify the best places for habitat restoration in some urban and rural sub-catchments.

Journey from current state to wai ora

Sub- catchment areas	Ecological health												Human health			
	Macroinvertebrates					Periphyton					Fish			E. coli		
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	
	C	F	S	G		C	F	S	G		C	F	S	G		
Korokoro Steam	B	↓	B	A	B	F	B	B	A	A	A	C	F	S	G	
Korokoro Estuary•	C	↓↓	C	C	B	F	B	B	Not applicable			C	F	S	G	

Sub- catchment areas	Ecological toxicity															
	Copper				Zinc				Nitrate				Ammonia			
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	
	C	F	S	G		C	F	S	G		C	F	S	G		
Korokoro Steam	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Korokoro Estuary•	A	↓	A	A	A	↓	A	A	Not applicable				Not applicable			

Sub- catchment areas	Sediment						Phosphorus				Dissolved oxygen					
	Clarity			Deposited			Phosphorus				Dissolved oxygen					
	Current		Longer term	Current		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F		S	G		C	F	S	G		C	F	S	G	
Korokoro Steam	A	↓	A	A	A	-	A	A	B	F	B	A	A	-	A	A
Korokoro Estuary•	Not applicable			A	↓	A	A	Not applicable				Not applicable				

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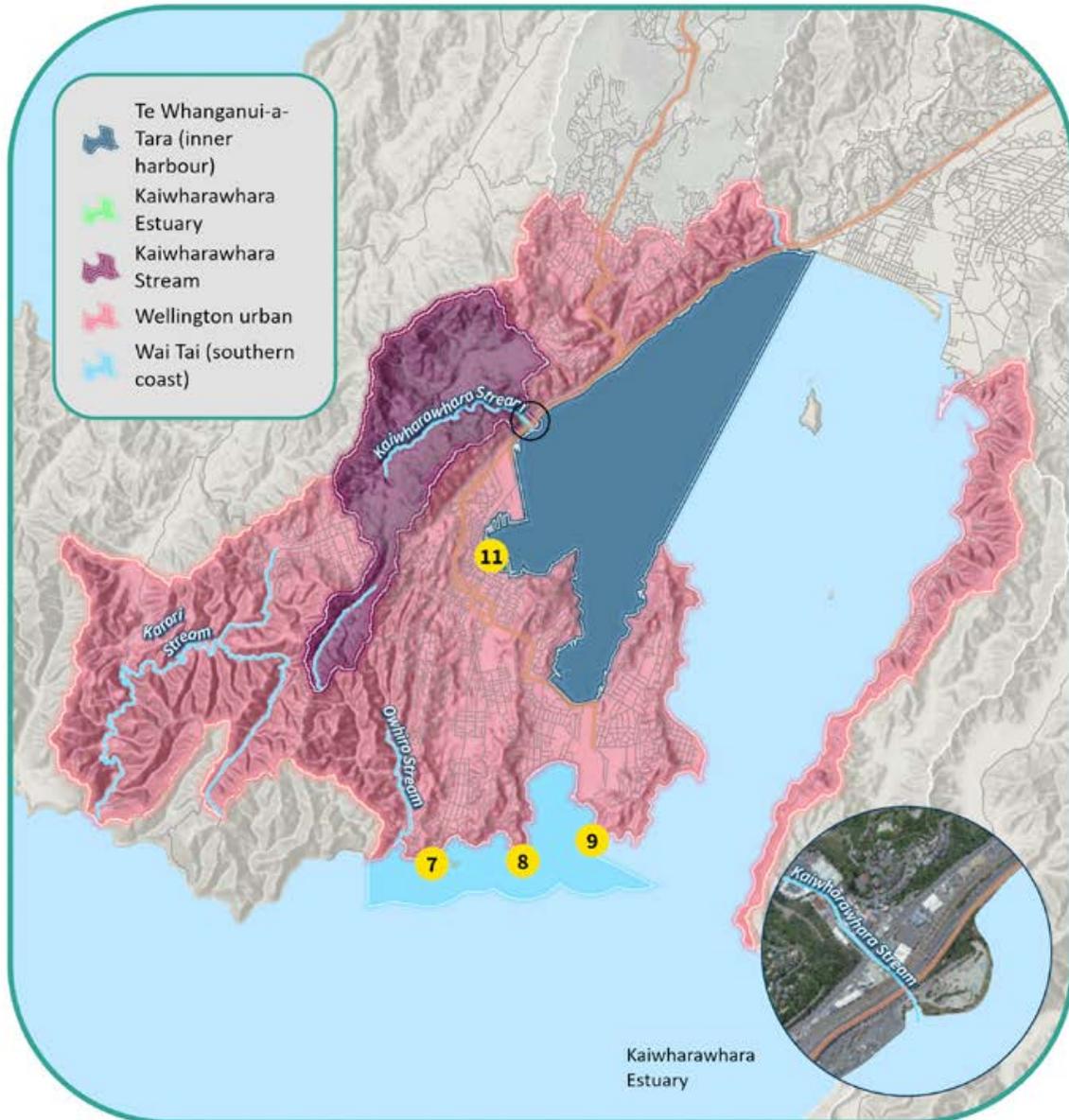
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Areas in the Wellington urban catchment



Sites of significance for Mana Whenua

- 7. Tapu te Ranga - Owhiro - Haewai
- 8. Te Raekaihau Point reef
- 9. Hue te Taka (Wellington south coast)
- 11. Te Aro pā

Attachment 3 to Report 24.89

Catchment context and description

The main streams in the Wellington urban area are the Kaiwharawhara, Karori and Ōwhiro Streams, which flow to the Whanganui-a-Tara inner harbour or out to the South Coast and the Cook Strait. Wellington City and its surrounds are mainly urban areas with some indigenous vegetation on the city fringes, town belt and in the headwaters of streams. Some rural land use activities are undertaken in tributaries of the Karori Stream.

Kaiwharawhara is the largest stream system in Wellington City and one of the few remaining streams that has a relatively natural estuary mouth into the harbour. The stream runs around the west of Te Ahumairangi (Tinakori Hill), the maunga (mountain) that surrounds and sustains the city of Wellington.

Te Manga o Kaiwharawhara and its environs are considered significant to both the history and continued wellbeing of the Te Ātiawa and Taranaki Whānui people. The stream is also a site of wāhi whakarite (preparing for an important activity/event) and was used for rituals (such as planting at Puanga/Matariki).

As the population of Wellington has grown over time, the urban footprint has expanded and densified. The proximity and accessibility to our homes means these urban streams are highly valued, and have great potential for people to reconnect to their local waterways and get involved in their improvement.

The Kaiwharawhara catchment is the gateway for people entering and exiting the city with the major transport corridors of State Highway 1 and the North Island main railway running through it. The approach to urban development and transportation has seen many streams piped, or in concrete channels and parts of the inner harbour reclaimed, for the central business district and Port.

Despite the surrounding environment being heavily urbanised and the stream experiencing pressures from urban land uses (such as from stormwater), the Kaiwharawhara Stream has high ecological and cultural values. Kia Mauri/mouriora te Kaiwharawhara (Sanctuary to Sea) is a project funded to continue the creation and restoration of indigenous fish habitat, which includes spawning sites. Monitoring is also carried out at Zealandia where te mātāpuna are found.

Āku Waiheke (the many small streams) of Wellington have been largely lost through piping, contamination and infill. This is a significant issue for Mana Whenua who retain aspirations that their streams are wherever possible daylighted and their mana and mauri (wellbeing) restored.

The Kaiwharawhara Pā was located near the stream mouth and remains a significant site for Taranaki Whānui forming the original gateway into Wellington.

The Cook Strait also faces considerable pressure from stormwater and wastewater discharges from these areas. This is a critical issue for Mana Whenua due to the impacts these discharges are having on mahinga kai, cultural and recreational use, and there is currently very little data or understanding of their effects.

Main issues in this catchment

Wellington City streams suffer from a wide range of stressors and are generally in a poor state. Most **streams in the city have been heavily modified or piped**, with only small (mainly headwater) reaches still open to daylight. We risk losing connection with our urban streams and the values they provide if the current trend of reclamation and encroachment continues, while the streams themselves lose their mauri and life-supporting capacity.

Around one-third of Wellington City's **wastewater network is in a poor state** (i.e., broken and leaking) and in need of repair, and **wastewater overflows** are a common occurrence. Faecal contamination of the accessible streams (such as Kaiwharawhara, Ōwhiro and Karori) means they are not safe for human contact, even in dry weather. More recently, small 'lifestyle blocks' have appeared in some of the main valleys (such as South Karori, Long Gully and towards Mākara), generally along the waterways and each with its own septic system.

Our recommendations target the improvement in *E. coli* to achieve the C state in a generation and we believe the journey of further improvement must continue from there. This involves institutions and residents taking responsibility, fixing all **cross-connected storm and wastewater networks** and eliminating overflows to a rare occurrence, as well as the picking up of dog faeces and septic tank management.

Landfills (historic and current), as well as other **contaminated sites**, are also leaching toxicants into streams and this needs to be addressed.

Reducing sediment and improving the state of ecosystem health in Wellington's urban streams will require fundamental changes in the **hydrological effects of urban stormwater**, enhancements in the form and function of stream-beds, and significant habitat restoration. Projects of this scale go beyond our general recommendations and require locally specific diagnostic assessments and integrated catchment planning. It would also have implications for current land use, as the restoration of streams would involve rebuilding their habitats and meandering forms.

The Wellington City catchments that have been identified for **intensification and infill housing** will need careful management not to further exacerbate the pressure on our already **stressed urban streams**. We recommend the adoption of best-practice WSUD for urban redevelopments now and into the future.

Urban development, encroachment and catchment imperviousness (these increase peak flow rates during rainfall) have resulted in the need for flood control works, including river straightening, channel stabilisation and vegetation removal to ensure the safety of people, property and infrastructure. But this has also **changed the form, function and habitat of streams** in these urban catchments. Many streams are affected by **lack of space, no vegetation for shading, abnormal flows from stormwater, contaminants and straightening**. Some streams do have shading and space, but are still affected by abnormal flows, contaminants and flooding defences.

Many urban streams have been modified in ways that provide **barriers to fish** from moving through catchments as they need to at different phases of their life. The advice we have received on fish passage remediation is that once all barriers have been identified, remediation should be feasible within 25 to 30 years. Remediation does not equate to removal – passage barriers can often be modified to meet the needs of specific species. When this is achieved, we expect to see this attribute state shift to an A state.

The **channelisation of the Kaiwharawhara Estuary** means its natural processes no longer operate as they should. Contaminants are flushed through the concrete channel and it has an 'artificial' A state for most 'water-quality' parameters. An unusual challenge associated with restoring the habitat and natural processes in Kaiwharawhara Estuary is that while ecosystem health and cultural values may increase, other parameters may reduce as flows slow down through the estuary and contaminants can accumulate. Catchment actions to reduce the inputs may help, but it's uncertain if this would be sufficient to maintain an A state for these parameters.

In **Te Whanganui-a-Tara harbour**, although current state assessments reflect the whole inner harbour, there are **hotspot sites for metals contamination** in benthic sediment, particularly around the Queens Wharf and Port areas and stormwater outfalls. Our recommendations will help prevent further degradation.

Depositional basins will always have naturally high muddiness and it is difficult to improve significantly, although improvements within the D state (A state for Evan's Bay) may occur over time.

Benthic macroinvertebrates will likely improve within the existing state as these are associated with legacy effects to sediment and metals. This gradual shift will take multiple generations for the worst sites and potentially shorter timeframes at more resilient sites.

Enterococci in the inner harbour sites should improve to a B state with improvements to infrastructure.

The open coastal waters are in a good state, although sediment inputs and faecal contamination after rainfall may continue to impact recreation at Karori Stream and Ōwhiro Bay, and the collection of mahinga kai at these sites is likely to continue to be affected.

This stretch of coastline which contains the Taputeranga Marine Reserve may also be affected by poorly understood freshwater impacts, including emerging contaminants.

Journey from current state to wai ora

Sub- catchment areas	Ecological health												Human health					
	Macroinvertebrates				Periphyton				Fish				E. coli					
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps		Longer term	
	C	F	S	G	C	F	S	G	C	F	S	G	C	F	S	G		
Kaiwharawhara Stream	C	↓	C	C	C	↓	C	C	A	A	A	A	E	↓	E	C		
Kaiwharawhara Estuary*	C	↓	C	C	A	A	A	A	Not applicable				C	↓	C	B		
Wellington urban	C	↓	C	C	C	↓	C	C	A	A	A	A	E	↓	E	C		
Wai Tai (southern coast)*	B	↓	B	B	A	A	A	A	Not applicable				B	↓	B	B		
Te Whanganui-a-Tara (inner harbour)*	B	↓↓	B	B	A	A	A	A	Not applicable				C	↓	C	B		

Sub- catchment areas	Ecological toxicity																	
	Copper				Zinc				Nitrate				Ammonia					
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps		Longer term	
	C	F	S	G	C	F	S	G	C	F	S	G	C	F	S	G		
Kaiwharawhara Stream	C	↓↓	C	B	B	↓↓	B	A	B	B	B	B	B	↓	B	B		
Kaiwharawhara Estuary*	A	A	A	A	A	A	A	A	Not applicable				Not applicable					
Wellington urban	D	↓	D	C	B	↓↓	B	A	B	B	B	B	B	↓	B	B		
Wai Tai (southern coast)*	A	↓↓	A	A	A	A	A	A	Not applicable				Not applicable					
Te Whanganui-a-Tara (inner harbour)*	A	↓↓	A	A	B	↓↓	B	B	Not applicable				Not applicable					

Sub- catchment areas	Sediment						Phosphorus				Dissolved oxygen							
	Clarity			Deposited			Phosphorus				Dissolved oxygen							
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps		Longer term	
	C	F	S	G	C	F	S	G	C	F	S	G	C	F	S	G		
Kaiwharawhara Stream	B	↓	B	A	A	-	A	A	D	↓	D	C	A	-	A	A		
Kaiwharawhara Estuary*	Not applicable			A	A	A	A	Not applicable				Not applicable						
Wellington urban	D	↓	D	C	B	-	B	B	D	↓	D	D	A	-	A	A		
Wai Tai (southern coast)*	Not applicable			A	↓	A	A	Not applicable				Not applicable						
Te Whanganui-a-Tara (inner harbour)*	Not applicable			D	↓	D	D	Not applicable				Not applicable						

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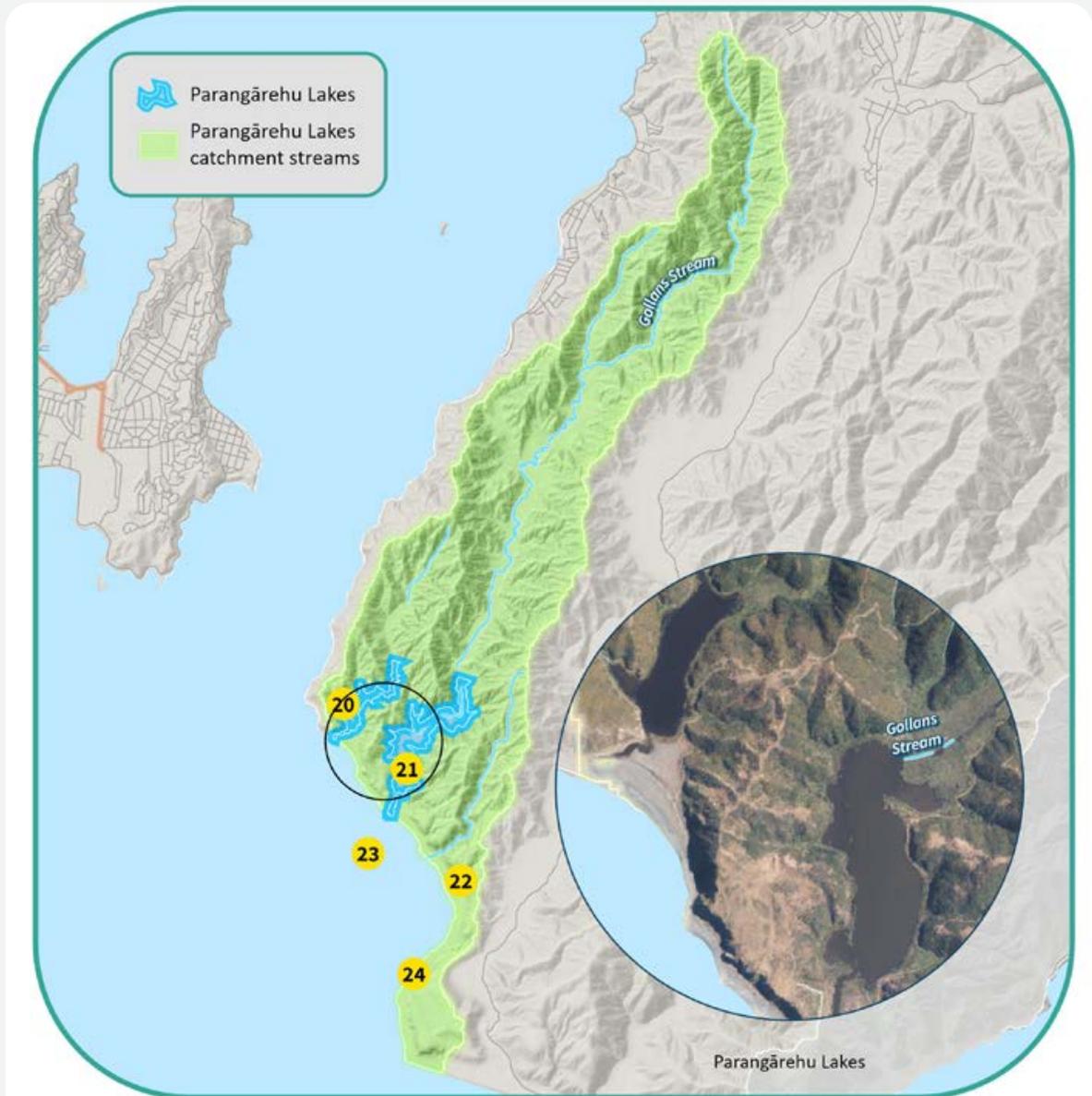
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Areas in the Parangārehu Lakes catchment



Sites of significance for Mana Whenua

- 20 Parangārehu Lakes, Kohangapiripiri
- 21 Parangārehu Lakes, Kohangatera
- 22. Ōkākaho Stream
- 23 Parangārehu (Fitzroy Bay)
- 24. Baring Head/Ōruapouanui

Catchment context and description

The Parangārehu Lakes (Parangārahu is also an appropriate usage) are two small, shallow, coastal lakes situated on the southern coastline within the East Harbour Regional Park. This catchment area includes these lakes and the upstream and surrounding short coastal-facing land of Baring Head. The headwaters of Lake Kōhangaterā includes Gollan's Stream with wetland, pastoral and native forest areas, as well as the popular Butterfly Creek recreational area. The Lake Kōhangapiripiri catchment, the smaller of the two, is mainly indigenous forest and regenerating scrublands, with significant wetlands to the north of the lake.

These lakes are highly valued by the wider community for recreational activity and their impressiveness. The Kōhangaterā and Kōhangapiripiri Lakes have many important values, including as outstanding wetlands and water bodies for indigenous biodiversity values, Ngā Taonga nui a kiwa and sites of significance to Taranaki Whānui, and are regarded as nationally significant lakes of their type. The presence of these lakes is a 'jewel in the crown' in this whaitua and they are outstanding.

Gollan's Stream is the primary kuinga (source) of wai entering Lake Kōhangaterā and is a place of great beauty and pristine waters. Te mātāpuna o te manga (the headwaters of the stream) are found in the undisturbed beech forest of the Eastbourne hills. This forest also forms part of the East Harbour Regional Park and it is managed by Greater Wellington.

Historically, Lake Kōhangaterā was a superior fishery for Taranaki Whānui. Karaka groves were planted alongside the lakes as a food source and the tributaries contain raupō beds. The area was a summer camp for whānau (family group) as they fished not only the lakes but the sea. Important mahinga kai sites in the area include Ōkākaho Stream, Parangārehu (Fitzroy Bay), Ōruapouanui/Baring Head and Kōhangaterā Lake, where species (such as longfin and shortfin tuna, mullet, kahawai and whitebait) were found. These sites are also puna rongoā and puna raranga (a source of medicinal and weaving material).

The Port Nicholson Block (Taranaki Whānui ki Te Upoko o Te Ika) Claims Settlement Act 2009 came into force on 5 August 2009, which transferred ownership of the lakebeds of Lake Kōhangapiripiri and Lake Kōhangaterā, the esplanade land surrounding both lakes and the dendroglyph site to the Port Nicholson Block Settlement Trust (PNBST). Greater Wellington and the PNBST jointly manage the Parangārehu Lakes Area through a 'Rōpū Tiaki' or guardianship group. The iwi and co-management partner Greater Wellington have drafted a management plan jointly to support the ecology of the area. All future planning and management actions for these lakes must recognise the co-management agreements and tino rangatiratanga of Taranaki Whānui over these lakes.

Our committee recognises the Vision and Outcomes of the Parangārahu Lakes Area Co-Management Plan that includes:

Moemoeā – vision

Kōhangapiripiri – Kōhangaterā – Kohanga ora: Nests nurturing life and wellbeing.

The outcomes – which are the Indicators of life, health and wellbeing are:

- » *Tuna Heke* – restoration of the eel and native fishery of the lakes as a self-replenishing mahinga kai for Taranaki Whānui
- » *Manu Korihi* – flourishing forested landscape and healthy wetland-lake ecosystem sustains multitudes of birds and indigenous species and a revitalisation of Taranaki Whānui cultural practice
- » *Tangata Kaitiaki* – managers, visitors and Taranaki Whānui are active kaitiaki protecting the catchments as taonga, which contributes to personal, community and tribal wellbeing.

Main issues in this catchment

The Parangārehu Lakes are generally considered to be in good, if not excellent, condition but there are emerging pressures causing concern. Te Māhere Wai raises a number of issues about the Parangārehu Lakes catchments that Greater Wellington must also consider and address.

The relatively recent detection of **invasive exotic plants in both lakes** threatens to upset the current macrophyte (aquatic plant) assemblage, which includes a range of unique and rare species. Recent incursions of the aquatic weed egeria (*Egeria densa*) in the upper Lake Kōhangaterā catchment is of particular concern. If not managed, there is a very real risk that egeria could out-compete and smother native macrophytes.

Both lakes have relatively **high nutrient levels**, which if not controlled could result in the lake experiencing an increase in phytoplankton blooms, or in a shift from a macrophyte to a phytoplankton-dominated system.

Excess **sediment** directly affects the health of the streams and is a potential source of nutrients. Suspended sediment can also reduce lake clarity, favouring some aquatic plants over others, potentially upsetting the current balance. Clearance of steep land for agricultural use in the lakes' catchments has resulted in increasing sedimentation in the lakes. Direct **livestock access to streams** hampers the growth of riparian vegetation and further weakens the stability of stream-banks. A lack of livestock exclusion and stream-bank vegetation in these catchments has left **stream bank margins prone to erosion** during periods of high rainfall.

Concern has been raised about the current level of **public access**. The Parangārehu Lakes need to be protected from development, pollution and should be accessed in a biosecurity and environmentally conscious manner by the public.

Actions likely to achieve shifts towards wai ora in a generation include good environmental practices addressing:

- » Stock exclusion for wetlands (required in national regulation).
- » Stock exclusion for Gollan's Stream and 1m wide tributaries (required in national regulation on low-slope land), which will also address stock exclusion for low-lying wetlands adjacent to streams.
- » Any seepage wetlands in catchment assessed through catchment and farm environment planning.
- » Any erosion
- » risks with a focus on stream-bank sources assessed through catchment and farm environment planning, which will also reduce phosphorous sources.

Also of concern is that the coastal road may be acting as a barrier to fish passage to the Lakes.

Journey from current state to wai ora

Sub- catchment areas	Ecological health												Human health									
	Macroinvertebrates				Periphyton				Fish				E. coli									
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps	Longer term						
	C	F	S	G			C	F	S	G			C	F	S	G						
Parangārehu catchment streams	C	↓	C	B			C	↓	C	B			A	A	A			E	E	C		

Sub- catchment areas	Ecological toxicity																							
	Copper				Zinc				Nitrate				Ammonia											
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps		Longer term							
	C	F	S	G			C	F	S	G			C	F	S	G								
Parangārehu catchment streams	A		A	A			A		A	A			A		A	A			A		A	A		

Sub- catchment areas	Sediment												Phosphorus			Dissolved oxygen								
	Clarity				Deposited				Current			First steps			Longer term									
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps		Longer term							
	C	F	S	G			C	F	S	G			C	F	S	G								
Parangārehu catchment streams	D	↓	D	C			D	-	D	C			D		D	C			A	-	A	A		

Sub- catchment areas	Ecological health												Human health										
	Submerged plants (natives)				Submerged plants (invasive)				Phytoplankton				E. coli										
	Current		First steps		Longer term		Current		First steps		Longer term		Current		First steps	Longer term							
	C	F	S	G			C	F	S	G			C	F	S	G							
Lake Kōhangatera	B	-	B	A			B	-	B	B			A	-	A	A			No data	B	A		
Lake Kōhangapiripiri	B	-	B	A			C	-	C	B			A	-	A	A			No data	B	A		

Sub- catchment areas	Human health					Ecological toxicity					Nutrients													
	Cyanobacteria			Ammonia		Phytoplankton			Phosphorus		Current			First steps		Longer term								
	Current		Longer term	Current		Longer term	Current		Longer term	Current		Longer term	Current		Longer term	Current		Longer term						
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G					
Lake Kōhangatera	A	-	A	A			A	-	A	A			B	-	B	B			C	-	C	B		
Lake Kōhangapiripiri	A	-	A	A			A	-	A	A			C	-	C	B			C	-	C	B		

Sub- catchment areas	Dissolved oxygen				
	Lake bottom				
	Current		First steps		Longer term
	C	F	S	G	
Lake Kōhangatera	No data			A	
Lake Kōhangapiripiri	No data			A	

Table footnote

Current illustrates the current state assessment (C) and forecast change (F) if we did not change our current management of stressors upon that attribute. A single arrow (↓) indicates that deterioration within an attribute state is expected and a double arrow (↓↓) indicates that an attribute state deterioration is expected.

Forecasts have not been made for the lakes or the deposited sediment and dissolved oxygen attributes, and these are shown as a white box with a dash in the table.

The first steps describe the predicted states that are expected from implementing management solutions to at least maintain the current state in the short term (S) and full implementation of our recommendations in a generation (G). Those that have the same short-term and generation state are expected to have improvement within that attribute state within the generation.

'Longer-term' expresses our direction and intention for continuous improvements desired towards wai ora throughout the whaitua. However, based on current information and approaches we don't currently know what this might require or how long this might take.

Appendices

Appendix 1: Committee establishment and membership

Whaitua Te Whanganui-a-Tara is the third of five whaitua processes Greater Wellington is undertaking as part of its requirement to give effect to the National Policy Statement for Freshwater Management 2020.

Greater Wellington saw the establishment of whaitua committees as an opportunity to do things differently through a devolved, community-led planning process. Greater Wellington aims to ensure that improvements in water quality are driven by local leadership, knowledge and priorities.

Whaitua Te Whanganui-a-Tara decision making is informed by many voices: national legislation that directs regional and district plans; the voices of the many and diverse local communities, whānau, hapū and individuals who provided their views; scientists from all disciplines; and those with cultural or local knowledge. It also considers those who do not have a voice or struggle to be heard, including younger and future generations. We have sought to represent all these voices.

The founding members of the Whaitua Committee were Roger Blakeley and Paul Swain (Greater Wellington), Morrie Love and Kara Puketapu-Dentice (Port Nicholson Block Settlement Trust/Taranaki Whānui ki Te Upoko o Te Ika), Hikitia Ropata and Naomi Solomon (Ngāti Toa Rangatira), Tui Lewis (Hutt City Council), Wayne Guppy (Upper Hutt City Council), Peter Gilbert (Wellington City Council), and Anya Pollock, Gabriel Tupou, Jonny Osborne, Louise Askin, Pat van Berkel, Peter Matcham, Quentin Duthie and Zoe Ogilvie (community representatives).

The first meeting was held on Matiu/Somes Island in February 2019 and was hosted by Taranaki Whānui. A key outcome of the day was a commitment to a bicultural approach to the way we would operate and make decisions. We were all encouraged to not just follow a 'bicultural process', but to think from the start that the outcome would be different from any previous similar processes.

In early meetings we decided we would benefit from a joint chairing arrangement, with one of the chairs being Mana Whenua and the other a member of the community who was not Mana Whenua. Kara Puketapu-Dentice and Louise Askin were confirmed as co-chairs at our third meeting.

The committee's make-up changed during its tenure:

- » Morrie Love left and was replaced by Sam Kahui; Paul Swain left and was replaced by Councillor Ros Connelly; and Peter Gilbert left and was replaced by Councillor Sean Rush.
- » Quentin Duthie resigned in February 2021 after making an outstanding contribution to the committee during its first two years.
- » Kara Puketapu-Dentice stepped down as co-chair in December 2020 and continued as a committee member. Sam Kahui was appointed as his replacement.



Appendix 2: Our community's freshwater values in Whaitua Te Whanganui-a-Tara

This Appendix takes a close look at the things we value in the waterbodies of our whaitua (our 'freshwater values'). These values all apply to some extent to all the waterbodies:

- » Freshwater ecosystem health
- » Mahinga kai
- » Threatened species
- » Natural form and character
- » Māori customary use and wai tapu
- » Drinking-water supply
- » Human contact (primary)
- » Community connection
- » Animal drinking water
- » Commercial, industrial use and the production of food and beverages
- » Transport and Tauranga waka
- » Fishing.

For a detailed description of specific Mana Whenua values in this whaitua, see Te Mahere Wai, the companion document produced by Te Kāhui Taiao (the Mana Whenua membership of the Whaitua Committee).

Freshwater ecosystem health.

This refers to the extent to which a catchment supports an ecosystem appropriate to the type of water body (e.g., river, lake, wetland or aquifer). There are five biophysical components that contribute to freshwater ecosystem health and all of them need to be managed. They are:

- » Water quality – the physical and chemical measures of the water (such as temperature, dissolved oxygen, pH, suspended sediment, nutrients and toxicants)
- » Water quantity – the extent and variability in the level or flow of water
- » Habitat – the physical form, structure and extent of the water body, its bed, banks and margins; its riparian vegetation; and its connections to the floodplain and to groundwater

- » Aquatic life – the abundance and diversity of biota, including microbes, invertebrates, plants, fish and birds
- » Ecological processes – the interactions among biota and their physical and chemical environment (such as primary production, decomposition, nutrient cycling and trophic connectivity).

We must also consider ways to fulfil the mauri or āhua of our waterbodies. Te Mahere Wai has more on this, including information on a Te Oranga Wai assessment framework (currently in development) for determining kei te ora te mauri (the mauri of the place is intact). The framework offers wider tools for assessing the NPS-FM's first priority of Te Mana o te Wai, and the provision of other Mana Whenua values. The western science measures of the national objectives frameworks are a part of (but insufficient on their own) for fully understanding the mauri, mana and āhua of waterbodies.

Ecosystem health as key indicator of the health of the waterbody – to be prioritised under Te Mana o te Wai applies to all freshwater bodies and coastal receiving environments of all sizes and types. Where a waterbody is significantly degraded or modified the journey of improvement may be long, but we must work to achieve the first priority (providing for ecosystem health) with kei te ora te mauri as the destination. Providing for the health of the awa will provide for the health needs of people and other human uses and values.

Mahinga kai.

Mahinga kai generally refers to freshwater species that have traditionally been used as food, tools or other resources. It also refers to the places those species are found and to the act of catching or harvesting them. Mahinga kai provides food for the people of the rohe and these sites give an indication of the overall health of the water. For this value, kai would be safe to harvest and eat. Transfer of knowledge is able to occur in the preparation, storage and cooking of kai. In catchments or sub-catchments that are used for providing mahinga kai, the desired species are plentiful enough for long-term harvest and the range of desired species is present across all life stages.

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To achieve kei te ora te mauri (the mauri of the place is intact) in catchments that are valued for providing mahinga kai, customary resources are available for use, customary practices are able to be exercised to the extent desired, and tikanga and preferred methods are able to be practised.

See Te Mahere Wai for direction on mahinga kai in this whaitua, and the in-development Te Oranga Wai assessment framework for information on the methods and basis for attribute state targets in regional planning documents.

Threatened species.

This refers to the extent to which a catchment supports a population of threatened species has the critical habitats and conditions necessary to support the presence, abundance, survival and recovery of the threatened species. All the components of ecosystem health must be managed, as well as (if appropriate) the specialised habitat or conditions needed for only part of the life-cycle of the threatened species.

Unfortunately, threatened species' habitats and passage requirements have been degraded to a greater or lesser extent in all waterbodies in the whaitua, especially around the coastal margins. In areas of urban development, the requirements of threatened species that live in or rely on freshwater habitats or coastal receiving environments have also been diminished. We must meet their requirements if we're to achieve the first priority of Te Mana o te Wai in the NPS-FM.

Natural form and character.

This refers to the catchment having particular natural qualities that people value. Natural qualities may include exceptional, natural or iconic aesthetic features.

Matters contributing to the natural form and character of a waterbody are its biological, visual and physical characteristics that are valued by the community, including:

- » Its biophysical, ecological, geological, geomorphological and morphological aspects
- » The natural movement of water and sediment, including hydrological and fluvial processes
- » The natural location of a water body and course of a river

- » The relative dominance of indigenous flora and fauna and the presence of culturally significant species
- » The colour of the water
- » The clarity of the water.

See Te Mahere Wai for information on mauri, mana and āhua as related values to natural form and character.

If we're to achieve the first priority of Te Mana o te Wai in the NPS-FM, it's important that we restore natural flow paths, habitat and shading, natural variations in flows and natural features (such as runs and riffles). This provides for the intrinsic values of the life-supporting capacity and integrity of the uniqueness the waterbody has. This has the additional benefit of allowing the waterways to be more easily viewed and accessed, and provides people with visual amenity and a sense of place and connection. This value applies to all freshwater bodies and coastal receiving environments of all sizes and types.

Māori customary use and wai tapu.

Māori customary use refers to the interaction of Māori with fresh and coastal water for cultural purposes. This includes the cultural and spiritual relationships with water expressed through Māori practices, recreation and the harvest of natural materials.

Wai tapu represent the places in a catchment where rituals and ceremonies are performed, or where there is special significance to tangata whenua. Rituals and ceremonies include, but are not limited to, tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu (placing of rāhui), whakanoa (removal of rāhui) and tuku iho (gifting of knowledge and resources to future generations). In providing for this value, the wai tapu are free from human and animal waste, contaminants and excess sediment, with valued features and unique properties of the wai protected. Other matters that may be important are that there is no artificial mixing of the wai tapu and identified taonga in the wai are protected.

For more information, see schedules B and C of the Natural Resources Plan and further detail in Te Mahere Wai.

Drinking-water supply

This refers to the catchment meeting people's drinking-water needs. Water quality and quantity is sufficient for water to be taken and used for drinking-water supply.

Matters affecting the suitability of water for drinking include:

- » Physical, chemical and microbiological contamination (e.g., bacteria and cyanotoxins, viruses, protozoa and other pathogens)
- » Any other contaminants identified in drinking-water standards issued under the Health Act or any other legislation
- » The effects of contamination on drinking-water treatment processes and the safety of drinking water and its aesthetic value (i.e., appearance, taste and smell).

The Te Awa Kairangi/Hutt River, Wainuiomata and Ōrongorongo River catchments are the major sources of water for the municipal drinking-water network, which draws from surface water takes and groundwater supply from the Hutt aquifer.

The municipal network supplies drinking water for residential, public and commercial uses to the cities of Upper Hutt, Lower Hutt, Wellington and Porirua. All catchments also have small-scale water takes for domestic use and animal drinking water. In a small number of locations, there are surface water takes or bores for small-scale commercial uses through consents for taking water, because even these can be the source of significant risks to mauri and ecosystem health.

Drinking-water supply should not compromise the ecosystem health needs of the waterbody, as well as it being protected from contamination and overuse. We need everyone to be self-responsible for the water they use and for the impacts of extracting water that would otherwise stay in the river ecosystem. In accordance with the kawa, we should all minimise and be as efficient as possible with our water use.

Human contact (primary)

This refers to the extent to which a catchment supports people being able to connect with the water through a range of activities (such as swimming, waka, boating, fishing, mahinga kai and water skiing) in a range of different flows or levels.

Matters affecting the ability to have safe and suitable human contact with waterways include pathogens, water clarity, deposited sediment, plant growth (from macrophytes to periphyton to phytoplankton), cyanobacteria, other toxicants and litter.

Through our public engagement, we've found that the water quality required for safe and direct human contact applies to all fresh and coastal waterbodies of all types and sizes. We've heard that people's long-term goal for urban streams is that they're safe places for children to play, and that this is important to restoring their mana and people's connection to them. It shows that human contact is necessary for much more than recreation, mahinga kai, customary Māori use, mental health or community connection.

Community connection

The 'community connection' value refers to the sense of connection that people feel to the waterways where they live and with which they interact.

Through our public engagement with the wider community, we've received a strong message that the unique nature of our rivers, streams, swimming holes, wetlands and coastal waters, together with their environment, gives people a significant sense of place and contributes to their identities. We've learned that community connections with freshwater deliver value to people, whether through their participating in its care or through mental health benefits, spiritual connections, a sense of identity, a sense of place, stories and culture, or physical health.

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This value is clearly significant. It signals that we need to consider, respect and enhance opportunities for community connection alongside our work in maintaining and improving waterbody health. It results directly and incidentally from an extensive range of activities that include fishing, diving, tramping, dog walking, swimming, sunbathing, walking, running and cycling by streams, playing, community events and gatherings, and enjoying the sounds of water and the sight of fish.

Community members and groups, and businesses of all types, in the whaitua have essential roles in leading and undertaking the restoration effort we require to improve the health of our freshwater at the scale and pace required.

We need Greater Wellington and city councils to:

- » Partner with them in visioning, planning and delivering change
- » Move beyond conventional consultative approaches
- » Encourage a long-term commitment
- » Boost their enthusiasm, hope and sense of connection to the whaitua by ensuring they understand their roles and the value of their contributions
- » Develop clear resourcing strategies with Mana Whenua and council agencies.

The high population density in Te Whanganui-a-Tara enables important community connections to waterbodies of all types and sizes. See Te Mahere Wai for detailed descriptions of Mana Whenua and mātauranga relationships with awa and wai.

Animal drinking water

This refers to the catchment meeting the needs of farmed animals. Water quality and quantity meets the needs of farmed animals, including whether it is palatable and safe.

All catchments in the Te Whanganui-a-Tara whaitua have some pastoral land use and farmed animals, and many smaller 'lifestyle' properties where people hold livestock that require water to drink.

Commercial, industrial use and the production of food and beverages

This refers to the catchment providing economic opportunities for people, businesses and industries.

Water quality and quantity can provide for commercial and industrial activities. Irrigation and cultivation are not major uses in this whaitua, but do exist at a limited scale. The production of food and beverages are significant industries in this whaitua and most people use water from the municipal supply network.

Water quality and quantity should also be suitable for irrigation needs, including supporting the cultivation of food crops, the production of food from farmed animals, non-food crops (such as fibre and timber), pasture, sports fields and recreational areas. In this whaitua, most economic use comes from commercial use of the municipal water supply network, but water is also used from private surface and groundwater takes to support a range of livelihoods.

We now need to develop a strategy to ensure enough water is available for commercial and industrial use without compromising its health, aquatic ecosystems and human health. It's important to also remember that commercial freshwater values are intimately linked to people's mental and physical health through employment and prosperity.

Transport and Tauranga waka

This refers to the catchment being navigable for identified means of transport. Transport and Tauranga waka generally refers to places to launch waka and watercraft, and appropriate places for waka to land (Tauranga waka).

While this whaitua has few waterway reaches that are suitable for navigating waka or watercraft, the tubing and kayaking for recreation does occur in Te Awa Kairangi and the lower reaches can be suitable for larger craft. See Te Mahere Wai for direction on the Mana Whenua values for navigation and Tauranga waka.

Fishing

This refers to how the catchment supports fisheries of species allowed to be caught and eaten. For catchments valued for fishing, the numbers of fish are sufficient and suitable for human consumption. In some areas, fish abundance and diversity provide a range in species and size of fish, and algal growth, water clarity and safety are satisfactory for fishers. Attributes – a measurable characteristic of freshwater (including physical, chemical and biological properties) that supports particular values – will need to be specific to fish species (such as tuna, lamprey, whitebait, salmon or trout).

The PNRP identifies some rivers in the whaitua as significant for sport fisheries. The fish in these areas are healthy and should provide for recreational use for as long as there is demand, and as long as there are no negative effects on indigenous species and the practice of mahinga kai.

The PNRP identifies some rivers in the whaitua as significant for sport fisheries. We also recognise the lower Te Awa Kairangi and coastal receiving environment as important places for fishing native species (such as kahawai and mullet). See Te Mahere Wai for direction on the Mana Whenua values for mahinga kai.

**Appendix 3: Te reo Māori glossary**

TE REO MĀORI TERM	ENGLISH TERMINOLOGY
Āhua	Natural character
Hauora	Health and wellbeing
Kawa	Protocol, ritual chants, system
Mahi kai/mahinga kai	Food gathering places
Mauri	Life force
Tauranga waka	Canoe landing places, moorings
Wai ora	Water which gives life

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Appendix 4: Technical glossary

ITEM	DESCRIPTION
Allocation	The process of distributing water supplies to users to meet the various requirements of a community.
Aquifer	A geological layer in which groundwater is stored. The amount of water stored depends on the geological material (e.g., gravels are likely to store more water than dense rock). Aquifers are recharged by rainfall and surface water (through streams and rivers). Groundwater is taken from aquifers for many uses, including drinking water.
Attribute states	Are a measurable characteristic of freshwater (including physical, chemical and biological properties) that supports particular values. Within the NPS-FM, various states have been determined for different attributes (i.e., nitrate toxicity), which range from A to E. The NPS-FM requires Greater Wellington to set target attribute states.
Bulk water consent	A resource consent (or consents) granted by Greater Wellington for the taking of large amounts of water for municipal use.
Citizen science	A scientific endeavour in which investigations or monitoring are carried out by community members who are not qualified scientists.
Coastal receiving environments	The coastal environment which freshwater runs into.
Constructed overflow (also known as wastewater overflow)	A site where underground flows of wastewater can overflow into the stormwater network when pipe capacity is exceeded, typically during wet weather (driven from inflow and infiltration). These are designed fail-safes to ensure that sewage does not backflow into residential properties, but instead results in discharges to the environment.
Contaminant	Any physical, chemical, biological or radiological substance that has an adverse effect on air, water, soil or living organisms (such as heavy metals, pathogens and nutrients).
Critical source areas	Small, low-lying rural or urban areas where runoff accumulates contaminants in high concentrations, and/or hotspots of activity or contaminant generation (such as stock camps and cattle races, construction sites or industrial operations).
Cross-connection	Where a wastewater pipeline (often from a residential household or development) has been connected to a stormwater pipeline, resulting in a continuous direct discharge of sewage to the environment.

ITEM	DESCRIPTION
Cyanobacteria (also known as blue-green algae)	An ancient group of microscopic organisms found naturally in all water types. They produce a range of natural compounds, of which some can be toxic to people, dogs and livestock.
Diffuse discharge	A discharge that cannot be traced back to a single source/point (such as a stormwater pipe or farm runoff).
Discharge	Any spill, emission, leaking, pumping, injection, deposit, dispersal, leaching, migration, disposal, discharge or release of a contaminant, or water or soil containing a contaminant.
Drinking water	Raw water that has been abstracted from rivers and aquifers and treated to an acceptable 'drinking water' quality, then pumped/distributed around cities to be used for commercial, residential and industrial activities.
Drinking-water network	The network of pipelines, reservoirs, dams, treatment plants and pump stations that moves raw and treated drinking water around cities.
Exfiltration	All leakage of wastewater into the environment through broken pipes (either public mains or private laterals connected to public mains).
Flushing flows	High river flows, usually associated with rainfall, which flush out the river system and can scour out macro-algae. They can be artificially induced as a mitigation measure in rivers where flows have been lowered by dams or large abstractions.
Freshwater Farm Plans	These plans are a central government regulatory requirement for farms over 20ha in area.
Global stormwater network consent	The resource consent granted to Wellington Water to operate the stormwater network in the whaitua.
Grade 1–5	A generic grading assessment used for pipelines. Grade 1 signals very good condition, grade 2 good condition, grade 3 average condition (some potential for leaks) and grades 4 and 5 poor/very poor condition and in need of repair or urgent works.
Green infrastructure	Engineering structures built as part of water-sensitive urban design (WSUD), including constructed wetlands, rain gardens, permeable paving, swales and green roofs.

ITEM	DESCRIPTION
Greywater	Untreated liquid wastewater from domestic sources (such as household sinks, basins, baths, showers and similar appliances). This term does not include toilet, faecal matter or urinal wastes (wastewater).
Hydraulic neutrality	The mean annual runoff and peak flows from a wide range of rainfall event sizes from a completed development is the same as it was prior to development, and should not result in increased stress (hydrologically or ecologically) on the stormwater network or the receiving freshwater environment.
Inflow and infiltration	The connection of stormwater (and groundwater) to the wastewater network, which can lead to wastewater overflows. Inflow is from surface runoff (i.e., down pipes connected to gully traps) and infiltration is from groundwater inflow (through old or damaged pipes).
Infrastructure Leakage Index (ILI)	A technical measure of the drinking water network's performance for leaks. It allows for comparisons to other cities around the world.
Laterals	Small pipes connecting a property to the public three waters network (stormwater, wastewater and drinking water). They are often privately owned with little knowledge about their state/condition.
Main	Primary public network pipelines that many laterals drain to (stormwater or wastewater) or source water from (drinking water).
Mean annual low flow (MALF)	The naturalised mean (average) annual low flow with a duration of seven days.
Minimum flow	The flow or water level at which abstraction from a river or groundwater is restricted by Greater Wellington (or required to cease). This may be below the MALF.
Natural processes	Dynamic natural, physical and ecological relationships and events that are characteristically natural in their occurrence and effects. They act to shape the natural environment and its landforms and features (such as beaches, dunes, wetlands and rivers). They include processes of wave formation, breaking and dissipation; swash run-up; nearshore currents; sediment transport; erosion and deposition; flooding; river meandering; aggradation; and mass movement.

ITEM	DESCRIPTION
Ngā Taonga Nui a Kiwa	Schedule B of the Proposed Natural Resources Plan. Large freshwater and coastal entities from which Mana Whenua derive cultural and spiritual identity, their status as Mana Whenua and the associated responsibilities that come with that including those of kaitiaki. These places are the larger rivers and harbours that have a long history of multiple and complex resource use associated with large populations. Ngā Taonga Nui a Kiwa emphasises the importance of Mana Whenua relationships with rivers, lakes, harbours and estuaries.
NPS-FM	National Policy Statement for Freshwater Management 2020.
Offset	A measurable positive outcome, resulting from an action designed to compensate for the significant residual adverse effects on the environment arising from an activity after avoidance, remediation and mitigation measures have been taken.
Point source discharge	The discharge of water or contaminants at a specific identifiable location (such as a factory) or from a fixed facility (such as a pipe).
Potable water	Water that has been treated to a high standard for drinking. Often used interchangeably with 'drinking water'.
Public three waters network	Territorial authorities (local councils) own the three waters assets that move wastewater, stormwater and drinking water (the 'three waters') around cities. These assets are managed by Wellington Water. Private laterals connect to these public networks for either water supply or wastewater and stormwater discharge.
Relevant three waters agency	This is currently Wellington Water. However, when the Three Waters Reform Programme is completed, the management of three waters infrastructure may change to any 'relevant three waters agency'.
Restoration	The rehabilitation of sites, habitats or ecosystems to support indigenous flora and fauna, ecosystem functions and natural processes that would naturally occur in the ecosystem and locality.

ITEM	DESCRIPTION
Riparian planting	The planting of areas beside rivers and streams to reduce contaminants getting into water, stabilise banks, shade the water and provide natural inputs (leaf and wood fall) to contribute food sources and habitat.
Stormwater	Rainfall runoff that has been intercepted, channelled, diverted, intensified or accelerated by the human modification of a land surface, or runoff from the external surface of any structure (e.g., a roof), as a result of precipitation and includes any contaminants contained in the runoff.
Stormwater network	A network of devices designed to capture, detain, treat, transport and discharge stormwater that includes, but is not limited to, kerbs, intake structures, pipes, soak pits, sumps, swales, and constructed ponds and wetlands.
Stygofauna	Animals that live in groundwater systems or aquifers.
Territorial authorities	City and district councils.
Three waters	Stormwater, wastewater and drinking water.
Toxic algae	The common name for toxin-producing cyanobacteria found in rivers.
Tributary	A river or stream that connects to a lake or a larger river or stream.
Unconstructed overflow	A site where wastewater/stormwater discharges to the surface at a location that has not been designed for it, primarily due to insufficient network capacity during wet weather events. It is typically found at manholes.
Urban stream syndrome	The term that describes the consistently observed ecological degradation of streams draining urban land.
Wastewater	Liquid waste (and liquids containing waste solids) from residential, industrial and commercial premises. It includes, but is not limited to, human effluent, greywater and trade wastes, and should exclude stormwater.
Wastewater network	A community-reticulated wastewater system that includes, but is not limited to, a network of devices, pipes and pump stations, designed to accept and transport wastewater from properties to a treatment plant and the discharge of treated wastewater from a wastewater treatment plant.

ITEM	DESCRIPTION
Wastewater overflows	A state when wastewater discharges to the environment through the stormwater system through a constructed or unconstructed overflow.
Water-sensitive urban design (WSUD)	A stormwater engineering principle that seeks to maintain and enhance the natural water cycle for the built environment, resulting in better water quality, flood mitigation and enhanced natural character.
Wellington Water	The three waters agency that currently manages stormwater, wastewater and drinking water in Wellington, Upper Hutt, Lower Hutt and Porirua.
Whaitua	Te reo Māori for catchment or space. The Wellington Region is divided into five whaitua, each of which will have a Whaitua Committee assigned to develop a programme to improve water quality.
WIP	Whaitua Implementation Programme.
Workforce Development Council (WDC)	Organisations recently created to provide industries with greater leadership across vocational education and training. Each WDC represents a specific sector.





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— gw.govt.nz/whaitua-te-whanganui-a-tara



Te Awa Kairangi / Hutt River Valley Subcommittee
12 March 2024
Report 24.88



For Information

WAIWHETŪ FLOOD HAZARD MODELLING

Te take mō te pūrongo

Purpose

1. To inform the Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) of the updated flood hazard modelling.

Te horopaki

Context

2. Flooding is a significant hazard in the Wellington Region that poses a risk to both life and property. Flooding is commonly experienced from three main sources; rivers, coastal inundation, and storm water flooding.
3. Many of our communities are considered to be at risk – including urban areas within the Hutt Valley, townships on the Kāpiti Coast, Masterton and Greytown in the Wairarapa and rural areas throughout the region.
4. The 2004 flood in the Waiwhetū Stream that caused major flooding to residential properties along Riverside Drive, the Hutt Park raceway and the industrial area in Gracefield is a reminder of the damage that flooding can cause.

Waiwhetū flood risk management

5. Despite generally being a small, slow-flowing stream, the Waiwhetū Stream has a long history of flooding. A major flood event in 2004 caused 74 houses to be flooded and a further 15 to be evacuated due to flooding of the section or garage.
6. Following this, Greater Wellington began the development of a plan to consider how to best address the flood risk. In 2010, work was undertaken to remove contaminated material and reduce flood risk in the lower reaches. This improved the level of service to a 2.5% annual exceedance probability (AEP) (also known as a 1 in 40 year return period) flood event.
7. However, further development of a plan for the Waiwhetū Stream was put on-hold due to other priorities within Greater Wellington.
8. Updating the flood risk modelling for the Waiwhetū is key for understanding the probability and likely extent of flooding for the current and predicted future climate. This can then be used to understand the issues from flooding that need to be managed.
9. Once the flood hazard mapping has been finalised, this can be used to inform the range of options to reduce the impact of flooding to the Waiwhetū community and

particularly how to manage the remaining risk for events above the 2.5% AEP flood level.

10. From previous work undertaken, it is clear that there will not be an easy solution or quick-fix for this issue. The Te Awa Kairangi / Hutt River Valley Subcommittee should expect ongoing reports and workshops later this year regarding this project.
11. Staff are capturing background information on the current state of the river environment, including the hazards it presents to the surrounding community.

Te tātaritanga Analysis

Flood hazard modelling process

12. Flood hazard modelling is the process carried out by Greater Wellington to understand flood risk from significant water courses in the Wellington Region. It consists of three key elements: collection of survey information; hydrological modelling; and hydraulic modelling. The flood hazard modelling outputs are the flood maps that are included in district plans, provide the basis of structural works and river management decision making, and inform civil defence and emergency management actions.
13. Greater Wellington developed the Flood Hazard Modelling Standard (FHMS) in May 2021 to outline the protocols to be followed by any person working on Greater Wellington flood hazard modelling projects. The protocols in the FHMS have been developed to ensure that flood hazard modelling projects are undertaken in a robust and consistent way that is in line with accepted industry practice. They are designed to still allow for flexibility in approach and recognise that the optimal approach may be dependent on catchment or project specific factors. The protocols require that every stage of the process is well documented in reports or spreadsheet logs and registers.
14. Figure 1 provides an overview of the FHMS and identifies the key stages where community engagement actions are conducted.

Waiwhetū flood hazard maps

15. In 2019, Wellington Water Limited (WWL) approached Greater Wellington indicating that it was going to undertake stormwater modelling in the Waiwhetū Stream urban catchment. Greater Wellington and WWL agreed to undertake a joint venture to update the existing Waiwhetū Stream model and combine it with a stormwater model for the urban catchment.
16. Combining the stormwater and fluvial model for the Waiwhetū catchment has been a complicated process. Stantec was engaged to complete the integrated 1D-2D model of Eastern Lower Hutt that met the Wellington Water stormwater modelling specifications as well as the Greater Wellington Flood Hazard Modelling Standard. This included all known stormwater assets as well as the Waiwhetū Stream.
17. The model was validated and calibrated against the 2004 and 2016 flood events in the Waiwhetū Stream.
18. The WWL modelling specification includes a set of specific parameters, including a nested storm hydrological approach. This approach is appropriate for stormwater

modelling; however, it is difficult to use with a water body the size of the Waiwhetū Stream.

19. To meet Greater Wellington’s FHMS requirements, a different hydrological approach was required using NIWA’s temporal design storm methodology to produce a standard rainfall profile. As a result, outputs from the Greater Wellington and WWL differ due to the different hydrological inputs, however the model that is used to generate the outputs is the same.
20. We have now completed P5 Mapping and Outputs in the FHMS (Figure 1) and are starting P6 Independent Audit. At this stage, the FHMS requires that draft outputs are consulted with the community and made available to the territorial authority and the public, as highlighted in the red circles in Figure 1.
21. Once the community engagement has been completed, the independent audit can be completed, and the flood hazard maps will be finalised.

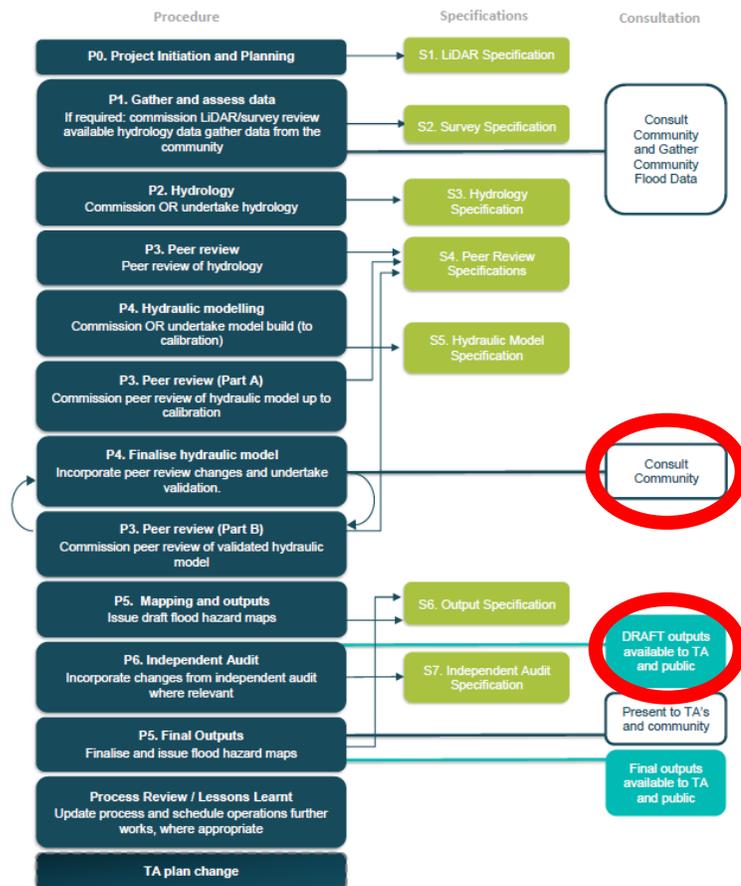


Figure 1: Flood Hazard Modelling Standard overview

Waiwhetū flood hazard maps engagement

22. A flood hazard map engagement process is being undertaken to present the draft flood hazard maps to the community. The engagement period is running from Monday 11 March 2024 to Sunday 31 March 2024.
23. Two flood depth maps (**Attachment 1**) will be presented on the Greater Wellington website as well as at the Hutt Riverbank market on two Saturdays. One map shows the 1% AEP flood for the current climate (not including climate change) and the other shows the 1% AEP flood for predicted future climate, including an allowance for climate change.
24. An engagement calendar is provided in **Attachment 2**. This indicates the timing of the various engagement activities. The engagement activities include:
 - a Social media posts on 6, 11, 18 and 27 March 2024
 - b Advertising in the Hutt News on 14 and 21 March 2024
 - c Drop-in stall at the Riverbank Markets on 16 and 23 March 2024
 - d Presenting at the Friends of the Waiwhetū Stream committee meeting on 11 March 2024
 - e Presenting at the Waiwhetū Stream walkover on 13 March 2024
25. The flood hazard maps, information about the maps, and a feedback form will be available both on the Greater Wellington website and as handouts at the various in person events.

Hutt City District Plan flood hazard overlays

26. Land use planning, through district plans, is one of the available tools for managing flood risk. It plays a vital role in ensuring that use and development within areas susceptible to flooding is appropriate.
27. To quantify the potential effects of flooding, there needs to be an understanding of:
 - a What area of land will be inundated in flood events of different magnitudes.
 - b How deep and fast the flood flows will be.
 - c How often these events will occur.
 - d What activities will be impacted by the flooding.
28. The flood hazards most relevant to the Wellington Region are:
 - a River and stream corridor flooding.
 - b Erosion hazard areas.
 - c Overland flow flooding.
 - d Ponding.
 - e Residual flood hazard.
29. Flood hazard is a function of the depth and velocity of flood waters at a particular location. It informs the likely risk to people and property as a result of flooding. Flood

hazard is typically low in shallow, slow-moving waters, and increases as the depth and velocity of flood waters increase.

30. Robust flood hazard modelling and mapping is necessary to understand flood risk. Flood hazard mapping helps communities understand the risk of flooding from the rivers or streams they live by and informs decisions about how to manage that risk so that communities are developed in a safe and sustainable way.
31. Flood hazard maps should correspond to land use planning provisions that address flood risk in a district plan. They should be made easily available to the public and provided with any Land Information Memorandum (LIM) or Project Information Memorandum (PIM).
32. Under the risk-based planning approach, hazards can be categorised into Low, Moderate, and High Hazard Areas. Different rules can be applied to the differing areas, based on the risk they pose to the relevant land use or activity.
33. Greater Wellington has recommended an approach for Hutt City where flood hazard is categorised in the following three areas for the 1% AEP event in their district plan:
 - a Low Hazard Areas, where flow is typically slow, and flooding is shallow. The Low Hazard Areas include Inundation Areas as well as Residual Flood Hazard Areas.
 - b Moderate Hazard Areas, where flow is deeper, or faster moving, or development is likely to increase flood impacts nearby. The Moderate Hazard Areas include Overland Flowpaths and Erosion Hazard Areas, where there is the potential for future development to be affected by fluvial erosion.
 - c High Hazard Areas, where flow is deep or fast, including River / Stream Corridors.
34. District plan flood hazard maps should be based on the latest flood modelling that includes the predicted impacts of climate change and uncertainties. The parameters used to define flood hazard areas are listed in Table 1.
35. Greater Wellington supplied draft hazard mapping to Hutt City Council in September 2023. Discussions with Hutt City Council are being undertaken to determine how the flood hazard overlays will be incorporated into the proposed district plan. This includes a decision that is required regarding the climate change scenario that will be used for the flood hazard overlays.
36. Once Greater Wellington's flood hazard modelling process has been completed, final flood hazard overlays will be provided to Hutt City Council to include in their proposed District Plan later this year.

Table 1: Flood hazard categories

Hazard Level/ Overlay	Description	Activity restrictions	Modelled flood hazard threshold		
			Depth	Velocity	Depth x Velocity
Low Hazard Residual Flood Hazard Area	Areas that may be inundation if there is a failure in flood defences or if the design event for mitigation is exceeded	Development within the Residual Flood Hazard Area presents a lower hazard risk, and therefore a permissive level of consenting with fewer rules is appropriate. However highly sensitive activities and emergency facilities should be avoided.			
Low Hazard Inundation Area	Areas of lower velocity and depth.	Development within the Inundation (Ponding) Area presents a lower hazard risk, and therefore a permissive level of consenting with fewer rules is appropriate.	0.05m to 0.5m	< 0.5m/s	or < 0.25m ² /s
Medium Hazard Overland Flowpaths	Areas of lower depth, and moderate velocities.	Development within the Overflow Path has more restrictive consenting requirements commensurate with the medium risk.	> 0.25m	> 0.5m/s	or >0.25 m ² /s
High Hazard River / Stream Corridor	Areas with dangerous flow depths and/or velocities.	Development within the Stream/River Corridor should generally be avoided and has more extensive consenting requirements	> 0.5m	> 2m/s	or > 0.5m ² /s

Ngā hua ahumoni Financial implications

37. The projects identified and described in this report are included in Greater Wellington's Long Term Plan.
38. The Waiwhetū flood risk management process will identify options for managing flood risk from the Waiwhetū Stream and will include an evaluation of the financial implications of any options selected by in the short term but also over long term planning horizons.

Ngā Take e hāngai ana te iwi Māori Implications for Māori

39. Waiwhetū Marae property is sitting within the flood hazard area. The building itself is sitting above the flood hazard in the updated modelling.
40. Approximately 20% of the population of the Waiwhetū statistical area is Māori.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

- 41. Climate change is considered as part of the FHMS process. Climate projections are modelled as part of the hydrology and sea level rise inputs allowing Greater Wellington to consider increased hazard impacts.

Ngā tūāoma e whai ake nei
Next steps

- 42. Community engagement on the flood hazard maps is being undertaken from 11 to 31 March 2024. Once this has been done, the process to finalise the flood hazard maps can be completed.
- 43. On-going engagement with Hutt City Council, iwi, and the wider community will be undertaken through the flood risk management process.
- 44. Finalised flood hazard overlays will be provided to Hutt City Council. These maps will inform the development of the Hutt City District Plan.
- 45. Waiwhetū Stream flood risk management options will be considered. It is expected that this will occur using a holistic approach.
- 46. Staff will speak to the Waiwhetū Flood Hazard Modelling presentation (**Attachment 3**) at the Subcommittee meeting on 12 March 2024.

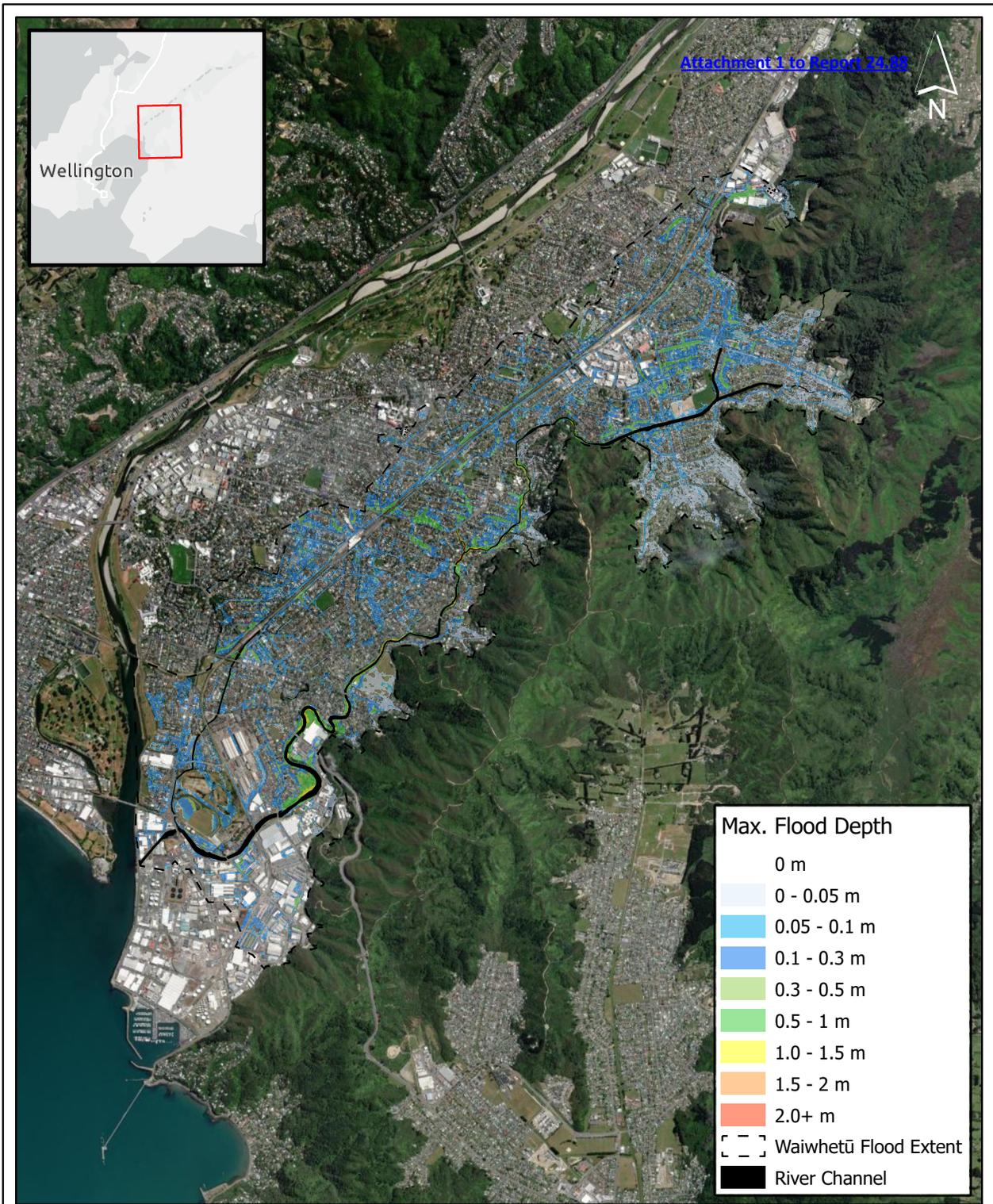
Ngā āpitihanga
Attachments

Number	Title
1	Flood depth maps for the Waiwhetū Stream 1% AEP flood event current and future climate
2	Waiwhetū flood hazard map engagement calendar
3	Waiwhetū Flood Hazard Modelling presentation

Ngā kaiwaitohu
Signatories

Writer	Francie Morrow – Senior Project Manager, Investigations
Approvers	Andy Brown – Team Leader, Knowledge Water Evan Harrison – Manager, Knowledge David Hipkins – Director, Knowledge and Insights Lian Butcher – Kaiwhakahaere Matua, Taiao Group Manager, Environment

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council’s roles or with Committee’s terms of reference</i></p> <p>The Subcommittee’s specific responsibilities include to oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi/Hutt River floodplain.</p> <p>This report relates to the development of flood hazard modelling in the Waiwhetū Stream and the consideration of flood risk management planning in the Waiwhetū catchment.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The projects described in the report support the delivery of Greater Wellington’s Long Term Plan objectives.</p> <p>These projects specifically support the priority area of area of te tū pakari a te rohe/regional resilience and the understanding of climate change.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation on the flood hazard modelling has been undertaken with:</p> <ul style="list-style-type: none"> • The Marketing and Comms team regarding the engagement process. • The Catchment Function regarding alignment with work being undertaken in the catchment. • The Delivery Function regarding flood hazard mapping and engagement.
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>There are no health and safety risks.</p> <p>The production of flood hazard mapping is a risk for Greater Wellington, and this has been mitigated through the development and adoption of the FHMS.</p> <p>The purpose of flood risk management planning is to reduce the risk to communities and improve the region’s resilience.</p>



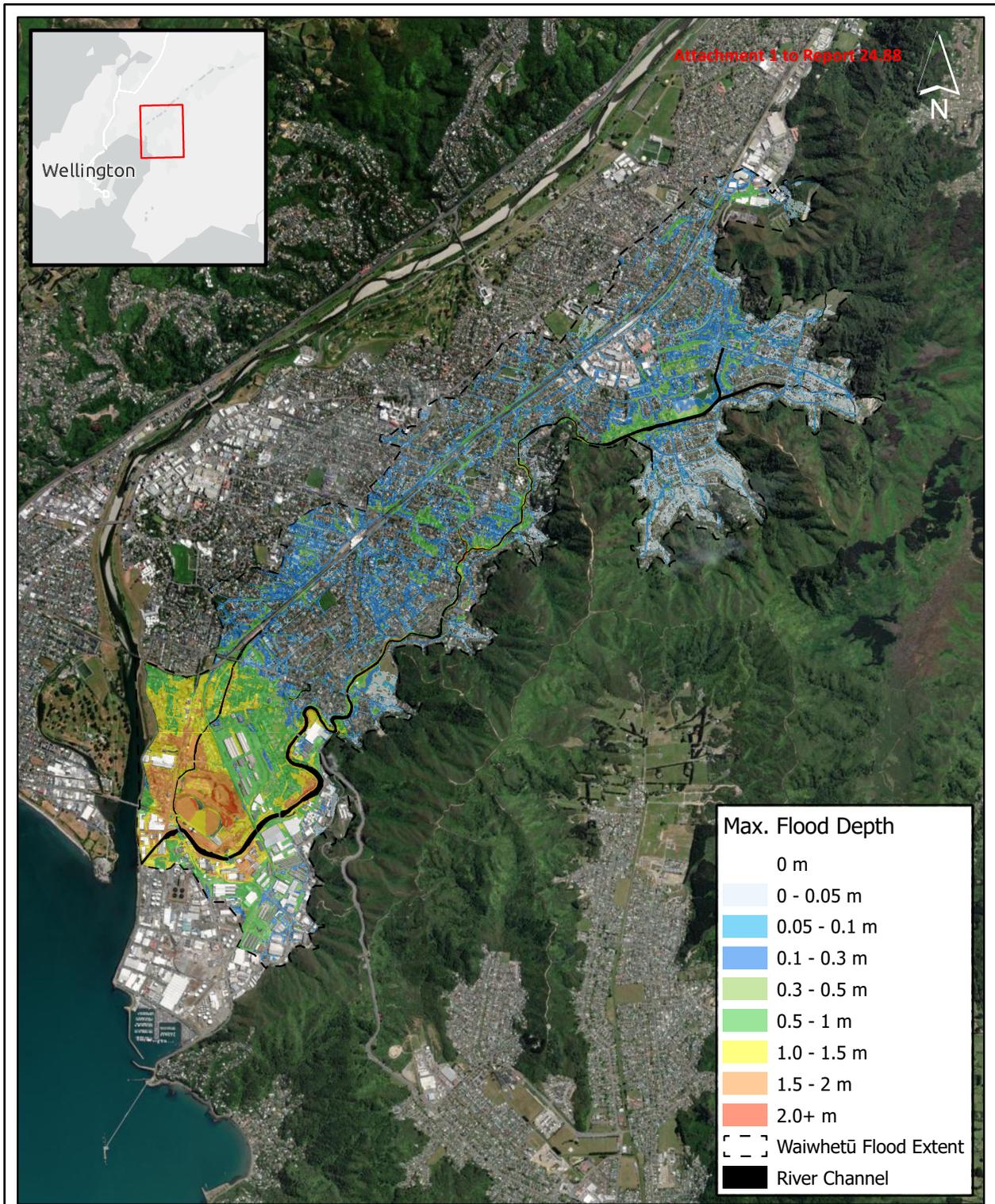
1% AEP (1 in 100-year ARI) flood depths for the current climate

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AERIALS FLOWN 2023 GWRC

DRAWN: L VAN LITH, 23 FEBRUARY 2024





1% AEP (1 in 100-year ARI) flood depths for predicted future climate

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 DRAWN: L VAN LITH, 23 FEBRUARY 2024



Waiwhetū Flood Hazard Map Engagement Calendar

Engagement runs from Mon 11 March to Sunday 31 March 2024

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
March	4	5	6 Social media post	7	8	9	10
	11 Start of engagement GW webpage goes live Social media post Friends of the Waiwhetū Stream meeting 19:00	12 TAK/HRV Subcommittee meeting 14:00	13 Waiwhetū walkover 08:30	14 Advertise in Hutt News	15	16 Drop-in at Riverbank Markets	17
	18 Social media post	19	20	21 Advertise in Hutt News	22	23 Drop-in at Riverbank Markets	24
	25	26	27 Social media post	28	29 EASTER FRIDAY	30 EASTER SATURDAY	31 EASTER SUNDAY
							End of engagement
April	1 EASTER MONDAY	2	3	4	5	6	7
	8	9	10	11	12	13	14

WAIWHETŪ FLOOD HAZARD MODELLING

Te Awa Kairangi / Hutt River Valley Subcommittee
12 March 2023

Francie Morrow – Senior Project Manager, Investigations

Andy Brown – Team Leader, Knowledge Water



Structure

Purpose: *To inform the Te Awa Kairangi / Hutt River Valley Subcommittee of the updated flood hazard modelling.*

- Flood risk
- Flood hazard modelling – the process
- Waiwhetū flood hazard maps
 - Engagement
- District Plan flood hazard overlays
- Managing the risk



Flood Risk

- NZ's number one hazard
- 2004 flood in the Waiwhetū Stream
 - 74 houses flooded
 - Further 15 evacuated

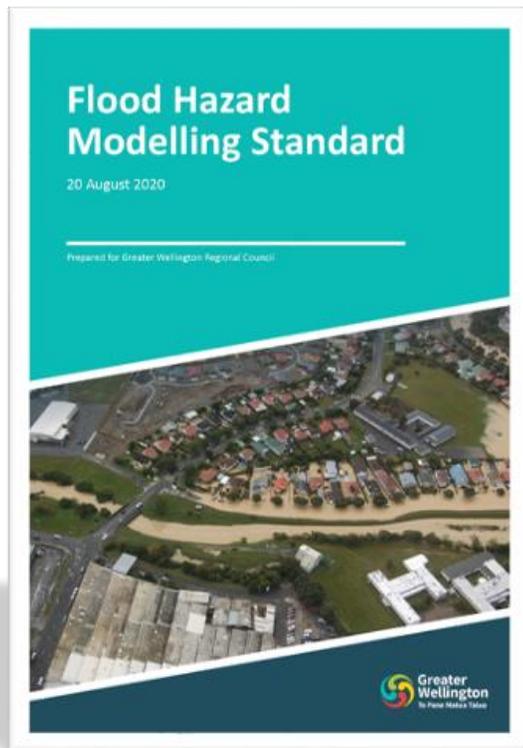


Flood Hazard Modelling



- Critical process in the management of flood risk
- Forms the basis of risk management, prioritisation, and investment decisions for GW
- Supports asset management and the development of floodplain management plans
- Informs district plans

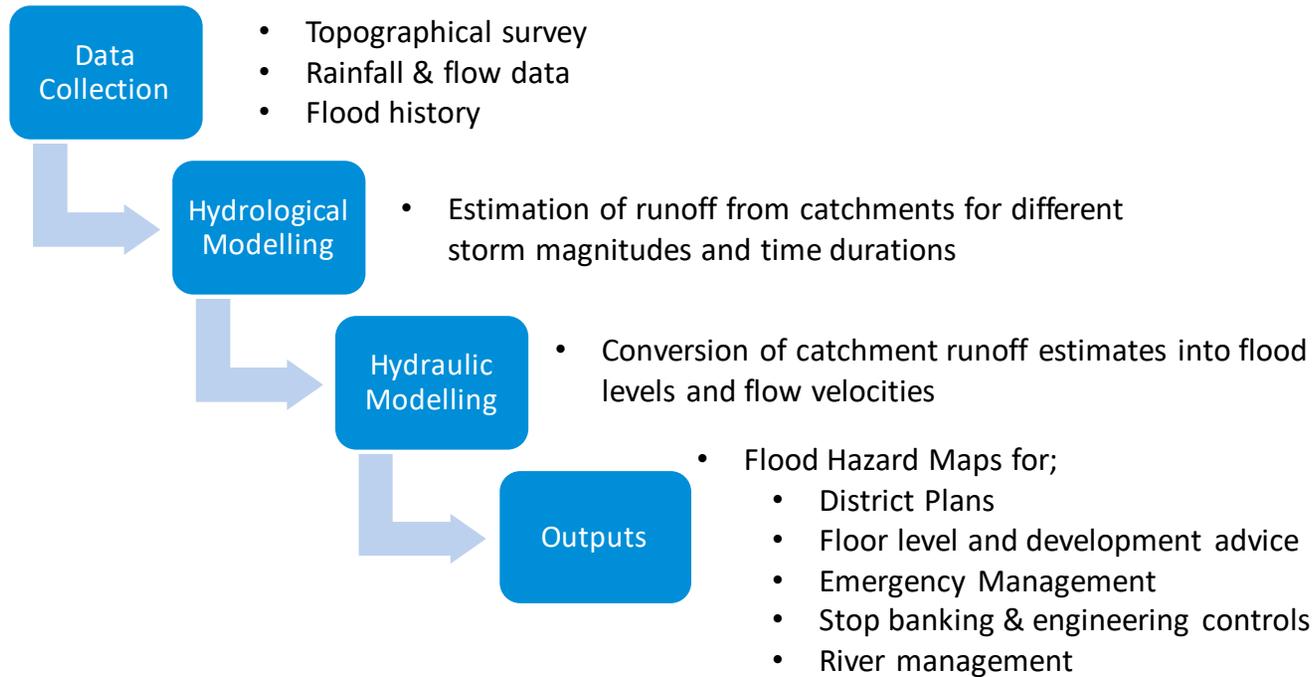
Flood Hazard Modelling – GW’s Process



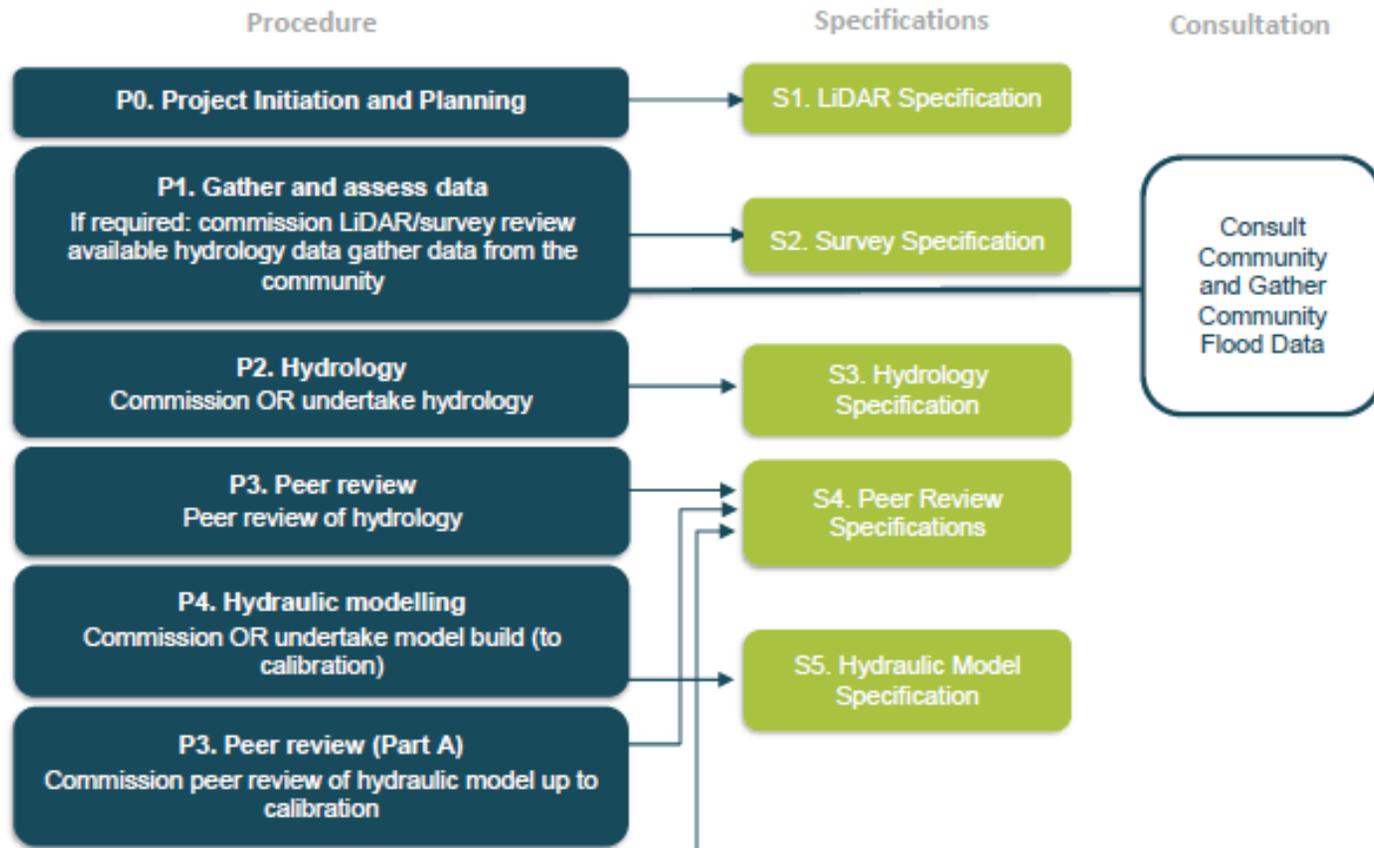
- End to end process for use on all GW modelling
- Be available for communities, partners and suppliers
- Based on lessons learnt and national & international good practice.
- Embed peer review and independent audit
- Promote community involvement
- ‘Living process’ that can be continually improved.

Not a golden bullet but will be an aid to communicate the process we follow and clearly articulate our scope expectations.

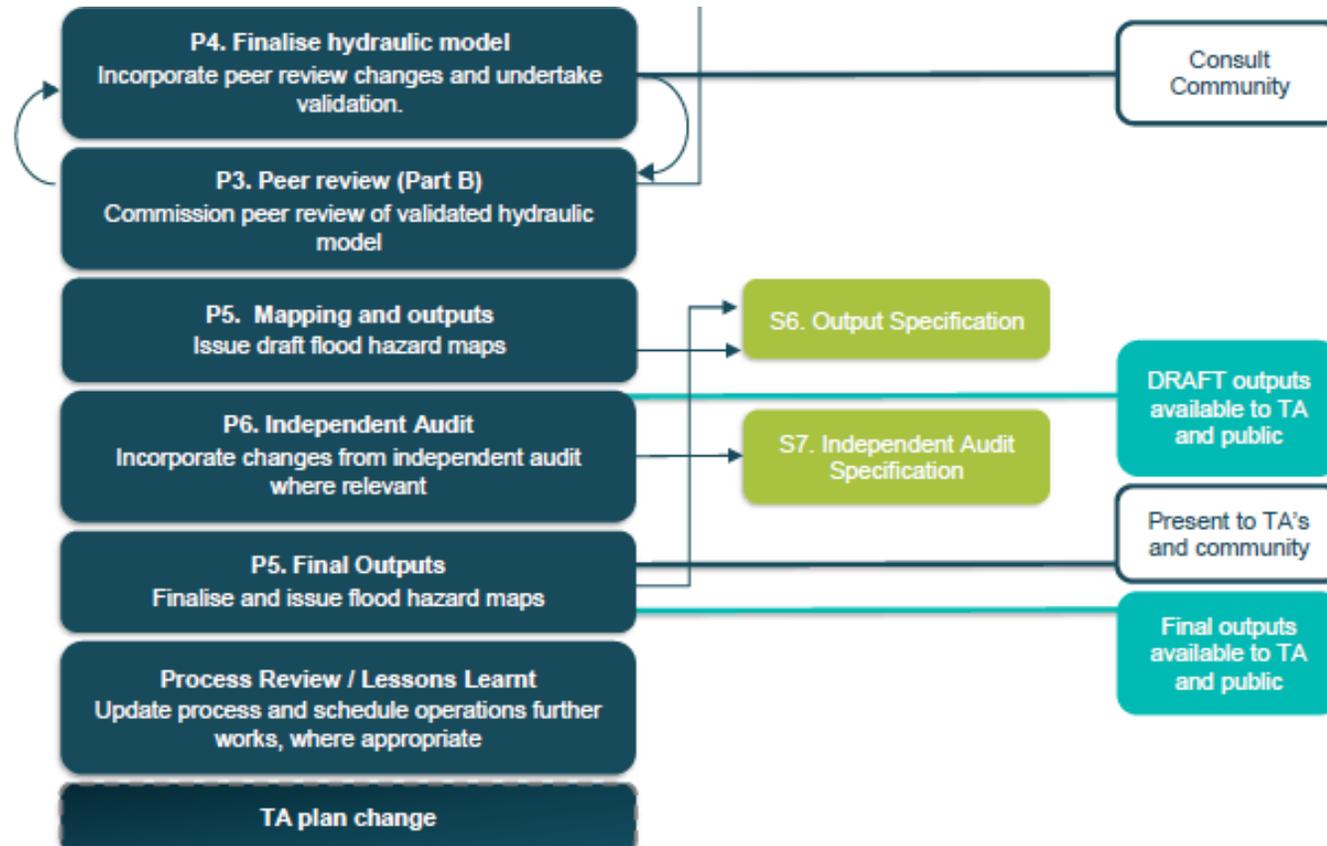
The Process



The Process

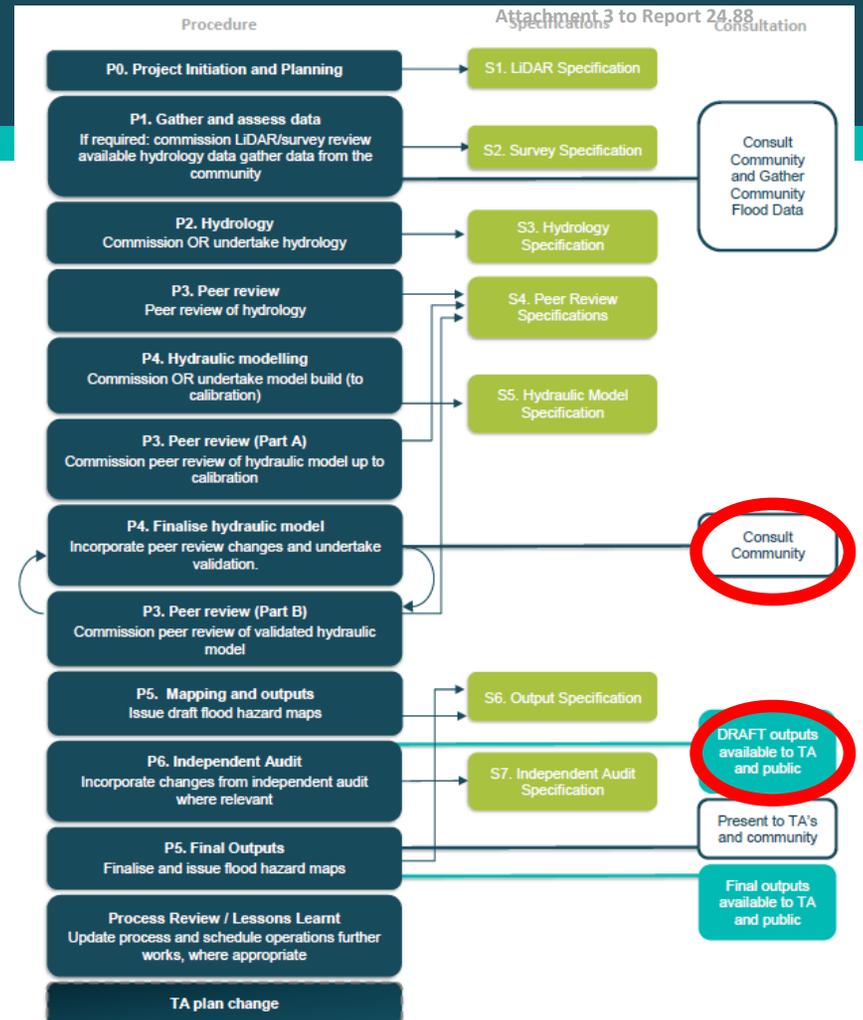


The Process



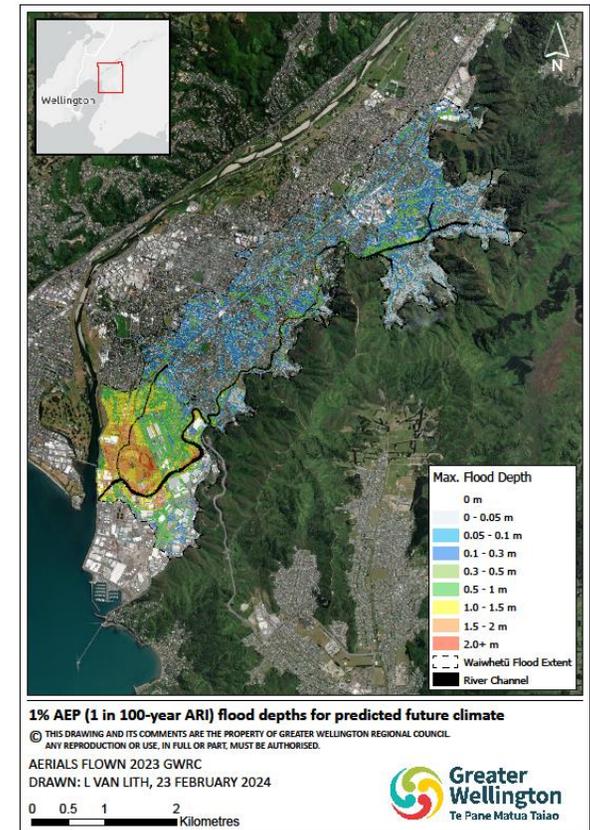
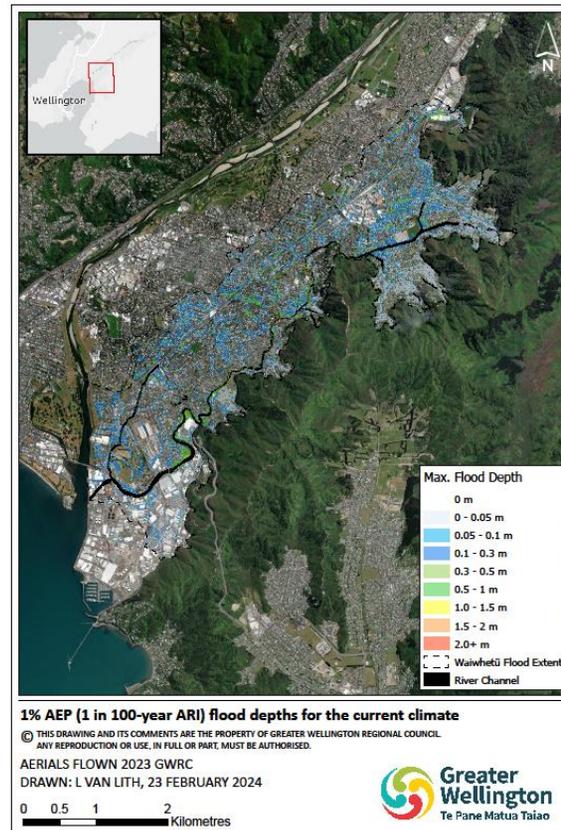
Waiwhetū Flood Modelling Process

- WWL and GW combined process
- One model, two hydrological inputs
- Process almost complete
- Undertaking community engagement



Waiwhetū Flood Maps

- Multiple design events modelled
- Two maps prepared for community engagement
 - 1% AEP current climate
 - 1% AEP predicted future climate



Waiwhetū Flood Map Engagement

- 11-31 March 2024
- Drop in stalls Riverbank Markets 16 & 23 March 2024
- FotWS meeting 11 March
- Waiwhetū walkover 13 March
- Social media posts
- Hutt News ads



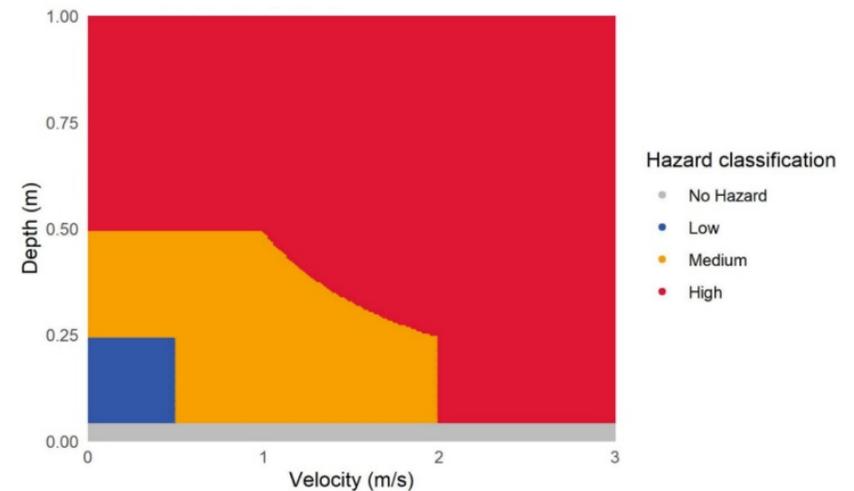
District Plan Flood Hazard Overlays

- Hazard: combination of depth and velocity
- Low, medium and high hazard categories

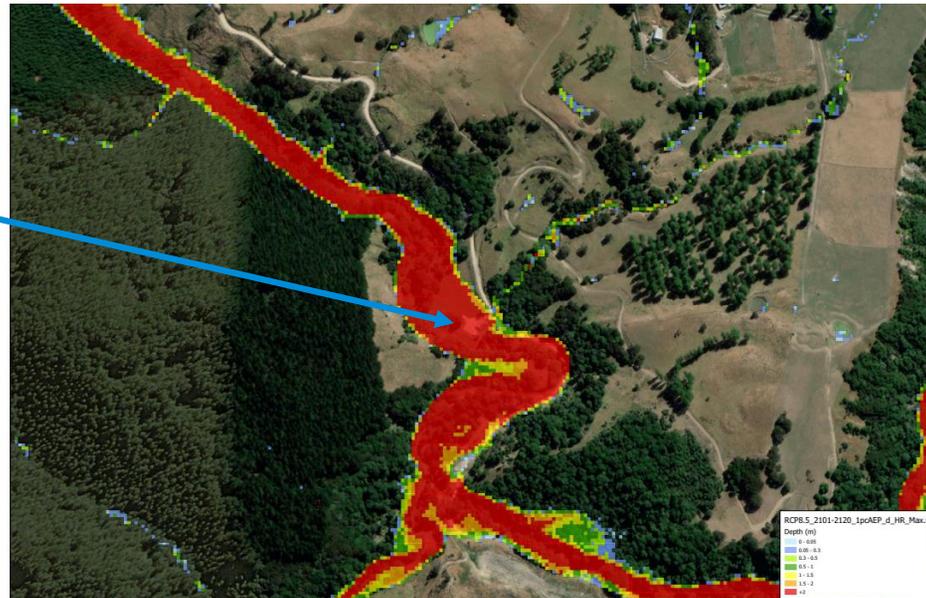
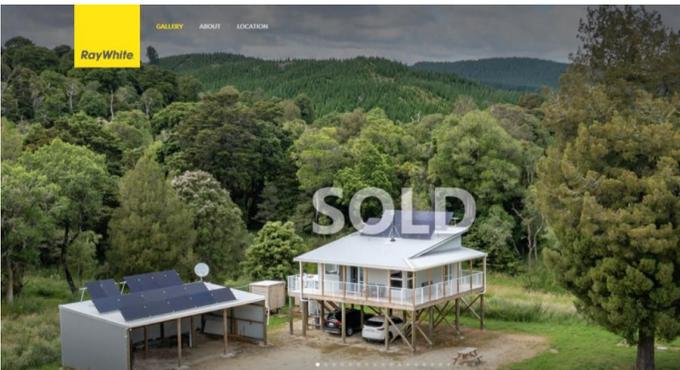
Table 1: Flood hazard categories

Hazard Overlay/ Level	Description	Activity restrictions	Modelled flood hazard threshold		
			Depth	Velocity	Depth x Velocity
Low Hazard Inundation Area	Areas of lower velocity and depth	Development within the Inundation (Ponding) Area presents a lower hazard risk, and therefore a permissive level of consenting with fewer rules is appropriate.	0.05m to 0.5m	< 0.5m/s	or < 0.25m ² /s
Medium Hazard Overland Flowpaths	Areas of lower depth, and moderate velocities	Development within the Overflow Path has more restrictive consenting requirements commensurate with the medium risk.	> 0.25m	> 0.5m/s	or >0.25 m ² /s
High Hazard River / Stream Corridor	Areas with dangerous flow depths and/or velocities	Development within the Stream/River Corridor should generally be avoided and has more extensive consenting requirements	> 0.5m	> 2m/s	or > 0.5m ² /s

Figure 1: Visual representation of hazard classification



Flood Hazard Overlays – Example from Eastern Wairarapa



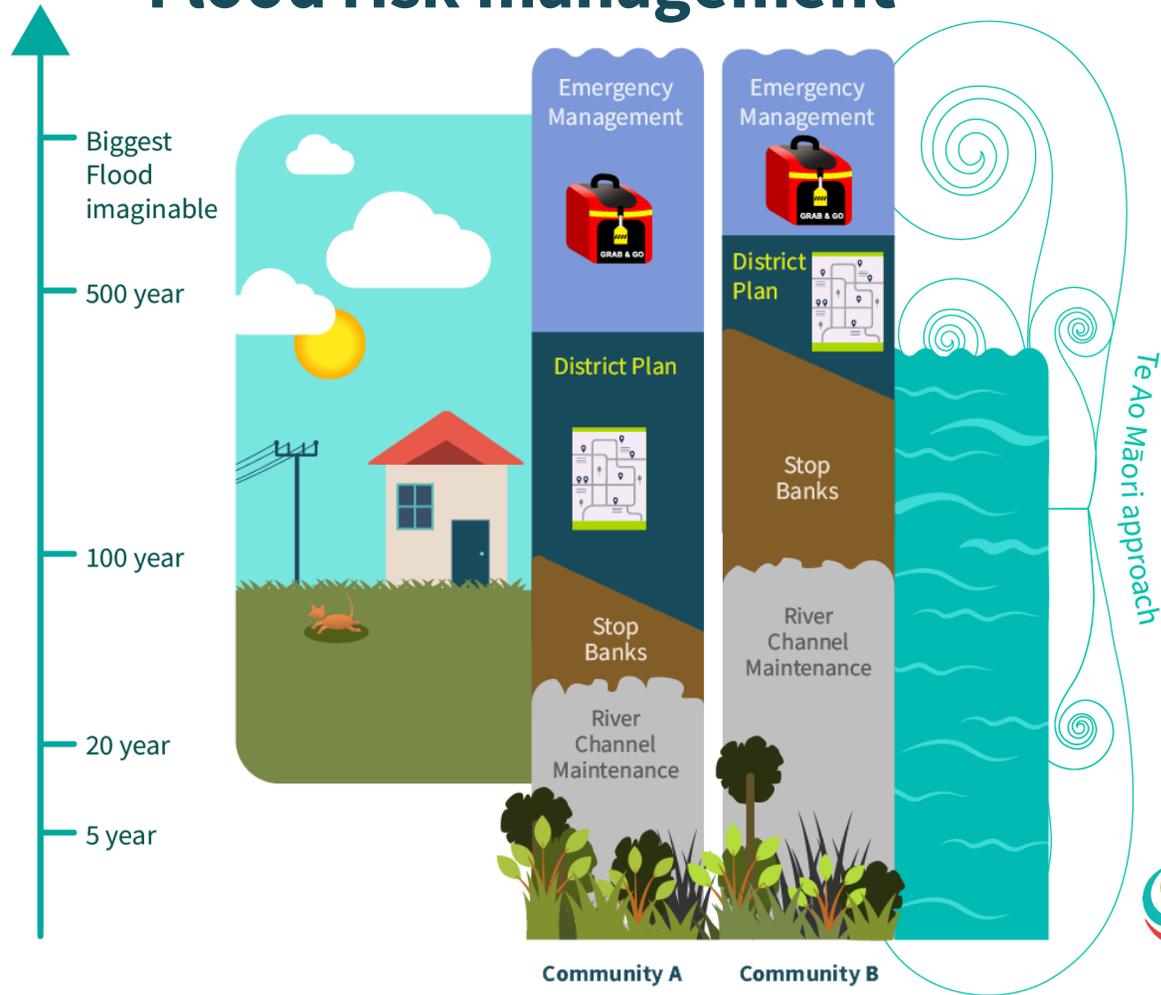
- Built in 2022 with a finished floor above the 1%AEP flood level
- 'The home was built high to maximise sun capture, resulting in under house parking, complimented by a three bay implement shed.' ([82 Te Kanuka Road, Masterton](https://www.82tekanukard.com/) ([82tekanukard.com](https://www.82tekanukard.com/)))
- Modelled flood depths of +2m compared to recent flooding.
- Elevation saved habitable dwelling but was emergency access considered? And are the piled engineered to take debris loading and flood flows?

Managing the flood risk for the Waiwhetū Stream

- Flood in February 2004
- 2010 remedial project improved flood risk to 2.5% AEP
- Previous investigations
- FMP progress put on hold in early 2016
- Consider holistic approach



Flood risk management



Managing the flood risk for the Waiwhetū Stream

- Opportunities for a holistic approach with the new Environment Group
- Delivering wider outcomes in a more integrated way



Te Awa Kairangi / Hutt River Valley Subcommittee
12 March 2024
Report 24.24



For Information

[TE AWA KAIRANGI / HUTT RIVER AND VALLEY FLOOD RISK MANAGEMENT REPORT](#)

Te take mō te pūrongo

Purpose

1. To advise the Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) of progress made to 31 January 2024 in implementing the Hutt River and Pinehaven Stream Floodplain Management Plans.

Te tāhū kōrero

Background

2. Greater Wellington Regional Council (Greater Wellington) has an ongoing programme of projects within the catchments of Te Awa Kairangi/Hutt River and the Pinehaven Stream. The projects are included in or guided by the floodplain management plans and river management schemes for the rivers and streams within these catchments.

Te tātaritanga

Analysis

Te Awa Kairangi / Hutt River

3. Currently, the major focus area within Te Awa Kairangi is RiverLink – the length of river between Kennedy Good Bridge and Ewen Bridge near to Lower Hutt Central Business District. The projects in this section have been combined into the RiverLink project.

Climate Resilience Programme

4. The final steps of handover and financial close out are continuing for a small number of sites (Site 1 – Stokes Valley and Site 13 – Poets Park).

Pinehaven Stream

5. The objective of the planned Pinehaven Stormwater Improvements project is to improve flood level protection by increasing the capacity of the watercourse to achieve a 4% annual exceedance probability (AEP) flow capacity for the upgraded sections and to provide a 1% AEP level of protection for habitable flood levels.
6. The project is being delivered in three distinct sections:
 - a. Upgrading culverts at Sunbrae Drive and Pinehaven Road (this is an Upper Hutt City Council roading renewal project).

- b Enabling works – includes house removal and service relocation/upgrades.
 - c Stream capacity and environmental improvement works – widening the stream, planting, bank stabilisation, retaining walls and earthworks (twelve stages).
7. Staff are working with Upper Hutt City Council and Wellington Water to plan the next stages of work, initially focusing on those that fit within the remaining budget. Current budgets will only enable a portion of the channel works to be completed. Revised estimates to complete the full package of works have been developed, to enable them to be included in Long Term Plan deliberations over the next few months.
 8. An unfortunate fire resulted in significant damage to 28 Blue Mountains Road and has expedited the need to demolish this property. All occupants safely evacuated the property, and staff assisted them to find alternative accommodation. Wellington Water have been asked to manage the demolition.

Operations Delivery

9. Following the successful riverbed recontouring work between Melling Link and Kennedy Good Bridge, and the extraction of 20,000m³ of gravel material used by Te Wai Takamori o Te Awa Kairangi (RiverLink) for pre-loading the eastern stopbank (river side face) upstream of Melling Bridge, planning with the RiverLink team is beginning on extracting more gravel to further reduce the flood risk in this area.
10. The programme of work to rate all the river corridor assets has recently been completed and has been a focus. The data collected from this work will feed into the asset performance report and highlight the level of risk throughout the river system.
11. Greater Wellington Te Awa Kairangi ‘welcome entry’ signage is almost complete with only the Poets Park / Whakatikei area to completed by mid-March 2024. This is part of the wayfinding safe signage system renewal on the Hutt River spaces and takes stock of trail signage and berm signage with some being replaced having met end of life. A new sign at the Belmont Wetland site has also been installed to introduce the site to the public.
12. All planned minor water course blockage and vegetation maintenance has been completed ahead of session rain fall increasing over the autumn and winter months.
13. Routine mowing on the river berm and stopbanks has continued through the summer months.
14. A specific work programme has been developed for river berm tree pruning and removal for the entire length of the Hutt River corridor, this work is programmed for completion in April 2024.
15. Planning will start to begin on the coming planting season in April 2024 and start in June 2024.
16. The rock asset maintenance programme began on 12 February 2024 and is programmed to continue through to May 2024. This work involves re-stacking and placing new rock to 32 rock assets in both the dry and wet channel and triggered the need for a site-specific environmental monitoring plan. To support this work a communications plan has been put in place utilising site signage, newspaper ads and Facebook. Environmental monitoring is also being completed as required by the resource consent.

17. Bike the Trail was held on the 25 February 2024 with approximately 450 cyclists taking part on the river trail ride, who were met at the end with music, ice creams and coffee. A communication article will be released soon to show the success of this event.
18. We are working with Upper Hutt City Council on planning to construct a path access way from McLeod Park to the stopbank, and with Waka Kotahi New Zealand Transport Agency for a new bridge and sealed path at Speedy's Stream at the Kennedy Good Bridge.

Flood Hazard Modelling

19. The flood hazard modelling for the Te Awa Kairangi / Hutt River and Waiwhetū Stream update projects are progressing. A separate report is being presented at this meeting regarding the Waiwhetū flood hazard modelling (*Report 24.88*). Public engagement on the Waiwhetū Stream flood hazard maps is being undertaken between 11 and 31 March 2024.
20. Updated flood hazard overlays for Te Awa Kairangi / Hutt River and the Waiwhetū Stream will be provided to Hutt City Council for inclusion in the proposed District Plan in mid-2024. A key outcome that the information will be used to direct new development on the floodplain away from areas where water would flow across the floodplain in the event of overtopping or failure of the stopbanks.

Ngā hua ahumoni

Financial implications

21. For this reporting period, projects are within the current budgets.

Ngā Take e hāngai ana te iwi Māori

Implications for Māori

22. Greater Wellington is required to manage land and water within a range of statutory requirements, including giving effect to Te Mana o Te Wai and considering Te Tiriti o Waitangi in the development and implementation of the Council's strategies, plans, programmes and initiatives.
23. Implementation with mana whenua partners is guided by Te Whāriki – the new Māori Outcomes Framework as part of Council's Long-Term Plan 2021–31.
24. Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Board.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

25. Each project within the catchment considers and responds to the predicted impacts of climate change when considering the appropriate response to the issue the project seeks to address.
26. This programme aligns with the 2015 Climate Change strategy, which states '*we will help the region adapt to climate change*'. The projects increase climate change adaptation and resilience to natural disasters in the region.

27. The greenhouse gas emissions from rock supply vary depending on the quarry source of the rock and transport to the work sites. Quarry sources for projects vary. The emissions from rock supply production and transport are not presently part of the organisation’s greenhouse gas inventory.
28. Greater Wellington currently assesses options to address flood risk based on the predicted impacts of climate change over the next 100 years. Increased rainfall and sea level rise predictions are assessed on a catchment-by-catchment basis.

**Ngā kaiwaitohu
Signatories**

Writers	Madeliene Playford – Team Leader, Floodplain Management Plan Implementation Francie Morrow – Senior Project Manager – Investigations Hamish Fenwick – Team Leader, Flood Operations Delivery
Approvers	Jack Mace – Hautū Whakatutuki Director Delivery Lian Butcher – Kaiwhakahaere Matua, Taiao Group Manager, Environment

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council’s roles or Committee’s terms of reference</i></p> <p>The Subcommittee’s specific responsibilities include “<i>reviewing periodically the effectiveness of implementation and delivery of Floodplain Management Plans for the Te Awa Kairangi/Hutt River floodplain</i>”.</p>
<p><i>Contribution to Annual Plan / Long term Plan / Other key strategies and policies</i></p> <p>The projects contained within this report deliver on Greater Wellington’s strategic priority area of te tū pakari a te rohe/regional resilience, and support delivery of Greater Wellington’s strategic priority area of te oranga o te wai māori me te rerenga rauropi/freshwater quality and biodiversity.</p>
<p><i>Internal consultation</i></p> <p>Specific projects consult with groups and departments across Greater Wellington where relevant to a project.</p>
<p><i>Risks and impacts: legal / health and safety etc.</i></p> <p>The purpose of implementation floodplain management plans is to reduce the risk to communities and improve the region’s resilience.</p>

Te Awa Kairangi / Hutt River Valley Subcommittee
 12 March 2024
 Report 24.75



For Information

RIVERLINK PROJECT UPDATE REPORT

Te take mō te pūrongo

Purpose

1. To update the Te Awa Kairangi / Hutt River Valley Subcommittee (The Subcommittee) on Riverlink and introduce the report of the project director for Riverlink (**Attachment 1**).

Te horopaki

Context

2. Riverlink is a partnership between greater wellington regional council (Greater Wellington), Hutt City Council (HCC), NZ Transport Agency Waka Kotahi, Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika.
3. Delivery of Riverlink relates to Greater Wellington's strategic priorities for regional resilience and public transport. Strategic priorities for freshwater quality, biodiversity, and multi-modal transport options are also supported by the successful completion of Riverlink.
4. The flood protection components are a key deliverable of the Hutt River Floodplain Management Plan.
5. The objectives for Riverlink are:

Achieve Ora Tangata, Ora Taiao and Ora Wairua	To reorient the city to face and connect with Te Awa Kairangi and respond to climate change by: <ul style="list-style-type: none"> • Providing resilient transport choices allowing all people and businesses to move safely and reliably to, from and within our city centre. • Improving flood protection for the Lower Hutt city centre and areas south of the city to enable better resilience for people and property. • Stimulating and supporting urban regeneration and economic development. Encourage growth and the regeneration of Lower Hutt city centre and promote commercial and residential development.
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Te tātaritanga Analysis

Overall Project

6. The Project Director's report is attached (**Attachment 1**), it provides an overview of what the programme has been focusing on since the last meeting. The key highlights for the overall project and Greater Wellington are summarised below.
7. Partners agreed in December 2023 to extend the Alliance's affordability challenge phase to the end of February 2024 to explore further potential reductions to the overall cost of the programme and each partners scope.
8. Programme partners met with Ministers Brown and Bishop on 20 February 2024, to discuss the project, its affordability challenges, partner responses and a way forward.
9. Through March 2024 programme partners will consider work completed on revisions to the concept design, and changes to design standards, minimum requirements, and interim programme costings. This will include consideration of potential options for alternative delivery of some programme scope elements.
10. Work required to conclude the programme's Interim Programme Alliance Agreement (IPAA) phase, the finalisation of the Programme Alliance Agreement (PAA), and the supporting Partnership Agreement between New Zealand Transport Agency Waka Kotahi (NZTA) and the programme partners, will follow partner deliberations and decisions on programme design, cost, and delivery options.

Greater Wellington

Property

11. A total of 143 properties are being acquired for the RiverLink Project.
 - a 142 properties have now been acquired with 1 land acquisition remaining.
 - b 61 commercial rights (lessee interests, easement interests, business closures and business relocations) have been acquired with 7 lease acquisitions remain (down from 8 last report).
12. Vacant possession secured for:
 - a Area E (85-103 Pharazyn Street)
 - b Area B (even numbers 50-90 Marsden Street)
 - c Area I (7-12 Daly Street)
 - d Area H (39b-56 Mills Street)
 - e Area A(22-77 Marsden Street)
13. In progress: vacant possession for five properties – (down from 8 in the last report)
 - a Area D (64-84 Pharazyn Street) – four tenancies remaining.
 - b Area C (42-62 Pharazyn Street) – four tenancies remaining.
14. Further tenants in lower Daly Street/High Street vacant possession in September 2025 (nine lessees).

Property Relocation and Demolition

15. Since the last report CERES NZ have completed Mills Street demolition and have started on demolition of the Carpet Court building and reconstruction for Repco. Greater Wellington is also now leading the underground demolition across the site which is on track to start in April/May 2024.

Temporary Closure of the Melling Train Line

16. No decision has been yet made on a confirmed timeframe for the start of the 18-month temporary closure of the Melling Train line.

Mills Street Stopbank Construction Early Works

17. The contract has been signed with Fletchers to start work on the construction of the Mills Street Stopbank, with work started on the 26 February with the physical site being handed over to the contractors.
18. A very successful “Sod Turning” was held on 21 February 2024, with representatives from all partners including the Minister for Infrastructure/Hutt South MP, Greater Wellington Council Chair, Hutt City Council Mayor, Mana Whenua, councillors, residents, and staff.
19. With construction starting, which includes gravel extraction, compacting and placement of material this will have the potential to very disruptive at times, albeit for a six month period. Safeguards have been put in place for adjacent properties around vibration and noise.
20. The most significant disruption will be to recreational users of the site between KGB and Melling Bridge as the entire site will be temporarily closed for access. Diversions are in place for cycling, including via the true right bank (SH2 side) of the river and via Connelly Street for walkers. We are looking at what improvements are required to the true right bank to improve surfaces for cycling.

Affordability Challenge

21. As part of the Affordability Challenge all partners are looking closely at their scope and delivery options. To date Greater Wellington has undertaken property purchase and demolition, gravel extraction and now the Mills Street stopbank is ahead of the main programme and is continuing to look at every opportunity to ensure efficient and effective delivery of its scope.

Ngā hua ahumoni

Financial implications

Greater Wellington

22. Greater Wellington has, through its 2021-31 Long Term Plan and subsequent annual planning processes, committed funding of \$295 million to delivery of the flood protection benefits of RiverLink. Further changes to this funding commitment may be necessary prior to signing the funding agreement.

23. These budgets do not include allowances for improvements to facilities related to public transport associated with the relocation of Melling Train Station, as NZTA are responsible for its relocation.
24. Inflation and escalation will need to be adjusted during the project life. The next formal opportunity for this will be through the 2024-34 Long Term Plan. The planning for this is subject to receiving and agreeing a Total Outturn Cost. This process will affect the Long Term Plan numbers, and this is being worked through the Long Term Plan process now.

Hutt City Council

25. Hutt City Council's draft 2024-2034 Long Term Plan (LTP) is currently out for consultation with the community. The draft Long Term Plan includes additional funding for RiverLink. HCC are currently assessing the options for the delivery pathway for their scope of work, in addition to being involved with the overall affordability process for the project.

Ngā Take e hāngai ana te iwi Māori Implications for Māori

26. Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Project Management Board.
27. The Mana Whenua Steering Group established between Waka Kotahi and Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika to oversee Te Ara Tupua, Eastern Bays Pathway has been expanded to include RiverLink.

Ngā āpitihanga Attachments

Number	Title
1	Report of the Acting Project Director, Matt Trlin RiverLink PMO

Ngā kaiwaitohu Signatories

Writers	Tracy Berghan – Manager RiverLink Orla Harkin – Programme Manager HCC
Approvers	Wayne O'Donnell – Programme Director Lian Butcher – Kaiwhakahaere Matua, Taiao Group Manager, Environment

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council’s roles or with Committee’s terms of reference</i></p> <p>Te Awa Kairangi subcommittee’s specific responsibilities include to “review periodically the effectiveness of implementation and delivery of floodplain management plans for the Te Awa Kairangi/Hutt River floodplain”, of which the RiverLink project is part of.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>RiverLink contributes to the delivery of Greater Wellington’s strategic priorities of Regional Resilience, Freshwater Quality and Biodiversity, and Public Transport.</p>
<p><i>Internal consultation</i></p> <p>There was no internal consultation beyond the RiverLink team in preparing this report.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>Escalation and general uncertainties in the construction market will continue for some time and cost pressure on construction will remain.</p> <p>Potential affects in relation to Procurement, Greater Wellington property purchase programme, and the associated reputational risk and costs incurred by early termination of leases and business relocations if construction start delayed.</p>

[Attachment 1 to Report 24.75](#)

Te Wai Takamori o Te Awa Kairangi – Programme Update Report



Date: 26 February 2024

Te Wai Takamori o Te Awa Kairangi – Programme Update Report

1. Purpose

This report provides an update on current progress with Te Wai Takamori o Te Awa Kairangi programme (Te Awa Kairangi)- formerly known as Riverlink.

The report builds on previous reports to Subcommittee, the last being provided in October 2023.

This report should be read in conjunction with the covering report on the Subcommittee's agenda, which provides an update on specific matters as they relate to Greater Wellington Regional Council and Hutt City Council.

2. Background

Te Awa Kairangi is a partnership between Greater Wellington Regional Council (Greater Wellington), Hutt City Council (HCC), Waka Kotahi NZ Transport Agency (Waka Kotahi), Taranaki Whānui and Ngāti Toa Rangitira.

This report covers an update on progress with key current workstreams including:

- Overall progress
- Advance works and investigations
- Progress with the partner agreement
- Communications and engagement
- Ministerial engagement

The report also notes the departure of Rod James as Programme Director.

3. Overall progress

Advance works

The programme's advance works activities, including essential site investigations, and property demolition and site clearance works, are progressing well, meeting budget and time expectations.

Affordability challenge

The Alliance team completed an affordability challenge review of the programme in November, along with an interim desk top cost assessment for programme delivery.

This included identification of potential and possible design refinements and changes across the programme for partner consideration and agreement.

Programme partners agreed in December that the interim cost assessment produced for the programme, even with identified refinements, was unaffordable

Attachment 1 to Report 24.75

Te Wai Takamori o Te Awa Kairangi – Programme Update Report

and not able to demonstrate value for money.

Partners subsequently extended the affordability challenge phase to the end of February 2024, allowing the Alliance and partners to explore further potential reductions to the cost of the programme and each partner's scope.

Programme partners will, through March 2024, consider revisions to the concept design, along with proposed changes to design standards, minimum requirements, potential consenting variations/changes, and interim programme cost assessments.

Partners will also consider potential options for alternative delivery of some programme scope elements, including delivery phasing and/or deferral.

Proposed changes requiring decisions by Council partners will be considered through appropriate channels through March and April.

Programme Alliance Agreement

Work required to conclude the programme's Interim Project Alliance Agreement (IPAA) phase, the finalisation of the Project Alliance Agreement (PAA), and the supporting Partnership Agreement between NZTA and the programme partners, has been deferred while programme partners and the Alliance team work to resolve affordability challenges.

This work will resume following partner deliberations and decisions on programme design, cost and delivery options. Partners are expected to confirm, by or before late March/early April 2024, a revised date for finalising a PAA.

This will include confirming the basis for pricing, and exchange with independent estimators for market testing. This process will provide a final target outturn cost for the programme.

4. Advance works and investigations

We are continuing to make progress with a range of advance works and investigations.

Demolition

Demolition activities are running on time and underbudget and are expected to be completed well ahead of Alliance commencement.

Practical completion of programme demolition works has been achieved for various sites in Pharazyn, Daly and Mill Streets.

Required demolition works in Marsden Street are underway, with demolition of 90 Marsden Street and the old Police Barracks building remaining. Programme personnel are currently working with demolition site neighbouring commercial properties for some sites on Marsden Street, where challenges with assuring continued access for neighbouring operations, during demolition, may delay demolition start.

Rutherford Street demolition is underway. At the time of writing this update this work was scheduled to be completed by 5 March, ahead of substantive Mills Street stopbank works commencing.

Attachment 1 to Report 24.75

Te Wai Takamori o Te Awa Kairangi – Programme Update Report

Mills Street Stopbank- Sod Turning, mobilisation, consenting and approvals

A sod turning ceremony was held on 21 February 2024, involving Local MP Minister Hon. Chris Bishop, and programme partners.

Management plans for enabling Mill Street Stopbank construction have either been certified, or at the time of writing this report, were expected to be certified to enable mobilization works to commence from 26 February.

Works will also require part of the Hutt City Cycle trail to be closed from later in the week of 26th February. Despite communication efforts with signage, letter drops, website notifications and consultation with the Project Design Liaison group (PDLG), some negative community feedback to this work and shop term closure of the cycle way is expected.

Engagement with stakeholders is also underway to support securing relevant environment approvals for enabling 60,000m³ of material to be transferred from upstream of Kennedy Good Bridge for use in stop bank construction.

Skate Park

CONVIC (specialist award winning skatepark designers) has been appointed as the relocated skate park designer by HCC and NZTA.

Work is now underway on design and related community engagement activities for the relocated skatepark.

Environmental assessments – Site Investigations Pharazyn/Marsden Streets

Site investigations are being prepared to enable below ground demolition works to occur.

Works will be staged to enable below ground demolition on residential properties to occur ahead of commercial properties, to manage contamination risk.

Wildlife permits

The programme is waiting on a Wildlife Permit from DoC (lodged October 2023), for undertaking site works that may impact lizards.

While this has been escalated within DoC, early indications are that approvals could take a further 3-4 months to secure. If lizards are found in any work areas, work must stop until a permit is obtained.

To mitigate work disruption associated with lizard finds, a lizard survey has been undertaken of the project area. Areas where lizards have been found will be isolated from site works until the Wildlife Permit is obtained.

5. Partner Agreement

Work on the detailed Te Awa Kairangi Partner Agreement has been paused while programme partners and the Alliance team work to resolve affordability challenges with the programme.

Finalisation of the partner agreement will resume following partner deliberations

Attachment 1 to Report 24.75

Te Wai Takamori o Te Awa Kairangi – Programme Update Report

and decisions on programme design, cost and delivery options.

6. Communications and engagement

Communications and engagement activities have included:

- **Skatepark:** A contractor has been engaged for design of the skatepark. Engagement has commenced with communities of interest such as the skater, disability and school communities. Engagement will continue with these groups throughout the skateparks design phase.
- **Project Design Liaison Group:** A January meeting of the Project Design Liaison Group (PDLG) covered utilities, pavement and geotech investigations, an update on Parliament St, the Mills St stopbank design and plans for cycleway diversions. A March PDLG meeting will address potential changes to design or delivery of walking and cycling elements in response to affordability challenges. This is expected to generate intense interest and engagement.
- **Containers for public engagement:** Containers used for the salvage day event in October, are being repaired and painted for further public engagement, with plans for one to be sited on the Dulux site and another to be located elsewhere on the construction site. Dates for the location of these containers are to be confirmed. HCC has indicated a preference for a container to be sited within the city centre for a period.
- **Street closures:** Letters regarding street closures on Daly St, Andrews Ave, Margaret St and the south end of Rutherford and High streets were distributed the week beginning 19 February with site investigations getting under in late February
- **Mills Street Stopbanks Sod turning:** A sod-turning to celebrate the start of the Mills St stopbank construction was held on 21 February. This was well received by the community.
- **Programme awareness- Bike the trail:** The programme's communication and engagement team had a presence at the finish line of *Bike the Trail* on Sunday 25 February, a family-friendly cycling event from Harcourt Park to Riverbank carpark.
- **Hutt Valley Chamber of Commerce:** The HVCC breakfast scheduled for 23 February has been postponed to a later yet to be confirmed date in late March/April. This will be used to update attendees on programme progress and expected timelines over the coming months.
- **Media coverage and Councillor updates:** Media coverage on project costs, affordability and progression of flood protection works has continued to generate a range of requests for comment. NZTA, HCC and GW received regular media queries from the Post over January and February. The most recent, on Friday 16 February, resulted in an article that was published on Monday February 19, covering the commencement of stop bank works. Coverage of the 21st February Sod turning was published in the Post on 21 February. Councillors are being provided with a monthly update on the programme based around the content of the Hutt News. Councillors have received the latest update for February.

Attachment 1 to Report 24.75

Te Wai Takamori o Te Awa Kairangi – Programme Update Report

- **Social media:** The programme is continuing to provide regular posts about work on site (environmental, geotechnical etc) and project progress (community updates).

7. Ministerial engagement

Programme partners led by Mayor Barry (HCC), Chair Ponter (GW), Brett Gliddon, Group GM Transport (NZTA), and Will Peet (Programme Governance Group Chair), collectively met with Ministers Brown (Min Local Government, Min Transport) and Bishop (Hutt MP, Min Infrastructure) for the first time on 20th February to discuss the programme, the partnership, cost challenges, partner responses and way forward.

Discussion points covered: the program’s need; the projects complex location and construction challenges; coordination and integration benefits of the programme partnership; programme consenting; advance works progress; the progression of the Alliance; Funding Assistance Rates (FAR) for HCC components of the programme; Melling Station relocation; the Pedestrian and Cycling bridge link to the Hutt City Centre; programme and partner affordability challenges; and, the advancement of the Mills Street Stopbank works, and its Sod turning event (on the 21 February).

Both ministers appreciated being able to meet and discuss the programme, its context, challenges, next steps and hearing where they could potentially assist programme partners.

8. People changes

Rod James stepped down as Programme Director for Te Awa Kairangi on 24th November 2023 to pursue another business opportunity.

The programme team would like to thank and acknowledge Rod for his time and contribution as Programme Director- Te Awa Kairangi. In particular, Rod’s support and assistance through the Alliance development and procurement process, his oversight and management of the Programme Management Office and team and his guidance and oversight in establishing and progressing the programme’s advance works. The latter has most recently supported the timely, and to budget, progression of key advance site demolition and clearance works, preparing the ground for the delivery of substantive programme works.

The programme, the alliance teams and partners all wish Rod the very best with his new venture.