Proposed Plan Change 9

Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments

Hawke's Bay Regional Resource Management Plan

BLACK TEXT - Decision Version 9 September 2022

RED TEXT – Consent Order Version 17 September 2025

(formatting changes agreed through mediation have been incorporated but are not shown in red text)

Note:

- Where an entire provision is shaded grey, the parties have agreed the wording of that provision in full and no appeal points on it remain.
- Where only part of a provision is shaded grey, the parties have agreed that part only.

Contents

Amendments Proposed in Plan Change 9

The Proposed Plan Change makes the following amendments to the Regional Resource Management Plan.

Chapter 5.10 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments

A new chapter 5.10 inserts objectives and policies for the management of land and water in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū (TANK) Catchments.

This Plan Change also makes consequential amendments to parts of Section 5 of the Regional Resource Management Plan.

Chapter 6.9 Regional Rules

A new section 6.10 inserts new rules to manage land and water resources in the TANK catchments.

This Plan Change also makes consequential amendments to existing rules in Chapter 6. These amendments apply only where the activity is carried out in the TANK catchments.

Schedules

New Schedules 26 – 34 are inserted to support policy and rules.

Chapter 9 Glossary

New terms are inserted to support interpretation of the Plan.

Proposed Plan Change PC9 to the Hawke's Bay Regional Resource Management Plan – TANK Catchments

Insert at the end of Chapter 5 the following new chapter:

5.10 Introduction

Freshwater is essential to the region's economic, environmental, cultural and social well-being. The way in which these well-beings are provided for is informed by how the values for freshwater are understood and identified. Figure 1 provides an illustration of the wider community values for the TANK freshwater bodies expressed across the four well-being domains.

This Plan also recognises Te Mana o te Wai, which puts the mauri of the waterbody and its ability to provide for te hauora o te tangata (the health of the people), te hauora o te taiao (health of the environment) and te hauora o te wai (the health of the waterbody) to the forefront of freshwater management.

Water is viewed as a taonga by Māori; a treasure where mauri and ecosystem health are protected and provided for. Mauri is a spiritual value that is manifested by abundant and healthy water and aquatic resources, including plants and animals that depend on water.

Figure 2 below shows the interrelated nature and cultural connections of the values held by Māori for water. These core values are underpinned by a philosophy of etiquette, customs, harmony and timing.

The two expressions of the values for freshwater complement and build on each other. They enable the directions of the National Policy Statement for Freshwater Management to be given effect to and ensure the Plan provides for all of the community's values.

Figure 1: community values and attributes for water management

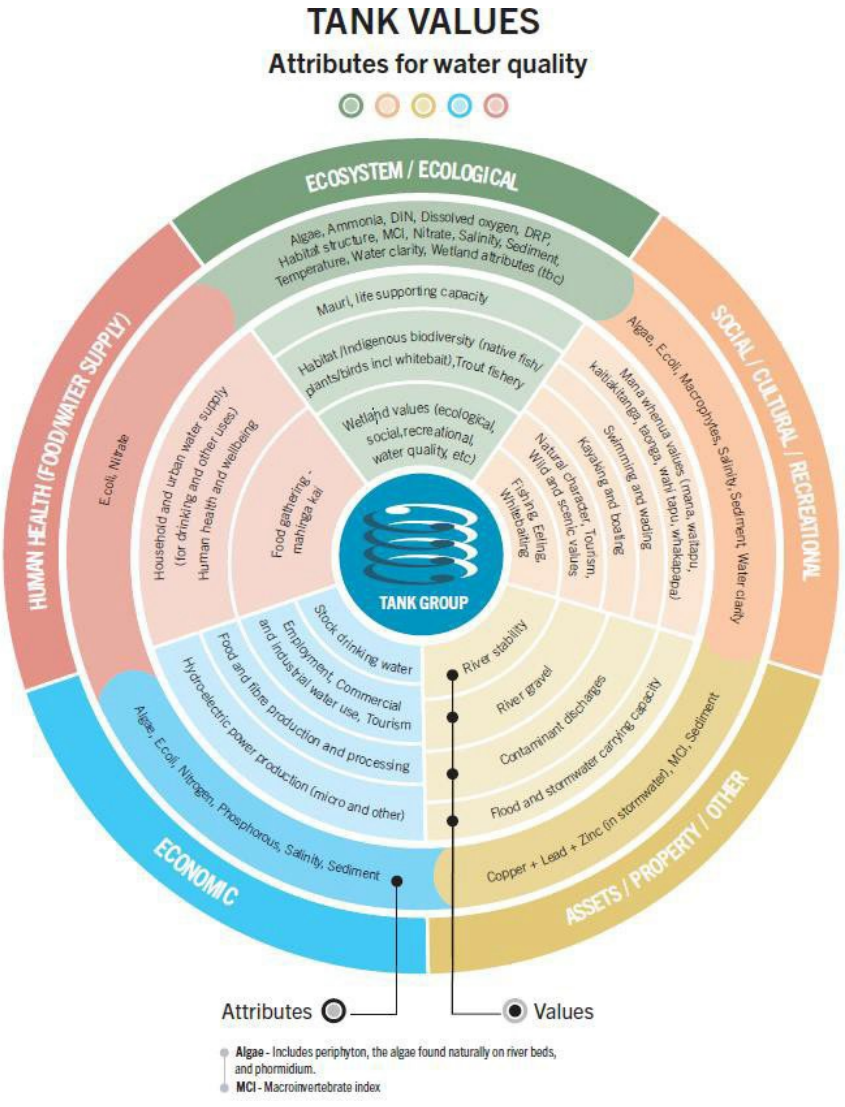
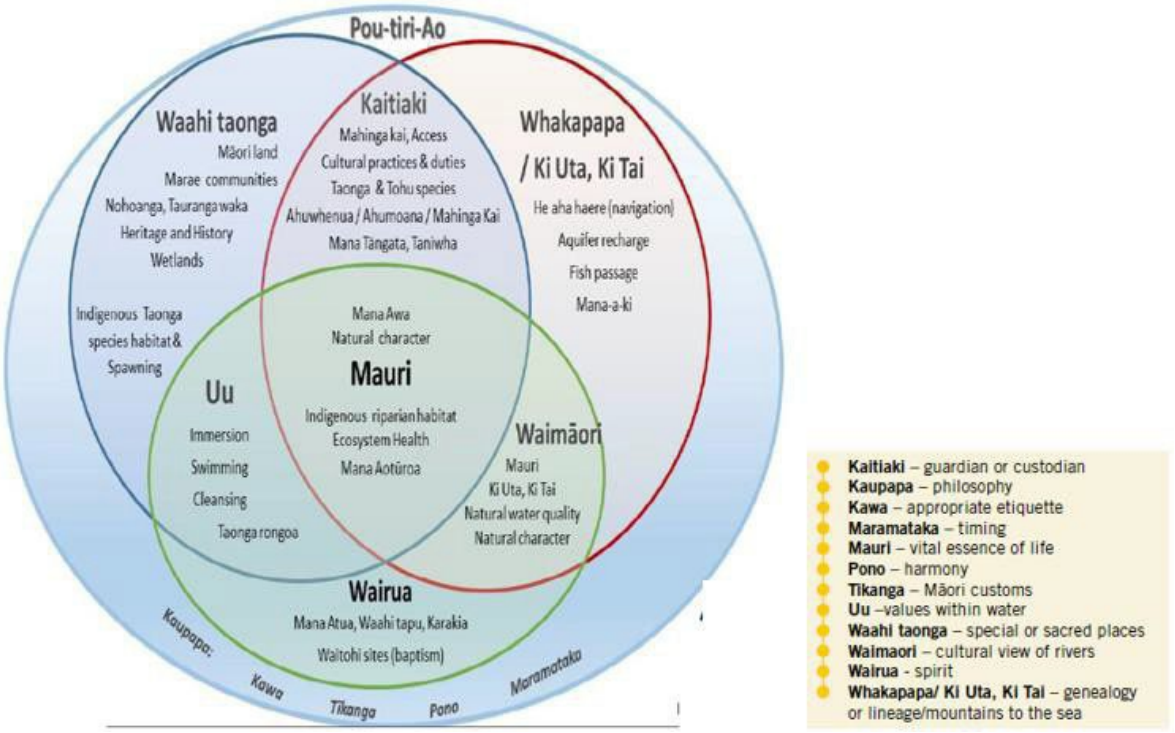


Figure 2: Wāriu (value) groups and aspects for management



This articulation of community and Māori values has enabled decisions to be made about the use and management of waterbodies of the TANK catchments.

The Plan focuses on all the values for which water is to be managed by the setting of objectives, limits and other management measures that enable the needs of those values to be met. It also acknowledges the wider tikanga Māori perspectives that support Māori values for water management and ensures the outcomes that are being sought are consistent with tikanga.

Key attributes that allow the state of the values to be assessed and monitored have been developed and objectives established for them. Attributes for both water quality and water quantity have been identified and the desired attribute state has been agreed. For some water bodies, the desired state meets the actual state, however, for others, the state is less than desired and the plan provides measures and introduces new rules that will enable the objectives to be met. This includes objectives for water quality attributes as well as limits and flows for managing quantity of water.

a)

5.10.1 TANK Objectives

Overarching Objective

OBJ TANK 1 Land and freshwater in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments are sustainably managed as integrated natural resources ~~so that~~ to give effect to Te Mana o te Wai by prioritising:

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

~~a) Te Mana o te Wai and, ki uta ki tai (mountains to the sea) are upheld and recognised~~
~~b) The interconnectedness between land and water and between surface water and groundwater are recognised~~
~~c) Indigenous biodiversity is protected and life-supporting capacity and the aquatic ecosystem processes are safeguarded~~
~~d) outstanding water bodies in Schedule 25 and the values in the plan objectives are appropriately protected and provided for~~

~~and that:~~

~~e) the kaitiaki responsibilities of tangata whenua to land and freshwater and cultural connection are recognised and provided for~~
~~f) tangata whenua are supported in carrying out cultural practices with respect to water management in their rohe.~~

5.10.2

OBJ TANK 2 Mauri enhancement and ecosystem health outcomes are achieved through:

~~a) Collectively managing all of the specified attributes described in Schedule 26~~
~~b) Establishing and implementing minimum flows and allocation limits in rivers and streams~~
~~c) Establishing an interim allocation limit of 90million cubic metres per year for takes of groundwater~~
~~d) Allocating water based on Actual and Reasonable use~~
~~e) Flow enhancement schemes.~~

a) Recognising ki uta ki tai and the interconnectedness of land and water and the particular connections between groundwater and surface water in these catchments
b) Protecting indigenous biodiversity and safeguarding the life-supporting capacity of aquatic ecosystems
c) Collectively managing all of the specified attributes described in schedule 26
d) Providing for values identified in schedule 26
e) Establishing limits (including targets and minimum flows where appropriate) for groundwater and surface water
f) Sustainably allocating water
g) Protecting the outstanding and significant values of the Outstanding Water Bodies identified in Schedule 25
h) The matters identified in OBJ 2A

OBJ TANK 2A The relationships, culture, traditions, and tikanga of tangata whenua with their ancestral waters, wāhi tapu, and taonga are recognised and provided for by:

a) Active protection and restoration of their ancestral freshwater resources including wāhi tapu and taonga;

b) Recognition of their mana and rangatiratanga and exercise of Kaitiakitanga over their ancestral freshwater resources, wāhi tapu and taonga;

c) Mauri tū, Mauri oho, Mauri Ora (improve and provide for) the mauri, mana and oranga of Atua, taonga species, ecosystems and waters within the TANK catchments and the Heretaunga muriwaihou so that customary practices can be undertaken, including mahinga kai.

Climate change

OBJ TANK 3 Climate change and social, cultural, economic and ecosystems resilience are ~~is~~ taken into account when making decisions about land and water management within the TANK catchments.

Water Quality General

OBJ TANK 4 The quality of the TANK freshwater bodies and estuaries is maintained where objectives are currently being met, or is improved ~~in~~ where degraded ~~waterbodies~~ so that they meet target attribute states in Schedule 26 by 2040 provided that:

a) ~~for any specific water body~~ where the attribute state is found to be higher than the target attribute state given in Schedule 26, the higher state is to be maintained
b) progress is made over the life of this Plan towards the long term target attribute states by the mixture of regulatory and non-regulatory provisions in this Plan.

OBJ TANK 4A No degradation of existing groundwater quality in aquifers in the Heretaunga Plains aquifer system.

OBJ TANK 5 Riparian margins are protected or improved where necessary to provide for aquatic ecosystem health and mauri of water bodies in the TANK catchment and to:

a) reduce effects of contaminant loss from land use activities
b) improve aquatic habitat and protect indigenous species including fish spawning habitat
c) reduce stream bank erosion
d) enhance natural character and amenity
e) improve indigenous biodiversity
f) reduce water temperature in summer
g) reduced nuisance macrophyte growth.

OBJ TANK 6 Activities in source protection areas for Registered Drinking Water Supplies do not cause source water in these areas to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed·

Catchment Objectives

OBJ TANK 7 In combination with meeting the target attribute states specified in Schedule 26 the mauri, water quality and water quantity of the **Ahuriri** ~~freshwater~~ catchments are maintained and enhanced where necessary to enable:

a) ~~Ahuriri estuary sediments to be healthy and not accumulate excessively~~ sedimentation to be reduced
b) healthy ecosystems
c) healthy and diverse indigenous aquatic plant, fish and bird populations
d) maintenance of natural character
e) people and communities to safely meet their domestic water needs
f) primary production water for community social and economic well-being;

and provide for

g) contribution to the healthy functioning of the Te Whanganui a Orotū (Ahuriri) estuary ecosystem and enable people to safely carry out a wide range of social, cultural and recreational activities including swimming and the collection of mahinga kai in the estuary.

OBJ TANK 8 In combination with meeting the target attribute states specified in Schedule 26, the mauri, water quality and water quantity in the **Ngaruroro River** catchment are maintained in the mainstem above the Whanawhana Cableway and in the Taruarau River, and are improved in the tributaries and lower reaches where necessary to enable:

a) healthy ecosystems
b) healthy and diverse indigenous aquatic plant, animal and bird populations especially whitebait, torrent fish, macroinvertebrate communities, bird habitat on braided river reaches and a healthy trout fishery
c) people to safely carry out a wide range of social, cultural and recreational activities especially swimming and cultural practices of Uu and boating, including jet-boating in the braided reaches of the Ngaruroro
d) protection of the natural character, instream values and hydrological functioning of the Ngaruroro mainstem and Taruarau and Omahaki tributaries
e) collection of mahinga kai to provide for social and cultural well-being
f) people and communities to safely meet their domestic water needs
g) primary production, industrial and commercial water needs and water required for associated processing and other urban activities to provide for community social and economic well-being

and provide for:

h) contribution to water flows and water quality in the connected Heretaunga Plains Aquifers
i) contribution to the healthy functioning of Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of mahinga kai in the estuary.

OBJ TANK 9 In combination with meeting the target attribute states specified in Schedule 26, the mauri, water quality and water quantity in the **Tūtaekurī River** catchment are maintained in the upper reaches of the mainstem and are improved in the tributaries and lower reaches where necessary to enable:

a) healthy ecosystems
b) healthy and diverse indigenous aquatic and bird populations, especially whitebait, torrent fish, macroinvertebrate communities and a healthy trout fishery
c) people to safely carry out a wide range of social, cultural and recreational activities, especially swimming and cultural practices of Uu and boating
d) protection of the natural character, instream values and hydrological functioning of the Tūtaekurī mainstem and Mangatutu and Mangaone tributaries
e) collection of mahinga kai to provide for social and cultural well-being people and communities to safely meet their domestic water needs
f) primary production, industrial and commercial water needs and water required for associated processing and other urban activities to provide for community social and economic well-being

and provide for:

g) contribution to the healthy functioning of Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of mahinga kai in the estuary.

OBJ TANK 10 In combination with meeting the target attribute states specified in Schedule 26, the mauri, water quality and water quantity in the **Karamū and Clive Rivers** catchment are improved to enable:

a) healthy ecosystems
b) healthy and diverse indigenous aquatic and bird populations, especially black pātiki, tuna and whitebait, and healthy macroinvertebrate communities
c) people to safely carry out a wide range of social, recreational, and cultural activities, including swimming and cultural practices of Uu and rowing and waka ama in the Clive/Karamū
d) collection and consumption of kai to provide for social and cultural well-being
e) people and communities to safely meet their domestic water needs
f) primary production, industrial and commercial water needs and water required for associated

processing and other urban activities to provide for community social and economic well-being

and provide for:

g) contribution to the healthy functioning of the Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of kai in the estuary.

OBJ TANK 11 In combination with meeting the target attribute states specified in Schedule 26 the mauri, water quality, water quantity and groundwater levels are maintained in the **Groundwater** connected to the Ngaruroro, Tūtaekurī and Karamū rivers and their tributaries is managed to enable:

a) people and communities to safely meet their domestic water needs and to enable the provision of safe and secure supplies of water for municipal use
b) primary production, industrial and commercial water needs and water required for associated processing and other urban activities to provide for community social and economic well-being

and provide for:

c) the maintenance of groundwater levels at an equilibrium that accounts for annual variation in climate and prevents long term decline or seawater intrusion
d) contribution to water flows and water quality in connected surface waterbodies.

OBJ TANK 12 Wetland and waahi taonga within the TANK catchments are managed so that mauri, water quality and flows, and levels are protected, maintained and improved to ~~enable~~:

a) provide for healthy and diverse indigenous fish, bird and plant populations in wetland and lake areas and connected waterways
b) improve~~d~~ hydrological functioning in wetland~~s~~, ~~and~~ lakes and ~~in~~ connected waterways
c) enable people to safely carry out a wide range of social, recreational and cultural activities
d) ~~mahinga kai to~~ provide for mahinga kai ~~social and cultural well-being~~
e) contribut~~eion~~ to improved water quality in connected surface waters
f) ~~the protection of~~ protect the ~~outstanding~~ extents and values of lakes and ~~those~~ wetlands, including those ~~and lakes~~ listed in Schedule 25.

and ~~to~~:

g) increase the total wetland area by protecting and restoring a minimum of 200ha hectares of existing wetland and reinstating or creating a minimum of 100ha of additional wetland by 2040.

Water quantity

OBJ TANK 13 Ground and surface water in the TANK Catchments are allocated, subject to limits, targets and flow regimes which provide for the values of each water body, in the following priority order:

a) The reasonable domestic needs of people, livestock drinking and fire-fighting supply
b) Existing and future demand for domestic supply including marae and papakāinga, and municipal uses ~~as described in HPUDS (2017)~~
c) Primary production on versatile land
d) Other primary production, food processing, industrial and commercial end uses
e) Other non-commercial end uses.

OBJ TANK 14 The allocation and use of water results in:

a) the development of Māori economic, cultural and social well-being supported through regulating the use and allocation of the water available at high flows for taking, storage and use
b) water being available for abstraction at agreed reliability of supply standards
c) efficient water use
d) efficient and effective allocation management regimes.

OBJ TANK 15 The current and foreseeable water needs for mauri, mahinga kai, and ecosystem health and of future generations are secured through phasing out existing over-allocation and avoiding future over-allocation, supported by:

~~a) avoiding future over-allocation and phasing out existing over-allocation~~
a) water conservation, water retention in the landscape, water use efficiency, and innovations in technology and management
b) flexible water allocation and management regimes
c) water reticulation
d) aquifer recharge ~~and flow enhancement~~ with a preference for natural aquifer recharge
e) flow augmentation, where appropriate
f) water harvesting and storage, in appropriate locations
g) riparian and wetland restoration.

5.10.1 Policies: Surface Water and Groundwater Quality Management

General

POL TANK 1 Freshwater management in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments will be achieved by the Council, tangata whenua and the urban and rural community working together in a way that:

a) recognises tangata whenua as kaitiaki and other resource users as stewards and the responsibilities they each have in freshwater management
b) recognises the importance of monitoring, resource investigations and the use of mātauranga Māori to inform decision making and limit setting for sustainable management
c) ensures good land and water management practices are followed and where necessary, mitigation or restoration measures adopted
d) supports good decision making by resource users.

Adaptive and Priority Management Approach to Nutrient and Contaminant Management

POL TANK 2 The Council will regulate land use activities and will work with tangata whenua, landowners, local authorities, industry and community groups, and other stakeholders to manage land use activities so that existing water quality is maintained in its current state or improved to meet target attribute states shown in Schedule 26 by focusing on:

a) water quality improvement in priority catchments (as described in Schedule 27) where water quality is not meeting specified freshwater quality targets
b) sediment management as a key contaminant pathway to also address phosphorus and bacteria losses
c) the significant environmental stressors of excessive sedimentation and macrophyte growth in lowland rivers and nutrient loads entering Te Whanganui ā Orotū (Ahuriri) and Waitangi estuaries
d) the management of riparian margins
e) the management of urban stormwater networks and the reduction of contaminants in urban stormwater
f) the protection of water quality for domestic use and registered drinking water supplies.
g) ensuring no degradation of existing groundwater quality in aquifers in the Heretaunga Plains aquifer system

POL TANK 3 In the **Clive/Karamū Rivers** and their tributaries, in addition to POL TANK 2 the Council will work with tangata whenua, landowners and the Hastings District Council to:

a) reduce water temperature and increase the level of dissolved oxygen by:
    i. the establishment of riparian vegetation to shade the water and reduce macrophyte growth while accounting for flooding and drainage objectives
    ii. reducing excessive macrophyte growth by physical removal of aquatic plants in the short term
b) adopt flow management regimes to remedy or mitigate the effects of surface and ground water abstraction
c) reduce the amount of sediment and nutrients entering the freshwater from adjacent land
d) improve stormwater and drainage water quality and the ecosystem health of urban waterways and reduce contamination of stormwater associated with poor site management practices, spills and accidents in urban areas (refer also to POLs TANK 26 -29).

~~**POL TANK 4** In **lakes and wetlands** in the TANK Catchments, in addition to POL TANK 2 the Council will work at a catchment scale with land owners in the wetland or lake catchments (refer also to POLs TANK 21 to 23) to:~~

~~a) reduce sediment and nutrient inputs into the waterbody~~
~~b) improve water quality by increasing macrophyte plant growth in shallow lakes~~
~~c) improve ecosystem health and water quality by excluding stock and improving riparian management~~
~~d) meet target attribute states in Schedule 26 for water bodies downstream of the lake or~~

~~wetland~~

~~support and assist landowners to protect, increase or restore existing wetlands or create new wetlands including for the management of urban stormwater.~~

POL TANK 5 In the **lower Ngaruroro and Tūtaekurī Rivers** and their tributaries, in addition to POL TANK 2 the Council will work with landowners to:

a) improve water clarity and reduce deposited sediment by reducing the amount of sediment being lost from land

b) reduce risk of proliferation of algae by reducing nutrient losses from land, including by reducing phosphorous loss associated with sediment

c) improve ecosystem health and water quality by excluding stock from surface water bodies and improving riparian management.

POL TANK 6 In the tributaries of **Te Whanganui ā Orotū (Ahuriri Estuary)**, in addition to POL TANK 2 the Council will support the development of an Integrated Catchment Management Plan and will work with tangata whenua, landowners and the Napier City Council to:

a) improve water clarity and reduce deposited sediment by reducing the amount of sediment being lost from land and river banks

b) reduce risk of proliferation of algae by reducing nutrient losses from land, including through management of phosphorous loss associated with sediment

c) improve stormwater and drainage water quality and the ecosystem health of urban waterways and reduce contamination of stormwater associated with poor site management practices, spills and accident in urban areas

d) carry out further investigations to understand the estuary hydrology, functioning and environmental stressors.

e) improve and restore indigenous fish passage, spawning habitat and mahinga kai.

Protection of Source Water

POL TANK 7 The quality of **groundwater of the Heretaunga Plains and surface waters used as source water** for Registered Drinking Water Supplies will be protected, in addition to POL TANK 1 and 2, by the Council:

a) identifying a source protection extent for small scale drinking water supplies or Source Protection Zones for large scale drinking water supplies by methods defined in Schedule 34

b) identifying those Source Protection Zones and Source Protection Extents in publicly available map layers on the Hawke's Bay Regional Council's GIS mapping website

c) regulating activities within Source Protection Zones that may actually or potentially affect the quality and quantity of the source water or present a risk to the supply of safe drinking water because of:

i. direct or indirect discharge of a contaminant to the source water including by overland flow and/ or percolation to groundwater

ii. an increased risk to the safety of the water supply as a result of a non-routine event

iii. potentially impacting on the level or type of treatment required to maintain the safety of the water supply

iv. shortening or quickening the connection between contaminants and the source water, including damage to a confining layer of the aquifer

v. in the case of groundwater abstraction, the rate or volume of abstractions causing a change in groundwater flow direction or speed and/ or a change in hydrostatic pressure that is more than minor.

POL TANK 8 When considering applications to take water for a Registered Drinking Water Supply, the Council will:

a) require the determination of a source protection extent or Source Protection Zone which reflects the level of protection required for that supply, according to a method specified in Schedule 34

b) work with the applicant to prepare and notify a Plan Change to introduce or amend a Source

Protection Zone planning map

c) require applications to include an assessment of the Source Protection Zone or extent required, taking into account the factors set out in Schedule 34

d) have regard to:

i. the extent to which the application reflects the factors and methodology in Schedule 34 when establishing the Source Protection Zone or Source Protection Eextent

ii. the impacts, including any costs and benefits, of any additional restrictions in the Source Protection Zone or Source Protection Extent, including in relation to highly productive land as defined in the National Policy Statement on Highly Productive Land

iii. the level of consultation with landowners and occupiers in the Source Protection Zone or Source Protection Extent.

POL TANK 9 The Council will, when considering applications to discharge contaminants or carry out land or water use activities within:

a) the source protection extent for Registered Drinking Water Supplies, take into account possible contamination pathways and risks to the quality of the source water for the water supply

b) a Source Protection Zone, avoid or mitigate risk of contamination from the activity of the source water for the water supply by taking into account criteria including but not limited to:

i. the amount, concentration and type of contaminants likely to be present as a result of the activity or in any discharge

ii. the potential pathways for those contaminants, including any likely or potential preferred pathways

iii. the mobility and survival rates of any pathogens likely to be in the discharge or arising as a result of the activity

iv. any risks the proposed land use, water take or discharge activity has either on its own or in combination with other existing activities, including as a result of non-routine events

v. any risks of any abstraction of groundwater where abstraction has the potential to have more than a minor impact on flow direction or speed and/ or hydrostatic pressure

vi. the effectiveness of any mitigation measures to avoid or mitigate risk of contaminants entering the source water and the extent to which the effectiveness of the mitigation measure can be verified, including whether the activity is regulated by and/or complies with relevant codes of practice or guidelines

vii. notification, monitoring or reporting requirements to the Registered Drinking Water Supplier

viii. outcomes of consultation with the Registered Drinking Water Supplier with respect to the risks to source water from the activity, including measures to minimise risks and protocols for notification to the Registered Drinking Water Supplier should an event presenting a risk to groundwater occur.

POL TANK 10 The Council will work with the agencies which have roles and responsibilities for the provision of safe drinking water, including local government agencies, the national regulator, health agencies and registered water suppliers through multi-agency collaboration to:

a) implement a multi-barrier approach to the delivery of safe drinking water for Registered Drinking Water Supplies, through the consideration of source protection measures, water treatment and supply distribution standards

b) understand the nature and extent of the water resources used to supply communities, their connectivity with other waterbodies and their recharge sources

c) understand the nature of the relationship between water age and water quality, the use of water age as an attribute and implications for its management

d) understand risks to the quality of water used for Registered Drinking Water Supplies, including through consultation on any applicable resource applications in Source Protection Zones

e) maintain shared databases of activities, including information in consents for land and water use, that have the potential to adversely affect quality of water used for community supply

f) develop solutions that address risks to water quality including wastewater reticulation solutions in Source Protection Zones.

Managing point source discharges

POL TANK 11 The Council will manage point source discharges (that are not stormwater discharges) so that after reasonable mixing, contaminants discharged either by themselves or in combination with other discharges enable existing water quality to be:

a) at least maintained where it meets or is better than ~~or do not cause~~ the 2040 target attribute states in Schedule 26; and

b) improved where it does not meet the 2040 target attribute states in Schedule 26, so that those target attribute states are met:

~~to be exceeded~~ and when considering applications to discharge contaminants, will also take into account:

c) measurement uncertainties associated with variables such as location, flows, seasonal variation and climatic events;
d) the degree to which a point source discharge is of a temporary nature, or is associated with necessary maintenance work;
e) when it is an existing activity, identification of mitigation measures, where necessary, and timeframes for their adoption that contribute to the meeting of target attribute states; and
f) the necessity for requiring best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any point source discharge of a contaminant.

Riparian Land Management

POL TANK 12 The Council will promote and support the establishment of riparian vegetation, including in conjunction with stock exclusion and setback regulations, that:

a) contributes to the health of aquatic ecosystems especially for indigenous species
b) provides shading to reduce macrophyte growth and water temperature especially in lowland tributaries of the Karamū River
c) reduces contamination of water from land use activities
d) reduces river bank erosion
e) improves local amenity and protects and enhances natural character
f) enhances recreational activities
g) improves current and future fish spawning habitat
h) assist in weed control
i) improves mauri and mahinga kai

POL TANK 13 ~~When making decisions about riparian land management in accordance with POL TANK 12, the Council will account for management objectives related to land drainage and flood control, and regional biosecurity and where appropriate, support establishment of native plant species in riparian margins to contribute to improving the region's indigenous biodiversity, the collection of kai, taonga raranga and taonga rongoa and the mauri of the river~~.

Where appropriate, support establishment of native plant species in riparian margins to contribute to improving the region's indigenous biodiversity, the collection of kai, taonga raranga, taonga rongoa and the mauri of the river, and account for matters in POL TANK 12 when making decisions about land drainage and flood control, and regional biosecurity.

POL TANK 14 The Council will support improvement of riparian management to meet the specified timeframes (in POL TANK 25) consistent with POLs TANK 12 and TANK 13 by:

a) working with industry groups and land owner collectives to identify where riparian management is to be improved
b) providing information about appropriate riparian planting that assists in meeting the outcomes sought for riparian land
c) regulating cultivation, and indigenous vegetation clearance activities that have a significant adverse effect on functioning of riparian margins in relation to water quality and aquatic ecosystem health in adjacent waterbodies

d) providing funding assistance for riparian vegetation improvements and

e) when making decisions on applications for resource consent to:
   i. take into account benefits arising to the outcomes in POL TANK 12 and 13 as a result of the activity
   ii. consider whether to waive the fees and charges required to process the application where:
      1. there is significant public benefit from the activity or the nature and scale of the activity results in significant ecosystem benefits
      2. sthe activity is not a requirement of any other resource consent.

Wetland and Lake Management

POL TANK 15 ~~The Council will regulate activities in and adjacent to wetlands and lakes and will support and encourage the restoration and extension of natural wetlands and lakes and the reinstatement or creation of additional wetlands to provide for or improve the wetland values by working with tangata whenua, industry and community groups, landowners, the Hawke's Bay Fish and Game Council and other stakeholders in alignment with the Regional Biodiversity Strategy to:~~

~~a) identify priority areas where wetland and lake management can be improved~~
~~b) identify priority areas where wetland extent can increased~~
~~c) provide information to landowners about wetland and lake values and their management~~
~~d) provide funding assistance for wetland and lake protection and for construction of new wetlands and lakes~~
~~e) target resources where multiple objectives can be met~~

~~and~~

~~f) when making decisions on applications for resource consent to:~~
~~i. take into account benefits arising to the values listed in OBJ TANK 12 as a result of the activity~~
~~ii. consider whether to waive the fees and charges required to process an application to improve or maintain wetland or lake values where:~~
~~1. there is significant public benefit from the activity or the nature and scale of the activity result in significant ecosystem benefits~~

~~and~~
~~2. the activity is not a requirement of any other resource consent.~~

In the TANK Catchments, the Council will:

(A) regulate activities in and adjacent to wetlands and lakes in order to protect and enhance the following values and contribute to meeting target attributes states in Schedule 26:

a) indigenous biodiversity habitat and ecosystems;
b) recreation (where appropriate);
c) customary use in accordance with tikanga Māori including mahinga kai;
d) hydrological functioning;
e) water quality; and;
f) fishery habitat.

(B) in addition to POL TANK 2, work with tangata whenua, industry and community groups, landowners, and other stakeholders (to the extent they wish to be involved) in alignment with the Regional Biodiversity Strategy to support and encourage restoration and protection of lakes and wetlands to:

a) reduce sediment and nutrient inputs;
b) improve water quality to support indigenous macrophyte plant growth in shallow lakes;
c) improve ecosystem health and water quality by excluding stock and improving riparian management;
d) protect, increase, or restore existing wetlands or create new wetlands including for the management

of urban stormwater;

e) provide information about wetland and lake values and their management
f) provide funding assistance for wetland and lake protection and for construction of new wetlands and lakes
g) contribute to meeting target attribute states in Schedule 26
h) target resources where multiple objectives can be met
i) identify priority areas for investment where wetlands and lake management can be improved, and wetland extent can be increased.

Microcoleus (Phormidium) Management

POL TANK 16 The Council will address the risks to human health and dogs from toxic ~~microcoleus~~ benthic cyanobacteria by:

a) regular monitoring and reporting on the incidence of algae, including toxic ~~microcoleus~~ benthic cyanobacteria and nutrient concentrations and ratios of nutrients in freshwater related to ~~microcoleus~~ benthic cyanobacteria establishment
b) adopting applicable national guidelines for the monitoring and management of toxic algae
c) supporting national investigations into the incidence of toxic ~~microcoleus~~ benthic cyanobacteria, the reasons for its establishment and measures to reduce the incidence
d) reducing nutrient and sediment inputs in accordance with POL TANK 17 and 19
e) maintaining flushing flows
f) ensuring the public has information about phormidium risk, including as a result the accumulation of toxic algal mats as specified in Schedule 26.

5.10.2 Policies: Managing Adverse Effects from Land Use on Water Quality (Diffuse Discharges)

Adaptive Approach to Nutrient and Contaminant Management

POL TANK 17 The Council will achieve or maintain the 2040 target attribute states in Schedule 26 with landowners, industry groups, and other stakeholders and will implement the following measures:

a) establish programmes and processes through Freshwater Farm Plans, Catchment Collectives and Industry Programmes to ensure land managers:
   i. adopt good management practice
   ii. identify critical source areas of contaminants at both property and catchment scale
   iii. adopt effective measures to mitigate or reduce contaminant loss
b) include contaminant management provisions in Freshwater Farm Plans, Catchment Collective Plans or Industry Programmes according to the priority order for specific contaminants listed in Schedule 27 and portrayed in Schedule 27 Maps 1 - 4.

POL TANK 18 The Council will achieve or maintain the 2040 target attribute state in Schedule 26 by:

a) gathering information to determine sustainable nutrient loads
b) developing nutrient limits and a nutrient allocation regime if the management framework in POL TANK 17 is not leading to improved nutrient attribute states by the time this plan is reviewed
c) regulating land use change to manage significant risk of increased nitrogen loss
d) gathering and assessing information about environmental state and trends and the impact of land use activities on these
e) working with industry groups, landowners and other stakeholders to undertake research and investigation into:
   i. contaminant pathways, concentrations and loads in rivers and coastal receiving environments
   ii. nutrient uptake and loss pathways at a property scale
   iii. measures to reduce contaminant losses at a property as well as catchment scale

including those delivered through industry programmes.

Sediment Management

POL TANK 19 The Council will reduce adverse effects on freshwater and coastal aquatic ecosystems from eroded sediment, and from the phosphorus associated with this, by prioritising the following mitigation measures:

a) regulating cultivation, and vegetation clearance activities
b) targeting priority areas and activities for sediment loss management where there is high sediment loss risk and working with land managers to identify and manage critical source areas of contaminants at both property and catchment scale
c) informing land managers where land is vulnerable to erosion, using tools such as SedNet and LUC and providing information about measures that reduce soil loss
d) recognising the benefits provided by tree planting and retirement of land for erosion control as well as for mitigating climate change effects and improving indigenous biodiversity by:
    i. targeting resources where multiple objectives can be met
    ii. and supporting landowners to retire land, establish forests where appropriate, and plant trees on land with high actual or potential erosion risk
e) supporting and encouraging improved riparian management across all TANK catchments.

Land Use Change and Nutrient Losses

POL TANK 20 The Council will regulate production land use change to manage the the potential impact of increases in diffuse discharges of nutrients on freshwater quality objectives and in making decisions on resource consent applications, the Council will take into account:

a) whether target attribute states are being met in the catchment where the activity is to be undertaken
b) where a relevant TANK Industry Programme or Catchment Collective is in place, the extent to which the changed production land use activity is consistent with the Industry Programme or Collective outcomes, mitigation measures and timeframes
c) any mitigation measures required, and timeframes by which they are to be implemented that are necessary to ensure that nutrient losses occurring from the property, in combination with other nutrient losses in the catchment will be consistent with meeting-2040 target attribute states in Schedule 26, including:
    i. performance in relation to good management practice
    ii. efficient use of nutrients
    iii. minimisation of nutrient losses

    and will:

d) avoid land use change that will result in increased nutrient loss that contributes to target attribute states in Schedule 26 for DIN and DRP not being met.

Industry Programmes and Catchment Collectives

POL TANK 21 The Council will support the establishment and operation of Industry Programmes and Catchment Collectives and:

a) support development of industry good management practice by industry groups and support provision of relevant information or expertise for making sustainable land management decisions to farm operators
b) support local investigation and water monitoring programmes where information gaps exist
c) support development and use of models that assist in identification and management of critical source areas
d) support collective and farm scale decision making to meet target attribute states and encourage local solutions and innovative and flexible responses to water quality issues.

POL TANK 22 The Council will continue to work with farm operators, industry groups and other stakeholders to manage land and water use activities so that they meet 2040 target attribute states for freshwater/aquatic ecosystems by:

a) further supporting the development of **Industry Programmes** that:
   i. identify practices that contribute to meeting applicable target attribute states
   ii. specify timeframes for completion or adoption of measures to reduce contaminant losses
   iii. ensure individual performance under an Industry Programme is audited
   iv. provide annual reports to the Council on progressive implementation of measures identified in Industry Programme Freshwater Farm Plans established under Schedule 29 and progress towards meeting applicable target attribute states
   v. promote adoption of good industry management practice
   vi. ensure that Industry Programmes are consistent with the requirements of Schedule 29

b) supporting farm operators to establish **Catchment Collectives** to develop and implement environmental management plans that contribute to meeting applicable freshwater objectives and that:
   i. identify and adopt measures at a property scale and, collectively with other farm operators, identify and adopt measures at a catchment scale that reduce contaminant losses or remedy or mitigate the effects of land use on target attribute states
   ii. specify timeframes for completion or adoption of measures to reduce contaminant losses
   iii. ensure individual performance under a Catchment Collective is monitored
   iv. provide annual reports to the Council on progressive implementation of measures identified in landowner Catchment Collectives established under Schedule 29 and progress towards meeting applicable target attribute states
   v. promote adoption of good management practice
   vi. ensure programmes prepared by a Catchment Collective are consistent with the requirements of Schedule 29
c) approving any Catchment Collective or Industry Programme developed under Schedule 29
d) requiring Auditing of Catchment Collective or Industry Programmes prepared and approved under Schedule 29 including auditing of member properties.

POL TANK 23 Where a farm operator is not part of an Industry Programme or Catchment Collective, the Council will require development and implementation of a **Freshwater Farm Plan** for the farm**.**

Management and compliance

POL TANK 24 Where farm operators are members of a **Catchment Collective** or **Industry Programme** but do not undertake their activity in accordance with the approved plan prepared in accordance with Schedules 27 or 29, or do not follow the agreed terms of membership of a Catchment Collective or Industry Programme the Council will:

a) provide a conflict resolution service
b) where a farm operator is no longer, or is deemed through conflict resolution processes not to be, a member the Council will:
   (i) require the development of a Freshwater Farm Plan for that property within 6 months or
   (ii) require an application for a land use consent to be made
c) take appropriate enforcement action.

Timeframes: Water and Ecosystem Quality

POL TANK 25 The Council will develop an implementation plan for this Plan Change with industry groups, landowners, water permit holders, tangata whenua, and other stakeholders and to ensure that the farm operator are engaged in industry or Catchment Collective programmes or have prepared freshwater farm plans within the timeframes in Schedule 27 and to ensure reporting (as specified in Schedule 29) on the milestone in Table 1 below.

Table 1: Milestones and Timeframes

Action	Activity	Milestone	Output to be reported on
Stock and Riparian Land Management			
1: Riparian planting	Riparian margins planted		
			Km of riparian margins planted
2: Sediment mitigation	sediment mitigation in hill country managed through environmental programme or farm plan	According to priority set out in Schedule 27	Soil erosion and critical source area mitigation measures and timeframes for implementation
3: Riparian management	Shading and planting in Karamū catchment and Heretaunga plains	200km of waterway subject to planting programmes	River and streams in Karamū catchment with riparian planting for shade
Wetlands			
4: Wetland management and improvement	Protection and restoration of ~~existing~~ wetlands existing at 9 September 2022	100ha in 5 years by 31 December 2030 and 200ha ~~in ten years from operative date~~ by 31 December 2035	Hectares of protected and restored wetland
	Reinstatement or creation of additional wetland	100 ha reinstated or additional wetland	Hectares of new wetland
Nutrient Management			
5: Nutrient management	Nutrient management plans	Farms have plans according to priority set out in Schedule 27	Number of farms subject to nutrient plan

Policies: Stormwater Management

Stormwater Infrastructure

POL TANK 26 When considering applications to divert and discharge stormwater, ~~The Council will reduce or mitigate~~ the adverse effects of stormwater quality and quantity on aquatic ecosystems and community well-being ~~arising from existing and new urban development (including infill development) industrial or trade premises and associated infrastructure, by addressing the following matters when considering applications to divert and discharge stormwater,~~ will be avoided, reduced or mitigated by requiring:

a) measures to achieve the target attribute states in Schedule 26
b) Local Authorities to adopt~~ion of~~ an integrated catchment management approach to the collection, treatment and discharge of stormwater
c) stormwater to be discharged into a reticulated stormwater network where such a network is available or will be made available as part of the development
d) retention or detention of stormwater where necessary, while not exacerbating flood hazards
e) adoption of a good practice approach to stormwater management including adoption of Low Impact Design for stormwater systems and adherence to relevant industry guidelines

~~and by further considering~~

f) protection of:
   (i) ~~any potential adverse effects on~~ significant and/or outstanding values of the receiving environment including estuaries, wetlands and any waterbody listed in Schedule 25;
   (ii) water quality in the Heretaunga Aquifer;
   (iii) Indigenous freshwater species; and
   (iv) Indigenous fish spawning habitat, particularly during spawning periods;

and by further considering:

~~f)~~
g) site specific constraints including areas with high groundwater and, source protection zones and extents
h) impact of the activity on the joint approach of HBRC, Napier City and Hastings District Councils to provide for integrated stormwater management
i) the effects of climate change when providing for new and upgrading existing infrastructure.

Source Control

POL TANK 27 Sources of stormwater contamination and contaminated stormwater will be reduced by:

a) specifying requirements for the design and installation of stormwater control facilities on sites where there is a high risk of freshwater contamination arising from either the direct discharge of stormwater to freshwater, the discharge of stormwater to land where it might enter water or the discharge to a stormwater or drainage network
b) requiring the implementation of good site management ~~practices on all sites where there is a risk of stormwater contamination arising from the use, or storage of contaminants including the management of solid~~ to avoid contaminants and debris ~~to avoid these~~ entering stormwater
c) controlling, and if necessary avoiding, activities that will result in ~~water quality standards~~ target attribute states not being able to be met.

Dealing with the Legacy

POL TANK 28 Aquatic ecosystem health improvements and community wellbeing and reduced stormwater contamination will be achieved by ~~HBRC working with the~~requiring Napier City and

Hastings District Councils ~~requiring~~ discharges from stormwater networks to meet, after reasonable mixing:

a) the 2040 target attribute states in Schedule26 ~~for freshwater and estuary health through resource consent conditions~~, including requirements:
   i. to apply the Stream Ecological Valuation methodology or mauri monitoring methods to inform further actions
   ii. to install treatment devices within the drainage network where appropriate
   iii. to avoid solid contaminants and debris entering stormwater
   iv. for stream planting/re-alignment for aquatic ecosystem enhancement
   v. for wetland creation, water sensitive design and other opportunities for increasing stormwater infiltration where appropriate
   vi. recognise existing and planned investments in stormwater infrastructure
b) for attributes not accounted for in Schedule 26, the ANZECC Guidelines 2018 will be used to achieve:
   i. the 80th percentile level of species protection in receiving waters by 1 January 2025
   ii. the 95th percentile level of species protection by 31 December 2040.

Consistency and Collaboration: Integration of city, district and regional council rules and processes

POL TANK 29 To assist in achieving the 2040 target attribute states in Schedule 26, the Council in collaboration with the Napier City and Hastings District Councils will:

a) no later than 1 January 2030, implement similar stormwater performance standards and management including through the adoption of:

   i. shared information and processes for monitoring, compliance and auditing management of sites at high risk of stormwater contamination
   ii. consistent levels of service for stormwater management and infrastructure design
   iii. an integrated stormwater catchment management approach, consistent with Schedule 33
   iv. undertaking a programme of mapping the stormwater networks and recording their capacity
   v. aligned resource consent processes including joint hearings where appropriate
   vi. amending standards, codes of practice and bylaws to specify consistent design standards for stormwater reticulation and discharge facilities including through consent conditions, that will enable implementation of the stormwater policies set out in this Plan
   vii. requirements for site management plans and good site management practices on industrial or trade premises in the following high priority areas:
      1. the Ahuriri catchment
      2. the Karamū River and its tributaries
      3. within identified drinking water Source Protection Zones and
      4. land over the unconfined aquifer
b) when reviewing district plans, include provisions that specify consistent design standards for stormwater reticulation and discharge facilities, that will achieve the ~~freshwater objectives~~target attribute states set out in this plan
c) develop and make available to the public consistent advice about good stormwater management options (including through HBRC's guidelines)
d) encourage, through education and public awareness programmes, greater uptake and installation of measures that reduce risk of stormwater contamination
e) complete a programme of mapping the stormwater networks and recording their capacity.

5.10.5 Policies: Monitoring and Review

POL TANK 30 ~~The Council will recognise and support monitoring according to mātauranga Māori and will recognise and support local scale monitoring to assess ecosystem health and mauri including water quality in relation to identified values and its contribution to:~~

~~a) understanding local ecosystem health and land and water use impacts on it~~

~~b) enabling the kaitiaki role of tangata whenua and resource users' responsibilities for sustainable freshwater management to be met~~
~~c) assessing effectiveness of mitigation measures adopted to meet freshwater objectives~~
~~d) understanding state and trends of local water quality~~
~~e) adding to the regional knowledge about environmental state and trends~~

~~by:~~

~~f) developing protocols and procedures for monitoring appropriate to the purpose of the monitoring~~
~~g) providing assistance and advice~~
~~h) supporting the provision of monitoring materials~~
~~i) collating and reporting on data as appropriate.~~

The Council will:
a) recognise, resource and support the kaitiakitanga role of tangata whenua in the mātauranga monitoring of the mauri of freshwater and implementation of Te Mana o Te Wai.
b) provide assistance and advice about freshwater monitoring to tangata whenua where necessary
c) assist in the collation of, and reporting on, mātauranga monitoring data including state of the environment reporting as appropriate.
d) recognise and support owners of Maori land (definition: TTWMA 1993: **Maori land** means Maori customary land and Maori freehold land) in undertaking mātauranga monitoring of freshwater; and
e) use the information in (a) - (d) to assess the impact on tangata whenua values and customary practices (including mahinga kai) and to assist with assessing the state and trends of local water quality and quantity.

5.10.5 Policies: Monitoring and Review

Mana whenua monitoring

POL TANK 30A The Council will recognise and support local scale monitoring and its contribution to:
a) understanding local ecosystem health and land and water use impacts on it
b) enabling resource users' responsibilities for sustainable freshwater management to be met
c) assessing effectiveness of mitigation measures adopted to meet freshwater objectives
d) use the information in (a – c) to assess state and trends of local water quality and quantity
e) adding to the regional knowledge about environmental state and trends by:
i. developing protocols and procedures for monitoring appropriate to the purpose of the monitoring
ii. providing assistance and advice
iii. collating and reporting on data as appropriate.

POL TANK 31 Council will meet regularly with representatives from TANK stakeholder groups to:

a) review and report on the TANK implementation plan
b) identify issues arising and develop measures to enable their resolution.

POL TANK 32 The Council will monitor and report on the effectiveness of the TANK water quality management policies and rules and to assist in making decisions about reviewing or changing this management framework, the Council will:

a) continue to monitor instream water quality and review and report on the progress towards and achievement of the water quality objectives in Schedule 26 and according to OBJ TANK 2 of this Plan in its regular State of the Environment monitoring
b) monitor and report on the state of riparian land and wetlands, and carry out regular ecosystem habitat assessments, including native fish monitoring and through the application of mātauranga Māori tools and approaches when they are developed
c) monitor the progress towards the milestones listed in POL TANK 25, according to timeframes specified in Schedule 27 and collate and report annually on information about
d) the nature and extent of the mitigation measures being adopted to meet water quality and/or quantity outcomes through Catchment Collectives, Industry Programmes and Freshwater Farm Plans

e) the establishment of Catchment Collectives and assess progress in implementing the measures specified in their environment plans
f) the preparation of Freshwater Farm Plans and assess progress in implementing the measures specified in that plan
g) work with Industry Groups to collate information annually on the functioning and success of any Industry Programme in implementing measures specified in the Industry Programme
h) along with the Napier City Council and Hastings District Council, report annually on progress towards the improvement of the stormwater network, including reporting on the preparation of Site Management Plans for activities at risk of contaminating stormwater in urban areas.

5.10.6 Policies: Heretaunga Plains Groundwater Levels and Allocation Limits

Heretaunga Plains Aquifer Management

POL TANK 33 The Council recognises the actual and potential adverse effects of groundwater abstraction in the Heretaunga Plains Groundwater Quantity Area on:

a) groundwater levels and groundwater ecosystems
b) ecosystem health and water flows and levels in connected surface waterbodies, including springs and wetlands
c) flows of the Ngaruroro River
d) groundwater quality through risks of sea water intrusion
e) tikanga and mātauranga Māori

and will:

f) adopt a staged approach to groundwater management that includes:

i. avoiding further adverse effects by not granting new consents to take and use groundwater except as provided for by POL TANK 48 ~~49~~
ii. reducing existing levels of water use
iii. mitigating the adverse effects of groundwater abstraction on flows in connected water bodies
iv. gathering information about actual water use and its effects on stream depletion
v. monitoring the effectiveness of stream flow maintenance and habitat enhancement schemes
vi. including plan review directions to assess effectiveness of these measures.

POL TANK 34 In managing the allocation and use of groundwater in the Heretaunga Plains Groundwater Quantity Area, the Council will:

a) adopt an interim allocation limit of 90 million cubic metres per year based on Actual and Reasonable water use
b) Except for providing water for stream flow maintenance avoid re-allocation of any water that might become available within the interim groundwater allocation limit or within the limit of any connected water body until there has been a review of the relevant allocation limits within this plan
c) manage the Heretaunga Plains Groundwater Quantity Area as an over- allocated management unit and prevent any new allocations of groundwater except as provided for by POL TANK 48
d) when considering applications in respect of existing consents due for expiry, or when reviewing consents, to:
    i. allocate groundwater the basis of the maximum quantity that is able to be abstracted during each year or irrigation season expressed in cubic meters per year
    ii. apply an assessment of Actual and Reasonable use (except as provided by POL TANK 48)
    iii. take into account any water use required as part of a programmed or staged development specified within the existing water permit or associated resource consent, if:
        1. the consent holder can demonstrate that the existing investment is dependent on water use over and above Actual and Reasonable use
        2. the whole or part of the specified activity or development has not lapsed during the resource consent duration

3. the activity or development is integral to the on-going operation of the activity or development for which the permit was issued
4. where applicable, water demand is calculated for rootstock only where there is evidence of a contract for the supply of that rootstock existing as at 2 May 2020

e) mitigate stream depletion effects on lowland streams by providing for stream flow maintenance and habitat enhancement schemes.

~~**POL TANK 35** The Council will restrict the re-allocation of groundwater to holders of permits to take and use water in the Heretaunga Plains Groundwater Quantity Area issued before 2 May 2020 and will review permits or allocate water according to the plan policies and rules either:~~

~~a) upon expiry of the consent~~

~~or~~

~~b) in accordance with a review of all permits not granted under the provisions of this Plan Change within ten years of <the operative date>.~~

Flow maintenance

POL TANK 36 To mitigate the stream depletion effects of groundwater takes in the Heretaunga Plains Groundwater Quantity Area the Council will:

a) consult with tangata whenua and other relevant parties to investigate the environmental, technical, cultural, social and economic feasibility of options for stream flow maintenance and habitat enhancement schemes including water storage and release options and groundwater pumping and discharge options that:
   i. maintain stream flows in lowland rivers above trigger levels where groundwater abstraction is depleting stream flows
   ii. improve oxygen levels and reduce water temperatures
b) determine the preferred solutions taking into account whether:
   i. wide-scale aquatic ecosystem benefits are provided by maintaining stream flow across multiple streams
   ii. multiple benefits can be met including for flood control and climate change resilience
   iii. the solutions are efficient and cost effective
   iv. scheme design elements to improve ecological health of affected water bodies have been incorporated
   v. opportunities can be provided to improve public access to affected waterways
c) develop and implement a funding mechanism that enables the Council to recover the costs of developing, constructing and operating stream flow maintenance and habitat enhancement schemes from permit holders, including where appropriate:
   i. management responses that enable permit holders to manage local solutions
   ii. develop any further plan change within an agreed timeframe if necessary to implement a funding solution
d) where schemes are operational, either:
   i. require abstraction to cease when applicable stream flow maintenance trigger is reached

   or

   ii. require permit holders to contribute to and participate in the scheme
e) ensure that stream flow maintenance and habitat enhancement schemes are constructed and operating within ten years of the operative date of the Plan while adopting a priority regime according to the following criteria:
   i. solutions that provide wide-scale benefit for maintaining stream flow across multiple streams
   ii. solutions that provide flow maintenance for streams that are high priority for management action because of low oxygen levels
f) review as per POL TANK 39 if no schemes are found to be feasible.

POL TANK 37 When assessing applications for a stream flow maintenance and habitat enhancement scheme the Council will have regard to:

a) opportunities for maximising the length of waterbodies where habitat and stream flow is maintained or enhanced
b) any improvements to water quality, especially dissolved oxygen, and ecosystem health as a result of the stream flow maintenance and habitat enhancement schemes
c) the duration and magnitude of adverse effects as a consequence of flow maintenance scheme operation
d) the extent to which the applicant has engaged with tangata whenua.

POL TANK 38 The Council will mitigate the stream depletion effects of groundwater takes in the Heretaunga Plains Water Management Unit on the Ngaruroro River, in consultation with tangata whenua, land and water users and the wider community through:

a) further investigating the environmental, technical, cultural, social, and economic feasibility of a water storage and release scheme to off-set the cumulative stream depletion effect of groundwater takes, and
b) if such a scheme is feasible, developing options for funding, construction and operation of such a scheme including through a targeted rate

or:

c) if such a scheme is not feasible, reviewing alternative methods and examine the costs and benefits of those.

Groundwater management review

POL TANK 39 After water has been re-allocated and consents reviewed in accordance with POL TANK 34 - 36, the Council will commence a review of these provisions ~~within ten years of <operative date>~~ in accordance with Section 79 of the RMA and will determine:

a) the amount of water allocated in relation to the interim allocation limit
b) the total annual metered groundwater use for the Heretaunga Plains Groundwater Quantity Area during the ten years prior to the time of review
c) if any changes in the relationship between groundwater abstraction and the flows of rivers and groundwater levels have occurred
d) the extent of any stream flow maintenance, augmentation, or habitat enhancement schemes including in relation to:
    i. the length of stream subject to flow maintenance
    ii. the extent of habitat enhancement including length of riparian margin improvements, and new or improved wetlands
    iii. the magnitude and duration of stream flow maintenance scheme operation
    iv. trends oxygen and temperature levels in affected streams

and will:

e) in relation to plan objectives and adverse effects listed in POL TANK 34, assess:
    i. the effects of the groundwater takes on stream flows
    ii. effectiveness of any stream flow maintenance, augmentation, or habitat enhancement schemes in maintaining water flows, groundwater levels and improving water quality
    iii. effectiveness of habitat enhancement including through improved riparian management and wetland creation in meeting freshwater objectives
f) review the appropriateness of the allocation limit in relation to the freshwater objectives
g) develop a plan change to ensure any over-allocation is phased out.

5.10.7 Policies: Surface Water Low Flow Management

Flow Management Regimes; Tūtaekurī, Ahuriri, Ngaruroro and Karamū

POL TANK 40 The Council will manage river flows and lake or wetland water levels affected by surface water abstraction activities, including groundwater abstraction in Zone 1 Groundwater, during low flow periods so that they meet objectives for aquatic ecosystem health, mauri, tikanga Māori values, and other instream values by applying the minimum flows, flow maintenance triggers, and allocation limits specified in Schedule 30, except as provided for by POLs TANK 423, 512 and 489, when considering applications to take and use water.

Paritua and Karewarewa Streams

POL TANK 41 The Council recognises the connectivity between ground and surface water abstraction on the flows in the Paritua and Karewarewa Streams and their tributaries, acknowledges the contribution of flows from these streams to the flows in the Awanui Stream, Karamū River and the Heretaunga Plains Groundwater Quantity Area, and their importance to local marae and will work with water permit holders, landowners and tangata whenua to:

a) further refine the Heretaunga Plains Aquifer Model to improve model outputs for this catchment
b) investigate opportunities for wetland creation to improve hydrological functioning and water quality in the river, especially during low flows
c) improve riparian management to provide shade, reduce macrophyte growth, increased dissolved oxygen levels and decrease water temperature
d) carry out resource investigations to understand natural stream flow regimes and feasible options for remediation including:
    i. managed aquifer recharge
    ii. flow enhancement from groundwater or storage
    iii. streambed modification to reduce losses to groundwater in highly conductive reaches
e) enable and support water permit holders and landowners to collectively manage the maintenance of specified flows in the Paritua and Karewarewa Streams
f) provide for water to be diverted from the Ngaruroro River for the enhancement of flows in the Paritua Stream.

General Water Allocation

POL TANK 42 When assessing applications to take water the Council will:

a) provide that the taking and use of water that has been taken and impounded or stored at times of high flow and released for subsequent use, is not subject to allocation limits
b) require water meters to be installed for all water takes authorised by a water permit and water use to be recorded and reported via telemetry provided that telemetry will not normally be required where the consented rate of take is less than 5l/sec
c) ensure water allocation from tributaries is accounted for within the total allocation limit for the relevant zone and that the total abstraction from any tributary does not exceed 30% of the MALF for that tributary unless otherwise specified in Schedule 30
d) offset the stream depletion effects of any groundwater takes in Zone 1 Groundwater, that were not previously considered stream depleting, by managing them as if they were in the Heretaunga Plains Groundwater Quantity Area

and:

    i. require contributions to an applicable lowland stream enhancement scheme at a rate equivalent to the stream depletion effect consistent with POL TANK 37 once such schemes are operational

or:

ii. require the water take to cease when the minimum flow for the affected river is reached if a permit holder does not contribute under clause (i) where there is an applicable lowland stream enhancement

and:

iii. allow further technical assessments to determine the extent of stream depletion effect.

Water Use and Allocation – Efficiency

POL TANK 43 The Council will ensure efficient management of the allocation of water available for abstraction by:

a) ensuring allocation limits and allocations of water for abstraction are calculated with known reliability of supply
b) ensuring water is allocated to meet Actual and Reasonable use
c) encouraging and supporting flexible management of water by permit holders so that the allocatable water can be used efficiently and within specified limits
d) on-going data collection and monitoring of water resources and water use to better understand patterns of water availability and water use and further develop efficient and effective water management provisions.

POL TANK 44 When considering applications for resource consent, the Council will ensure water is allocated and used efficiently by:

a) ensuring that the use of water is efficient through:
    i. allocation of water for irrigation end-uses based on soil characteristics, climate and plant needs
    ii. requiring the adoption of ~~good practice~~ water use technology and processes that minimise the amount of water lost from the soil profile
    iii. the use of water meters
b) using the IRRICALC water demand model or a suitable equivalent approved by Council that utilises crop type, soil type and climatic conditions to determine efficient water allocations for irrigation uses
c) allocating water for irrigation on the basis of an 80% *application efficiency*, and 95% reliability of supply
d) requiring all non-irrigation water takes (except as provided by POL TANK 47 and 48 for municipal and papakāinga supplies) to show how water use efficiency of at least 80% is being met and is consistent with any applicable industry good management practice
e) requiring new water takes and irrigation systems to be designed and installed in accordance with industry codes of practice and standards
f) requiring irrigation and other water use systems to be maintained and operated to ensure on-going efficient water use in accordance with applicable industry codes of practice.

Water Use Change/Transfer

POL TANK 45 When considering any application to change the water use specified by a water permit, or to transfer a point of take to another point of take, the Council will take into account:

a) changes to the nature, location, scale and intensity of effects on:
    i. total water use
    ii. specified minimum flows and levels or other water users' access to water
    iii. the values of outstanding water bodies listed in Schedule 25
    iv. the values of outstanding water bodies as listed in the objectives and policies of this Plan
    v. the patterns of water use over time, including changes from seasonal use to water use occurring throughout the year or changes from season to season
    vi. water quality

and will consider declining applications:

b) where the transfer is to another water quantity area unless:
    i. new information provides more accurate specification of applicable boundaries

ii. where the lowland tributaries of the Karamū River are over-allocated, whether the transfer of water take from surface to groundwater provides a net beneficial effect on surface water flows

c) to change/transfer water away from irrigation of the versatile land of the Heretaunga Plains for primary production especially food production, except where a change of use and/or transfer is for:
   i. a flow enhancement or ecosystem improvement scheme, subject to clause (a)
   or
   ii. the efficient delivery of water ~~supplies~~ through a municipal or community supply ~~and to meet the communities' human health needs for water supply~~, including for marae and papakāinga, subject to clause (a)

d) in over-allocated quantity areas, to transfer allocated but unused water takes existing at 2 May 2020
e) for a change of use from frost protection to any other end use.

Water Allocation - Permit Duration

POL TANK 46 When considering applications to take and use water, the Council will set common expiry dates that enable consistent and efficient management of the resource, and will set durations that provide a periodic opportunity to review effects of the cumulative water use and to take into account potential effects of changes in:

a) knowledge about the water bodies
b) over-allocation of water
c) patterns of water use
d) development of new technology
e) climate change effects
f) flow enhancement and aquifer recharge schemes and any riparian margin upgrades

and the Council:

g) will impose consent durations of 15 years according to specified water quantity area expiry dates as specified in Schedule 32. Future dates for expiry or review of consents within that catchment are every 15 years thereafter
h) will impose a consent duration of up to 30 years for municipal supply and will impose consent review requirements that align with the expiry of all other consents in the applicable quantity area
i) may grant consents granted within three years prior to the relevant common catchment expiry date with a duration to align with the second common expiry date in Schedule 32, except where the application is subject to section 8.2.4 of the RRMP.

Water Allocation - Priority

POL TANK 47 In making decisions about resource consent applications for municipal and papakāinga water supply the Council will ensure the water needs of future community growth are met within water limits and:

a) allocate water for population and urban development projections according to estimates provided by the HPUDS (2017) to 2045 or adopted successive versions and/or any requirement prescribed under an NPS on Urban Development
b) calculate water demand according to existing and likely residential, non-residential, and non-residential (e.g. schools, hospitals, commercial and industrial) demand within the expected reticulation areas and:
   i. require that water demand and supply management plans are developed and adopted and industry good management practice targets for water infrastructure management and water use efficiency including whether an Infrastructure Leakage Index of 4 or better can be achieved
   ii. seek that the potential effects of annual water volumes are reflected in level of water supply service and reliability of supply objectives in asset management plans and bylaws for water supply

c) work collaboratively with Napier City and Hastings District Councils to:
   i. develop an integrated planning approach that gives effect to the National Policy Statements within the limits of finite resources
   ii. develop a good understanding of the present and future regional water demand and opportunities for meeting this
   iii. identify communities at risk from low water reliability or quality and investigate reticulation options.

POL TANK 48 The Council will consider applications to take and use water from the Heretaunga Plains groundwater quantity area ~~for essential human health needs of the community or unforeseen non-commercial needs~~ for municipal, community, marae or papakāinga drinking water supplies that, by itself or in combination with other water takes in the same water quantity area, causes the total allocation limit as specified in Schedule 30~~1~~ to be exceeded~~. When assessing an application the Council will take into account~~ where::

a) the water sought would meet essential human health needs or would meet social, environmental or cultural needs essential for the community; and

a~~b~~) ~~whether~~ the volume and rate of take is reasonable for the use

When assessing an application the Council will have particular regard to:

b~~c~~) ~~the extent to which~~ whether demand can reasonably be met through other methods (for example water efficiency improvements) or sources of water and that all other options have been considered and exhausted

~~c) the extent to which the water use meets social, environmental or cultural needs essential for the community~~

d) the nature and scale of adverse effects, including but not limited to bore interference, stream depletion or effects on minimum flows and potential derogation of existing water takes

e) any adverse effects on the significant values of connected wetlands, outstanding waterbodies in Schedule 25, and the values of connected waterbodies as expressed in OBJs TANK 7-11.

POL TANK 49 When making water shortage directions under Section 329 of the RMA, occurring when rivers have fallen below minimum flows and water use has decreased or ceased according to permit conditions, the Council will establish and consult with an emergency water management group that shall have representatives from Napier Council, Hastings District Council, Fire and Emergency New Zealand, Hawke's Bay District Health Board, iwi authorities and Ministry of Primary Industries, to make decisions about providing for water uses in the following priority order:

a) water for the maintenance of public health
b) water necessary for the maintenance of animal welfare
c) water essential for community well-being and health
d) water essential for survival of horticultural tree crops
e) uses where water is subject to seasonal demand for primary production or processing
f) uses for which water is essential for the continued operation of a business, not provided for by clause (e).

The following uses will not be authorised under a water shortage direction:

g) use of water not associated with the continued operation of a business or community well-being
h) non-essential amenity uses such as private swimming pools and car washing.

Takes not subject to any restrictions are:

i) firefighting uses

j) non-consumptive uses.

Over-Allocation

POL TANK 50 The Council will phase out over-allocation by:

a) preventing any new allocation of water (not including any reallocation in respect of permits issued before 2 May 2020, or high flow allocations)
b) for applications in respect of existing consents due for expiry or when reviewing consents, to:
    i. allocate water according to Actual and Reasonable use (except as provided for by POLs TANK 478 and 489) and take into account any water use required as part of a programmed or staged development specified within the existing water permit or associated resource consent, if:
        1. the consent holder can demonstrate that existing investment is dependent on water use over and above Actual and Reasonable use
        2. the specified activity or development has not lapsed during the resource consent duration
        3. the activity or development is integral to the on-going operation of the activity or development for which the permit was issued
        4. where applicable, water demand is calculated for rootstock only where there is evidence of a contract for the supply of that rootstock existing as at 2 May 2020
    ii. impose conditions that require implementation of good management practice for efficiency of water use, including through altering the volume, rate or timing of the take, and providing information to verify efficiency of water use relative to good management practice standards
c) provide for, within the duration of the consent, meeting water efficiency standards where hardship can be demonstrated
d) reducing the amount of water permitted to be taken without consent, including those provided for by Section 14 (3)(b) of the RMA, except for authorised uses existing before 2 May 2020
e) encouraging voluntary reductions, site to site transfers (subject to clause (f)) or promoting water augmentation/harvesting
f) prevent site to site transfers of allocated but unused water that does not meet the definition of Actual and Reasonable use
g) enabling and supporting permit holders to develop flexible approaches to management and use of allocatable water within a management zone including through catchment collectives, water user groups, consent or well sharing or global water permits
h) enabling and supporting the rostering of water use or reducing the rate of takes in order to avoid water use restrictions at minimum or trigger flows.

Frost Protection, temporary, and non-consumptive water takes

POL TANK 51 When considering applications to take water for frost protection, temporary, and non-consumptive water takes, the Council will avoid, remedy or mitigate actual and potential effects of the take on its own or in combination with other water takes:

a) from groundwater in the Heretaunga Plains Groundwater Quantity Area on:
    i. neighbouring bores and existing water users
    ii. connected surface water bodies
    iii. water quality as a result of any associated application of the water onto the ground where it might enter water
b) from surface water on:
    i. instantaneous flow in the surface water body
    ii. fish spawning and existing water users
    iii. applicable minimum flows during November to April
    iv. water quality as a result of any associated application of the water onto the ground where it might enter water

by:

c) requiring applicants to demonstrate non-water reliant alternatives have been investigated and provide evidence as to why they are not appropriate
d) taking into account any stream depletion effects of groundwater takes
e) imposing limits in relation to minimum flows or groundwater levels
f) requiring water metering, monitoring and reporting use of water for frost protection, and other activities if necessary.

5.10.8 Policies: High Flow Allocation Adverse Effects – Water Damming

POL TANK 52: When assessing applications to dam water and to take water from the dam impoundment, ~~the Council will avoid, remedy or mitigate adverse effects of~~:

~~a) potential changes to water quality arising from subsequent changes to land use activities that may occur as a result of water being allocated for take and use from the dam and whether relevant freshwater quality objectives can be met~~
~~b) the dam and any associated lake or reservoir, and any effects of the volume, velocity, frequency, and duration of flow releases from the dam, either by itself or cumulatively with other storage structures or dams, on:~~
~~i. the uses and values for any water body identified in the objectives or Schedule 25~~
~~ii. water levels and flows in connected water bodies, including lakes and wetlands~~
~~iii. water quality, including effects on temperature and management of periphyton in connected water bodies~~
~~iv. river ecology and aquatic ecosystems, including passage of fish and eels, indigenous species habitat and riparian habitat, including in relation to the storage impoundment~~
~~v. groundwater recharge~~
~~vi. downstream land, property and infrastructure at risk from failure of the proposed dam~~
~~vii. other water users~~
~~viii. downstream river bed stability, including through sediment transfer and management of vegetation in river beds~~
~~and consider whether there are practicable alternatives~~
~~and, except as prohibited by POL TANK 56, will limit the amount of flow alteration so that the damming of surface water either on its own or in combination with other dams or water storage in a catchment does not cumulatively adversely affect the frequency of flows above three times the median flow by more than a minor amount and provided that any dam in combination with other dams or high flow takes shall not cause changes to the river flow regime that are inconsistent with specified flow triggers including those specified in Schedule 31~~.

a) consider:
i. the relevant uses and values identified in the objectives or in Schedule 25
ii. water levels and flows in connected water bodies, including lakes and wetlands
iii. water quality, including effects on temperature and management of periphyton in connected water bodies
iv. river ecology and aquatic ecosystems, including passage of fish and eels, indigenous species habitat and riparian habitat, including in relation to the storage impoundment
v. groundwater recharge
vi. downstream land, property and infrastructure at risk from failure of the proposed dam
vii. other water users
viii. downstream river bed stability, including through sediment transfer and management of vegetation in river beds
ix. impacts on landscape, natural character, mauri, and tangata whenua values
x. whether there are appropriate alternatives;
b) avoid, remedy or mitigate adverse effects of:

i. the dam and any associated lake or reservoir, and the volume, velocity, frequency, and duration of flow releases from the dam, either by itself or cumulatively with other storage structures or dams; and

ii. subsequent changes to land use activities that may occur as a result of water being allocated for take and use from the dam;

c) ensure that any dam in combination with other dams or high flow takes does not:

i. cumulatively adversely affect the frequency of flows above three times the median flow by more than a minor amount; or

ii. cause changes to the river flow regime that are inconsistent with specified flow triggers including those specified in Schedule 31.

Adverse Effects – Water Take and Storage

POL TANK 53 When assessing applications to take water for off-stream storage or to take water from the impoundment the Council will avoid remedy or mitigate adverse effects of:

a) potential changes to water quality arising from subsequent changes to land use activities as a result of water being allocated for take and use from the impoundment and whether relevant freshwater quality objectives can be met

b) the magnitude, frequency, duration and timing of water takes either by itself or cumulatively with other storage structures or dams, on:

i. the uses and values for any water body identified in the objectives

ii. water levels and flows in connected water bodies, including lakes and wetlands

iii. water quality, and the effect of the proposal on meeting the objectives of Schedule 26 including effects on temperature and management of periphyton in connected water bodies

iv. river ecology and aquatic ecosystems, including passage of fish and eels, indigenous species habitat and riparian habitat, including in relation to the storage impoundment

v. the natural form and character, riparian areas, and flood plain

vi. groundwater recharge

vii. downstream land, property and infrastructure at risk from failure of the proposed storage structure

viii. other water users

and will limit the amount of flow alteration so that the taking of surface water does not cumulatively adversely affect the frequency of flows above three times the median flow by more than a minor amount and provided that:

~~ix. the high flow take ceases when the river is at or below the median flow~~

ix. such high flow takes comply with the limits and flows ~~do not cumulatively exceed the specified allocation limits in~~ Schedule 31

x. any takes to storage existing as at 2 May 2020 will continue to be provided for within new allocation limits ~~and subject to existing flow triggers~~.

Benefits of Water Storage and Augmentation

POL TANK 54 The Council will recognise beneficial effects of water storage and augmentation schemes, including water reticulation in the TANK catchments and out-of-stream- storage, and when considering applications for resource consent will take into account the nature and scale of the following criteria:

a) benefits for aquatic organisms

b) affects on the values of outstanding water bodies listed in Schedule 25

c) whether water availability is improved or the level to which the security of supply for water users is enhanced

d) whether the proposal provides for the productive potential of un-irrigated land or addresses the adverse effects of water allocation limits on land and water users, especially in relation to primary production on versatile land
e) whether the proposal provides benefits to downstream water bodies at times of low flows provided through releases from storage or the dam
f) the nature and scale of potential ecosystem benefits provided by the design and management of the water storage structure, its margins and any associated wetlands
g) benefits for other water users including recreational and cultural uses and any public health benefits
h) other community benefits including improving community resilience to climate change
i) whether the proposal provides for renewable electricity generation.

POL TANK 55 The Council will carry out further investigation to understand the present and potential future regional water demand and supply including for abstractive water uses and environmental enhancement and in relation to climate change prior to the review of the planning provisions as per POL TANK 39. It will consider water storage options according to the criteria in POL TANK 54 in consultation with local authorities, tangata whenua, industry groups, resource users and the wider community when making decisions about water augmentation proposals in its Annual and Long Term Plans.

POL TANK 56 The Council will protect the instream water values and uses identified in OBJs TANK 8 and 9 for the Ngaruroro and Tūtaekurī Rivers and their tributaries, the Taruarau, Omahaki, Mangatutu and Mangaone Rivers by prohibiting the construction of dams on the mainstem of those rivers.

High Flow Reservation

POL TANK 57 The Council will allocate 20% of the total water available at times of high flow in the Ngaruroro or Tūtaekurī River catchments as specified in Schedule 31 for abstraction, storage and use for the following activities:

a) contribution to environmental enhancement that is in addition to any conditions imposed on the water storage proposal
b) improvement of access to water for domestic use at marae and papakāinga
c) the use of water for any activity, provided that:
    i. it includes contribution to a fund managed by the Council in consultation with tangata whenua
    ii. the fund will be used to provide for development of Māori wellbeing
    iii. the contribution to the fund is proportional to the amount of reserved water being taken and any commercial returns resulting from the application
d) the development of land returned to a Post-Settlement Governance Entity (PSGE) through a Treaty Settlement.

And in making decisions on applications to take and store this water the Council will:

e) require information to be provided that demonstrates how the activity will provide for Māori economic, cultural or social well-being
f) have regard to the views of any affected PSGE or iwi authority arising from consultation about the application and any assessment of the potential to provide part, or all of the 20% high flow allocation
g) have regard to any relevant provisions for the storage and use of high flow allocation water for Māori development in any joint iwi/hapū management plans relevant to the application (where more than one PSGE, iwi/hapū is affected, the iwi management plan must be jointly prepared by the affected iwi/hapū).

POL TANK 58 When making decisions about resource consent applications to take and store high flow water, the Council will take into account the following matters:

a) whether water allocated for development of Māori well-being is still available for allocation
b) whether there is any other application to take and use the high flow allocation for development of Māori well- being relevant to the application

c) the scale of the application and whether cost effective or practicable options for taking and using the high flow allocation for Māori development can be incorporated into the application
d) the location of the application and whether cost effective or practicable options for including taking and using water for Māori development can be developed as part of the application
e) whether there has been consultation on the potential to include taking and using all or part of the water allocated for Māori development into the application
f) whether it is the view of the applicant that a joint or integrated approach for the provision of the high flow water allocated to Māori development is not appropriate or feasible, and the reasons why this is the case.

Climate change

POL TANK 59 The Council will require decisions on land and water management to consider:

a) the effects on climate change on aquatic ecosystems, indigenous biodiversity, freshwater bodies, water supply, human health, primary production and infrastructure from the predicted:
   i. Increases in intensity and frequency of rainfall
   ii. effects of rainfall on erosion and sediment loss
   iii. increases in sea level and the effects of salt water intrusion
   iv. increasing frequency of water shortages
   v. increasing variability in river flows
b) the amount of information available
c) the scale and probability of adverse effects, particularly irreversible effects, as a consequence of acting or not acting
d) the timeframes relevant to the activity
e) how to improve community resilience for changes
f) opportunities to reduce greenhouse emissions alongside other contaminant losses.

Chapter 6 New Regional Rules

Amend *Summary of Existing Rules to insert a new Section 6.10:*

6.10 TANK Catchments specific rules	Classification	Page [TBC]
6.10.1 Use of Production Land		
Rule TANK 1 Use of Farm Land	Permitted	0
Rule TANK 2 Use of Farm Land	Controlled	0
Rule TANK 3 Use of Production Land	Permitted	0
Rule TANK 4 Use of Production Land (land use change)	Controlled	0
Rule TANK 5 Use of Production Land (land use change)	Restricted Discretionary	0
6.10.2 Take and Use of Water		
Rule TANK 6 Take and use of surface water	Permitted	0
Rule TANK 7 Take and use of groundwater	Permitted	0
Rule TANK 8 Take and use groundwater (Heretaunga Plains)	Restricted Discretionary	0
Rule TANK 9 Take and use ground or surface water	Restricted Discretionary	0
Rule TANK 10 Take and use water	Discretionary	0
Rule TANK 11 Take and use water	Non-complying	00
Rule TANK 12 Take and use water	Prohibited	0
Rule TANK 13 Take and use water (high flow)	Discretionary	0
Rule TANK 14 Damming water	Discretionary	0

Rule TANK 15 Take and use water (from an impoundment)	Restricted Discretionary	0
Rule TANK 16 Take and use water	Discretionary	0
Rule TANK 17 Take and use water (from an impoundment)	Non-complying	0
Rule TANK 18 Damming water	Prohibited	0
Rule TANK 19 Stream flow maintenance	Restricted Discretionary	0
Rule TANK 20 Stream flow maintenance	Discretionary	0
6.10.3 Discharge of Stormwater		
Rule TANK 21 Stormwater	Permitted	0
Rule TANK 22 Stormwater	Restricted Discretionary	0
Rule TANK 23 Stormwater	Controlled	0
Rule TANK 24 Stormwater	Restricted Discretionary	0
Rule TANK 25 Stormwater	Discretionary	0

***Insert** the following rules as new Section 6.10*

6.10 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment Rules (TANK)

6.10.1 Use of Production Land

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 1 Use of Farm Land	**The use of farm land where: 20 or more hectares of the farm is arable land use; or 5 or more hectares of the farm is horticultural land use; or 20 or more hectares of the farm is pastoral land use; or 20 or more hectares of the farm is a combination of any 2 or more of the land uses described above**	**Permitted**	a) The farm has less than 75% plantation forest cover[4]. b) Either: 1. The is either a member of a TANK Industry Programme or a member of a TANK Catchment Collective within the timeframes specified in Schedule 27 and accordance with the requirements of Schedule 29 Or: 2. The farm operator shall prepare a Freshwater Farm Plan in accordance with the requirements of Schedule 29 and within the timeframes specified in Schedule 27; and the Freshwater Farm Plan is being implemented and: 1. the Council shall be provided with the Freshwater Farm Plan upon request 2. information about the implementation of the mitigation measures identified for the farm shall be supplied to the Council on request.		

[4] The National Environmental Standards: Plantation Forestry also apply where there is plantation forest. This rule only applies if a property has less than 75% plantation forest cover

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 2 Use of Farm Land	**The use of farm land where:** **a) 20 or more hectares of the farm is arable land use; or** **b) 5 or more hectares of the farm is horticultural land use; or** **c) 20 or more hectares of the farm is pastoral land use; or** **d) 20 or more hectares of the farm is a combination of any 2 or more of the land uses described above.**	**Controlled**	a) The activity does not meet the conditions of Rule TANK 1.	1. The target attribute states in Schedule 26 for the catchment where the activity is being undertaken and any measures required to reduce the actual or potential contaminant loss occurring from the property, taking into account their costs and likely effectiveness and including performance in relation to industry good management practice and requirements for: a) Efficient use of nutrients and minimisation of nutrient losses b) Wetland management c) Riparian management d) Management of farm wastes e) Management of stock including in relation to water ways and contaminant losses to ground and surface water f) Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways, and damage to soil structure g) Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment process for the Registered Drinking Water Supply. 2. Timeframes for any alternative mitigation measures 3. Duration of consent 4. Lapsing of consent 5. Review of consent conditions The collection, recording, monitoring and provision of information concerning the exercising of the consent.	Consent applications will generally be considered without notification and without the need to obtain written approval of affected persons.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 3 Use of Production Land	**Land use change in the TANK catchments pursuant to Section 9(2) RMA and associated non-point source discharges pursuant to Section 15 of the RMA.**	**Permitted**	a) The **land use change** is a change from the land use that existed at 2 May 2020 and b) The amount of intensive winter grazing does not increase by more than 10 hectares on a farm compared to any time prior to 2 May 2020. or The **land use change** ~~in land use~~ is no more than 10 hectares when the change is from a land use with a lower nitrogen leaching risk level to a higher leaching risk level as shown in Table 1 of Schedule 28 **except** where the land use change is between levels 1 – 3 and the land use change is no more than 20 hectares.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 4 Use of Production Land	**Land use change in in the TANK catchments pursuant to Section 9(2) RMA and associated non- point source discharges pursuant to Section 15 of the RMA**	**Controlled**	a) The activity does not comply with the conditions of Rule TANK 3. b) The area of intensive winter gazing does not increase by more than 10 hectares compared to the total area in any year prior to 2 May 2020. c) The change in land use is no more than 10% of the total farm area, provided that the farm operator of the production land subject to the changed land use is a member of a Catchment Collective which has a Catchment Collective Freshwater Plan meeting the requirements of Schedule 29.	1. Modelling using models approved by Council to demonstrate the change in land use activity will be consistent with the requirements of POL TANK 20 2. Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with Policy 59 3. The measures being undertaken by the Catchment Collective to meet the 2040 target attribute states, including measures required as a result of the proposed land use change. 4. Measures to be undertaken which contribute to meeting the 2040 target attribute states including by: a) Efficient use of nutrients and minimisation of nutrient losses b) Wetland management c) Riparian management d) Management of farm wastes e) Management of stock including in relation to waterways and contaminant losses to ground and surface water f) Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways, and damage to soil structure g) Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment process for the Registered Drinking Water Supply 5. Timeframes for any alternative mitigation measures 6. Duration of consent	Consent applications in that catchment will be considered without public notification and without the need to obtain written approval of affected persons.

				7. Lapsing of consent 8. Review of consent conditions 9. The collection, recording, monitoring and provision of information including relevant model files.	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 5 Use of Production Land	**Land use change in The changing of a use of production land on farm properties or farming enterprises that are greater than 10 hectares in the TANK catchments pursuant to Section 9(2) RMA and associated non-point source discharges pursuant to Section 15 of the RMA.**	**Restricted Discretionary**	a) The activity does not meet the conditions of Rule TANK 4.	1. Modelling using models approved by Council to demonstrate the change in land use activity will be consistent with the requirements of POL TANK 20 2. Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with Policy 59 3. The measures being undertaken by any relevant Catchment Collective to meet 2040 target attribute states, including measures required as a result of the proposed land use change 4. Whether 2040 target attribute states in Schedule 26 are being met in the catchment where the new activity is to be undertaken 5. The extent to which the land use change will affect the ability to meet water quality objectives 6. Any measures required to reduce the actual or potential contaminant loss occurring from the property, taking into account their costs and likely effectiveness and including performance in relation to industry good management practice and requirements for: a. Efficient use of nutrients and minimisation of nutrient losses b. Wetland management c. Riparian management d. Management of farm wastes e. Management of stock including in relation to waterways and contaminant losses to ground and surface water f. Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways,	If water quality limits and targets in Schedule 26 are being met in the catchment, consent applications in that catchment will be considered without public notification and without the need to obtain written approval of affected persons

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				and damage to soil structure g. Measures to prevent or minimise any adverse effects on the quality of the h. source water used for a Registered Drinking Water Supply irrespective of any treatment process for the Registered Drinking Water Supply 7. Timeframes for any alternative mitigation measures 8. Duration of consent 9. Lapsing of consent 10. Review of consent conditions 11. The collection, recording, monitoring and provision of information.	

Water – Take and Use

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 6 **Surface Water take**	**The take and use of surface water in the TANK Water Quantity Areas including under Section14(3)(b) of the RMA and from a dam or water impoundment**	**Permitted**	a) Any take first commencing after 2 May 2020 is not from any of the following: (i) Maraekakaho Water Quantity Area (ii) Ahuriri Water Quantity Area (iii) Awanui Stream Water Quantity Area (iv) Poukawa Water Quantity Area (v) Louisa Stream Water Quantity Area (vi) Paritua-Karewarewa Water Quantity Area. b) The take shall not exceed 5 cubic metres per day per property except: (i) Lawful takes existing as at 2 May 2020 may continue to take up to 20cubic metres per property per day. This may include (but not be limited to) the taking and use of water for the purpose of avoiding the death of horticultural or viticultural rootstock. (ii) New takes to meet reasonable domestic needs may take up to 15 cubic metres over any 7 day period per dwelling house on the property (iii) Lawful takes for stock drinking water on the property existing as at 2 May 2020 (iv) Takes occurring for a period of less than 28 days within any 90 day period, the total volume taken on any property shall not exceed 200 cubic metres per 7 day period. c) The taking of water shall not cause any stream or river flow to cease d) Fish, including eels, shall be prevented from entering the reticulation system e) The activity shall not cause changes to the flows or levels of water in any connected wetland f) The take shall not prevent from taking water any other lawfully established efficient groundwater take, or any lawfully established surface water take, which existed prior to commencement of the take g) The rate of take shall not exceed 10% of the instantaneous flow[5] at the point of take.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			A Means of Compliance for Condition d) Installation of a screen or screens on the river intake that has a screen mesh size not greater than 3 millimetres and is constructed so that the intake velocity at the screen's outer surface is less than 0.3 metres per second and is maintained in good working order at all times. Note – Conditions of this rule do not apply to the take and use of water in accordance with RMA Section 14(3)(e).		
TANK 7 **Groundwater take**	**The take and use of groundwater in the TANK Water Quantity Areas including under Section14(3)(b) of the RMA**	**Permitted**	a) Any take first commencing after 2 May 2020 is not from the Poukawa Water Quantity Area. b) There is only one point of take per property and the take does not exceed 5 cubic metres per day except: i. Lawful takes existing as at 2 May 2020 may continue to take up to 20 cubic metres per property per day. This may include (but not be limited to) the taking and use of water for the purpose of avoiding the death of horticultural or viticultural rootstock. ii. New takes to meet reasonable individual domestic needs may take up to 15 cubic metres over any 7 day period per dwellinghouse on the property[6] iii. Lawful takes for stock drinking water on the property existing as at 2 May 2020 iv. Takes occurring for a period of less than 28 days within any 90 day period, the total volume taken on any property shall not exceed 200 cubic metres per 7 day period. v. The taking of water for non-consumptive uses including aquifer testing is completed within 7 days of its commencement and is limited to 20 cubic metres per day.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			c) The rate of take shall not exceed 10 l/s other than aquifer testing for which the rate of take is not restricted d) The take shall not prevent from taking water, any other lawfully established efficient groundwater take, or any lawfully established surface water take, which existed prior to commencement of the take e) The take shall not cause changes to the flows or levels of water in any connected wetland f) Backflow of water or contaminants into the bore shall be prevented. Note – Conditions a) and b) do not apply to the take and use of water for emergency or training purposes in accordance with RMA Section 14(3)(e).		
TANK 8 **Groundwater Take – Heretaunga Plains**	**Replacement of an existing Resource Consent to take and use water from the Heretaunga Plains Groundwater Quantity Area**	**Restricted Discretionary**	a) The activity does not comply with the conditions of Rule TANK 7 b) An application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global application that replaces these existing water permits previously held separately or individually. **Actual and Reasonable Re-allocation** c) The quantity taken and used, other than provided for under d), is the **Actual and Reasonable** amount d) The quantity taken and used for municipal, community and papakāinga water supply is: i) the quantity specified on the permit being replaced or ii) any lesser quantity applied for.	1. The extent to which the need for water has been demonstrated and is Actual and Reasonable provided that the quantities assessed or calculated may be amended after taking account of: a. the completeness of the water permit and water meter data record b. the climate record for the same period as held by the Council (note: these records will be kept by the Council and publicly available) and whether that resulted in water use restrictions or bans being imposed c. effects of water sharing arrangements d. crop rotation/development phases.	Applications may be considered without notification and without the need to obtain the written approval of affected persons in accordance with section 94(1)(b) of the RMA. Applications may be notified if special circumstances exist in terms of section 95B(10) of the RMA or upon review of a consent.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			Stream Flow Maintenance Scheme e) The take is subject to a stream depletion calculation **General Conditions** f) A water meter is installed g) Back flow of water or contaminant entry into the bore shall be prevented. **Advisory Note:** Any application to change water use as specified under (c) (d) or (e) may trigger a consent requirement under Rules TANK 4 or 5.	2. Previous history of exercising the previous consent 3. The quantity, rate, and timing of the take, including rates of take and any other requirements in relation to any minimum or trigger flow or level given in Schedule 30 and rates of take to limit drawdown effects on neighbouring bores 4. Where the take is in a Source Protection Zone or source protection extent, the actual or potential effects of the rate of take and volume abstracted on the quality of source water for the water supply and any measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment including notification requirements to the Registered Drinking Water supplier 5. For applications to take water for municipal, community and papakāinga water supply: a) provisions for demand reduction and asset management over time so that water use is at reasonable and justifiable levels including whether an Infrastructure Leakage Index of 4 or better will be achieved b) rate and volumes of take limited to the projected demand provided for in the projections referred to in POL TANK 47a ~~for the urban area provided in the HPUDS 2017~~ c) water demand based on residential and non-residential use including for schools, rest homes, industrial	

				demand within the planned reticulation areas d) any Source Protection Zone or extent (as specified in Schedule 35) and: i. any proposed changes to provisional protection areas ii. the impacts of any changes to restrictions on land or water use activities in the protection area 6. Measures to achieve efficient water use or water conservation and avoid adverse water quality effects including the method of irrigation application necessary to achieve efficient use of the water and avoid adverse water effects through ponding and runoff and percolation to groundwater 7. The effects of any water take and use for frost protection on the flows in connected surface water bodies 8. For applications other than irrigation, municipal, community or papakāinga water supply or frost protection, measures to ensure that the take and use of water meets an efficiency of use of at least 80% 9. Management of bores including means of backflow prevention and ensuring well security. 10. Information to be supplied and monitoring requirements including timing and nature of water metering data reporting and the installation of telemetered recording and reporting 11. The duration of the consent (Section 123 of the RMA) as provided for in Schedule 33 timing of reviews and purposes of reviews (Section 128 of the RMA)	

				12. Lapsing of the consent (Section 125(1) of the RMA) 13. Stream flow depletion amount in litres per second calculated using the Stream Depletion Calculator 14. Review of permit and new conditions to be imposed in respect of contribution to a stream flow maintenance and habitat enhancement scheme, when applicable.	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 9 **Surface and groundwater water takes (abstraction at low flows)**	**Replacement of an existing Resource Consent to take and use water.**	**Restricted Discretionary**	a) The take is not from the Heretaunga Plains Groundwater Quantity Areas b) The taking and use of water from surface or groundwater water bodies does not comply with conditions of Rules TANK 6, or TANK 7 c) Where the take was previously subject to a condition restricting the take at flows that are higher than the applicable flow specified in Schedule 30, the higher flow will continue to apply. For all other takes, the flows specified in Schedule 30 apply An application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global application that replaces these existing water permits previously held separately or individually **Actual and Reasonable Re-allocation** e) The quantity taken and used, other than provided for by f), is the **Actual and Reasonable** amount. f) The quantity taken and used for municipal, community and papakāinga water supply is the quantity specified on the permit being replaced or any lesser quantity applied for **Surface Water Quantity Area** g) Any take from groundwater in Zone 1 Groundwater authorised as at 2 May 2020 in any surface Water Quantity Area is subject to a stream depletion calculation **General Conditions** h) A water meter is installed i) Fish and eels are prevented from entering the reticulation system j) Back flow of water or contaminants into any bore shall be prevented.	1. The extent to which the need for water has been demonstrated and is Actual and Reasonable provided that the quantities assessed or calculated may be amended after taking account of: i) the completeness of the water permit and water meter data record ii) the climate record for the same period as held by the Council (note: these records will be kept by the Council and publicly available) and whether that resulted in water use restrictions or bans being imposed iii) effects of water sharing arrangements iv) crop rotation/development phases 2. Previous history of exercising the previous consent 3. The quantity, rate and timing of the take, including rates of take and any other requirements in relation to any relevant minimum flow or level or allocation limit given in Schedule 30 4. Where the take is in a Source Protection Zone or source protection extent, the actual or potential effects of the rate of take and volume abstracted on the quality of source water for the water supply and any measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water	Applications may be considered without notification and without the need to obtain the written approval of affected persons in accordance with section 94(1)(b) of the RMA. Applications may be notified if special circumstances exist in terms of section 95B(10) of the RMA or upon review of a consent

			Advisory Note: Any application to change water use as specified under (c) (d) or (e) may trigger a consent requirement under Rules TANK 4 or 5. **Means of Compliance for Condition (j)** d) Installation of a screen or screens on the river intake that has a screen mesh size not greater than 3 millimetres and is constructed so that the intake velocity at the screen's outer surface is less than 0.3 metres per second and is maintained in good working order at all times.	Supply irrespective of any treatment including notification requirements to the Registered Drinking Water supplier 5. For applications to take water for municipal, community and papakāinga water supply: i) provisions for demand reduction and asset management over time so that water use is at reasonable and justifiable levels including whether an Infrastructure Leakage Index of 4 or better will be achieved ii) rate and volumes of take limited to the projected demand provided for in the projections referred to in POL TANK 47a ~~for the urban area provided in the HPUDS 2017~~ iii) water demand based on residential and non-residential use including for schools, rest homes, and industrial demand, within the planned reticulation areas 6. The location of the point(s) of take 7. The effects of any water take and use for frost fighting on the natural flow regime of the river 8. Information to be supplied and monitoring requirements including timing and nature of water meter data reporting and the installation of telemetered recording and reporting 9. For applications other than irrigation, municipal, community or papakāinga water supply or frost protection, evidence that the take and use of water meets an efficiency of use of at	

				least 80% 10. Measures to achieve efficient water use or water conservation and avoid adverse water quality effects including the method of irrigation application necessary to achieve efficient use of the water and avoid adverse water effects through ponding and runoff and percolation to groundwater 11. Management of bores and other water take infrastructure including means of backflow prevention 12. Measures to prevent fish from entering the reticulation system 13. The duration of the consent (Section 123 of the RMA) as provided for in Schedule 33 timing of reviews and purposes of reviews (Section 128 of the RMA) 14. Lapsing of the consent (Section 125(1) of the RMA) 15. For takes from Zone 1 Groundwater in the Ngaruroro and Tūtaekurī Water Quantity Areas review of permit and new conditions to be imposed in respect of contribution to a Stream flow maintenance and habitat enhancement scheme, when applicable.	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 10 **Groundwater and Surface water take (low flow)**	**The take and use of surface (low flow allocations) or groundwater**	**Discretionary**	a) The activity does not comply with the conditions of Rules TANK 8 or TANK 9 b) Either: i. The application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global application that replaces these existing water permits previously held separately or individually Or: ii. The total amount taken, either by itself or in combination with other authorised takes in the same water quantity area does not cause the total allocation limit in the relevant quantity area as specified in Schedule 30 to be exceeded except ~~this clause does not~~ these allocation limits do not apply to takes for: 1. frost protection 2. takes of water associated with and from or dependant on release of water from a water storage impoundment, or managed aquifer recharge scheme 3. water takes that are non- consumptive 4. temporary water takes 5. water required as part of a programmed or staged development existing as at 2 May 2020 that is not otherwise Actual and Reasonable water use.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 11 **Groundwater take**	**The take and use of groundwater**	**Non-complying**	a) The activity does not comply with the conditions of Rule TANK 10 b) The take and use is for: i.essential human health needs or ii. an unforeseeable non-commercial need.		
TANK 12 **Groundwater and Surface water take**	**The take and use of surface or groundwater**	**Prohibited**	a) The activity does not comply with the conditions of Rule TANK 10 or 11 No application may be made for this activity.		
TANK 13 **Taking water – high flows**	**The taking and use of surface water at times of high flow** (including for storage in an impoundment)	**Discretionary**	a) The take on its own or in combination with other authorised takes is still available for allocation within the limits specified in both columns (D) and (E) of Schedule 31 where applicable b) The activity either on its own or in combination with other activities does not cause the flow regime of the river to be altered by more than c) the amount specified in Schedule 31 where applicable.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 14 **Damming water**	**The erection or placement of any dam or weir or other barrier structure, damming of surface waters and discharge from dams except as prohibited by Rule TANK 18**	**Discretionary**	a) The activity does not comply with the conditions of RRMP 67 or RRMP 68 b) Except as prohibited by Rule TANK 18, the activity either on its own or in combination with other dam or discharge activities in the same water quantity area does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 31.	Note: The construction of dams greater than 4 metres in height and holding more than 20,000 m^3 will also need a Building Consent. Dams smaller than this are exempt from the Building Act provisions.	
TANK 15 **Take and use from storage**	**Take and use from a dam or water impoundment**	**Restricted Discretionary**	a) The activity does not comply with the conditions of Rule TANK 6 b) The activity will not result in a change of land use that requires consent under Rules TANK 4 or 5.	1. The location, quantity, rate and timing of the take 2. Measures to avoid adverse water quality effects 3. Measures to ensure that the take and use of water meets an efficiency of use of at least 80% 4. Information to be supplied and monitoring requirements including timing and nature of water metering data reporting and the installation of telemetered recording and reporting 5. The duration of the consent 6. Lapsing of the consent 7. Review of consent conditions.	
TANK 16 **Take and use from storage**	**Take and use from a dam or water impoundment**	**Discretionary**	a) The activity does not comply with the conditions of Rule TANK 15.		
TANK 17	**Damming, take and use at high flow or take from a dam or water impoundment**	**Non- complying**	a) Except as prohibited by Rule TANK 18, the activity does not comply with the conditions of Rules TANK 13 - 15.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 18 Damming water	**Construction of dams or the damming of water**	**Prohibited**	a) The construction of dams or the damming of water on the mainstem of the following rivers i) Ngaruroro River ii) Taruarau River iii) Omahaki River iv) Tūtaekurī River: v) Mangaone River vi) Mangatutu River b) No application may be made for these activities.		
TANK 19 Stream Flow Maintenance and Habitat Enhancement Scheme	**Transfer and Discharge of groundwater into surface water in the Heretaunga Plains Water Quantity Area**	**Restricted Discretionary**	a) The activity does not comply with the conditions of RRMP Rule 31.	1. Location, quantity, rate, duration and timing of discharge, especially in relation to the maintenance of trigger flows in Schedule 30 2. The extent to which the activity is consistent with the requirements of POL TANK 37 and 38 3. Benefits to stream flows and aquatic ecosystems including across multiple streams as a result of the discharge 4. Benefits of the activity for flood control, climate change resilience and public access. 5. Management of the stream flow scheme 6. Compliance monitoring including monitoring for water quality 7. Measures or methods required for meeting the receiving water quality targets in Schedule 26, especially dissolved oxygen levels 8. The duration of the consent 9. Lapsing of the consent 10. Review of consent conditions.	
TANK 20 Stream Flow Maintenance and Habitat Enhancement Scheme	**Discharge of groundwater into surface water in the Heretaunga Plains Water Quantity Area**	**Discretionary**	a) The activity does not comply with the conditions of Rule TANK 19.		

Stormwater

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 21 **~~Small scale~~ S~~s~~tormwater diversion and discharge**	**The diversion and discharge of stormwater into water, or onto land where it may enter water.**	**Permitted**	a) The diversion and discharge shall not: (i) Be from an industrial trade premise (ii) Be directly into an outstanding surface water body or onto land within 10m of an outstanding surface water body (iii) cause any permanent bed scouring or bank erosion of land or any water course at or beyond that point of discharge (iv) cause or contribute to flooding of any property (v) cause any permanent reduction in the ability of the receiving environment to convey flood flows (vi) contain hazardous substances or, be from a site used for the storage, use or transfer of hazardous substances (vii) contain drainage from a stockyard (viii) cause to occur or contribute to any of the following after reasonable mixing: i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any emission of objectionable odour iii. any conspicuous change in colour or the visual clarity of the receiving water body (including the runoff from bulk earthworks) iv. any freshwater becoming unsuitable for consumption by farm animals (ix) cause to occur or contribute to the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water (x) contain ~~microbiological contaminants including~~ sewage, blackwater, greywater or animal effluent. b) All roof surfaces installed or replaced after the operative date of this rule shall be constructed from inert materials or painted with non-metal based paint and thereafter maintained in good order. ~~b) The discharge is from a property that contains less than 1000m2 of impervious area~~ c) Any structure associated with the point of discharge or	

			diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound. d) The person who discharges or diverts, or who causes the discharge or diversion to occur, shall provide such information upon request by the Council to show how Condition (a) will be met or has been met.	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 22 ~~Small scale~~ S~~s~~tormwater diversion and discharge	**The diversion and discharge of stormwater into water, or onto land where it may enter water.**	**Restricted Discretionary**	a. The activity does not comply with ~~the~~ one or more condition(s) of Rule TANK 21. b. The ~~activity~~ discharge is not from an industrial or trade premise ~~with less than 1000m2 impervious area~~. c. An application for resource consent must include a Stormwater Management Plan (Schedule 33).	1. Location of the point of diversion and discharge including its catchment area 2. Volume, rate, timing and duration of the diversion and discharge, in accordance with the Hawke's Bay Waterway Guidelines 'Stormwater Management Guidelines' (May 2009). 3. Effects of the activity on downstream flooding, flow regimes in surface water bodies, and erosion. 4. Contingency measures in the event of pipe capacity exceedance 5. Actual or likely adverse effects on aquatic ecosystems, fisheries, wildlife, habitat or amenity values in the receiving environment 6. Actual or likely adverse effects on the potability of any ground water 7. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier irrespective of any treatment process for the Registered Drinking Water Supply 8. The timing of future planned reticulated networks 9. The actual or potential effects of the activity on the target attribute states set out in Schedule 26, or where ~~relevant for other attributes~~ an attribute is included in the ANZECC Guidelines but no target attribute state is specified in Schedule 26, with reference to levels of species protection in receiving water in the ANZECC Guidelines (2018) 10. Compliance with any relevant industry codes of practice or guidelines 11. The efficacy of a Stormwater Management Plan (Schedule 33) including measures adopted to minimise the risk of contaminants of concern entering stormwater to assist in

				meeting Schedule 26 target attribute states including: i. Installation of stormwater management devices including as detailed in table 3.1 of the Hawke's Bay Regional Council Industrial Stormwater Waterway Design Guidelines (2009). ii. Alignment with relevant industry guidelines and best practice standards 12. Duration of the consent, lapse period and consent review requirements. 13. A compliance monitoring programme 14. Bonds or Administrative charges. 15. Design in accordance with Hawke's Bay Waterway Guidelines' (May 2009). 16. The collection, recording, monitoring, reporting and provision of information concerning the exercise of consent. 17. Effects on: i. The customary use of mahinga kai, taonga species; and ii. the spiritual and cultural values and beliefs of tangata whenua.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 23 Stormwater Diversion and discharge from local authority networks	**Diversion and discharge of stormwater from an existing or new local authority managed stormwater network into water, or onto land where it may enter water**	**Controlled**	a) The diversion and discharge shall not: i) cause any permanent bed scouring or bank erosion of land or any water course at or beyond that point of discharge ii) cause or contribute to flooding of any property, except where stormwater may be directed to a secondary flow path iii) cause any permanent reduction in the ability of the receiving environment to convey flood flows iv) Contain drainage from a stockyard v) Contain any direct connection from a sewage, blackwater or greywater system to the stormwater network vi) Cause to occur or contribute to any of the following after reasonable mixing: i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any emission of objectionable odour iii. any conspicuous change in colour or the visual clarity of the receiving water body (including the runoff from bulk earthworks) iv. any freshwater becoming unsuitable for consumption by farm animals v. the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water vi. exceedance of water quality targets for microbiological contamination b) An application for resource consent must include an Integrated Catchment Management Plan in accordance with Schedule 33.	1. The efficacy of the Integrated Catchment Management Plan including, but not limited to: a. Its contribution to achieving water quality objectives b. its implementation programme and milestones c. The comprehensiveness and reliability of the monitoring regime d. The use of low impact stormwater design methods 2. The actual of potential effects of the activity on the target attribute states set out in Schedule 26 or where relevant for other attributes, with reference to levels of species protection in receiving water in the ANZECC Guidelines (2018) 3. The characteristics of the proposed discharge and its effects on the receiving environment 4. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier irrespective of any treatment process for the Registered Drinking Water Supply 5. Duration of the consent 6. Review of consent conditions 7. Compliance monitoring 8. Administrative charges. 9. Effects on: i.the customary use of mahinga kai, taonga species; and, ii.the spiritual and cultural values and beliefs of tangata whenua 10. Effects on native fish migration and spawning habitats.
TANK 24 Stormwater discharge from industrial or trade premises	**Discharge of stormwater to water or onto land where it may enter water from any industrial or trade premises**	**Restricted discretionary**	a) The activity does not comply with one or more condition(s) of Rule TANK 21. b) An application for resource consent must include a Stormwater Management Plan (Schedule 33) c) The diversion and discharge: (i) shall not cause permanent bed scouring or bank erosion of land or alter the natural course of any	1. Location of the point of diversion and discharge including its catchment area and consideration of alternative sites for discharge. 2. Volume, rate, timing and duration of the diversion and discharge in accordance with the Hawke's Bay Waterway Guidelines 'Stormwater Management Guidelines' (May 2009).

			water body (ii) shall not cause or contribute to flooding of any property (iii) shall not cause any permanent reduction in the ability of the receiving environment to convey flood flows (iv) shall not contain hazardous substances, except petroleum hydrocarbons and the stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petrol hydrocarbons prior to release (v) shall not be directly into an outstanding surface water body or onto land with 10m of an outstanding water body. d) The diversion and discharge shall not cause any of the following to occur after reasonable mixing: (i) production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials (ii) any emission of objectionable odour (iii) any conspicuous change in colour or the visual clarity (iv) result in any freshwater becoming unsuitable for consumption by farm animals e) The diversion and discharge shall not cause to occur or contribute to: (i) the destruction or degradation of any habitat, mahinga kai, plan or animal in any water body or coastal water (ii) the discharge of microbiological contaminants, including sewage, blackwater, greywater or animal effluent f) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clearof debris, does not obstruct fish passage and is structurally sound.	3. Actual or likely adverse effects on aquatic ecosystems, fisheries, wildlife, habitat or amenity values in the receiving environment. 4. Effects on native fish migration and spawning habitats. 5. The efficacy of the Stormwater Management Plan (Schedule 33) including measures adopted to minimise the risk of contaminants of concern entering stormwater to assist in meeting Schedule 26 target attribute states or where relevant for other attributes, with reference to levels of species protection in receiving water in the ANZECC Guidelines (2018) including: (a) Design, installation and maintenance of stormwater management devices including as detailed in table 3.1 of the Hawke's Bay Regional Council Industrial Stormwater Waterway Design Guidelines (2009) (b) Alignment with relevant industry guidelines and best practice standards 6. Water quality standards in the discharge in relation to any contaminants being used on site and specific methods for treating these 7. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier irrespective of any treatment process for the Registered Drinking Water Supply 8. The characteristics of the proposed discharge and its effects on the receiving environment 9. Duration of the consent, lapse period and consent review requirements. 10. Review of consent condition. 11. Compliance monitoring. 12. Design in accordance with Hawke's Bay Waterway Guidelines 'Stormwater Management Guidelines' (May 2009). 13. Effects on: i. The customary use of mahinga kai, taonga species; and ii. the spiritual and cultural values and beliefs of tangata whenua.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 25 Stormwater activities	**The diversion and discharge of stormwater into water, or onto land where it may enter water.**	**Discretionary**	a) The activity does not comply with Rules TANK 21 to TANK 24.	

Chapter 6.9 Amendments to Regional Resource Management Plan Rules (see below underline/strikeout version of chapter 6)

Proposed Plan Change 9 proposes changes to Chapter 6 of the RRMP and make consequential changes to the rules and to insert new provisions relevant to the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments. The amendments subject to the Proposed Plan Change are shown below in bold with new text underlined and text to be deleted shown in strikeout. (Editor's Note: Only the text shown **underlined** and in **bold** have been the subject of submissions)

Bore Drilling & Bore Sealing

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
1 **Bore drilling** *Refer POL 17, 21, 27, 75*	The drilling, construction, and alteration of bores.[5]	Controlled	a) The bore shall be cased and sealed to prevent aquifer cross-connection, and leakage from the ground surface into ground water **b) <u>The bore is not located within a Source Protection Zone.</u>**	a) Bore location, diameter, depth. b) Bore screen slot size, length, depth and diameter. c) Well head completion. d) Backflow prevention. e) Information requirements, including bore logs, hydraulic head levels and aquifer tests. f) Duration of consent. g) Lapsing of consent. h) Review of consent conditions. i) Compliance monitoring.	Applications will generally be considered without notification, without the need to obtain the written approval of affected persons.

[5] For the purposes of this Plan, a **'bore'** is defined as any pipe, cylinder or hole inserted into the ground that either
- i. is created for the purpose of accessing underground water, oil or gas, or
- ii. penetrates a confined aquifer, or
- iii. in any way causes the release of water from a confined aquifer, or
- v. is created for the purpose of exploring water, oil or gas resources.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
2 **Bore drilling that does not comply with Rule 1** Refer POL 17, 21, 27, 75	The drilling, construction, or alteration of bores that does not comply with Rule 1.	**Restricted discretionary**		a) Bore location diameter, depth. b) Bore screen slot size, length, depth and diameter. c) Bore head completion. d) Backflow prevention. e) Information requirements, including bore logs, hydraulic head levels and aquifer tests. **f) In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, the actual or potential effects of the bore and bore drilling on the quality of source water for Registered Drinking Water Supplies irrespective of any treatment process for the Registered Drinking Water Supply.** **g) and any measures to reduce the risk to the water quality including advising any affected Registered Drinking Water supplier of intent to drill prior to the activity occurring, the maintenance of the bore and the well head, including decommissioning the bore where necessary.** **h) In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, information to confirm compliance with conditions (a) to (f) shall be provided to the Council.** i) Duration of consent. j) Lapsing of consent. k) Review of consent conditions. l) Compliance monitoring.	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
4 Decommis-sioning of bores *Refer POL 75*	The decommissioning or sealing of bores.	**Permitted**	a. Decommissioned bores shall be backfilled and sealed at the surface to prevent contamination of groundwater. b. Decommissioned holes and bores intersecting groundwater shall be sealed to prevent the vertical movement of groundwater, and to permanently confine the groundwater to the specific zone (or zones) in which it originally occurred. c. Backfill materials, where used between permanent seals, shall consist of clean sand, coarse stone, clay or drill cuttings. The material shall be non toxic. d. Decommissioning shall be undertaken by a suitably qualified person. e. The Council shall be advised of any bores that are decommissioned. f. **Where the bore is in a Source Protection Zone, information to confirm compliance with conditions (a) to (d) shall be provided to the Council.**		

Feedlots & Feedpads

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
5 Feedlots & feedpads[6] *Refer POL 71*	The use of land for the purposes of operating a feedlot[7] or feedpad[8].	**Permitted**	a. The land used for the feedlot or feedpad shall be managed in a manner that prevents any seepage of contaminants into groundwater [9,10]. b. The feedlot or feedpad shall be located no less than 20 m from any surface water body. c. The feedlot or feedpad shall be located no less than: i. 150 metres from a residential building or any other building being part of a place of assembly on another site ii. 50 metres from a property boundary, and iii. 20 metres from a public road. d. Runoff from the surrounding catchment area is prevented from entering the feedlot or feedpad. **e. The feedpad or feedlot is not located in a Source Protection Zone.**		

[6] Rule 5 only address the use of land for a feedlot or feedpad (and thus, the effects associated with having a high density of animals on one site). Any discharges of contaminants associated with the operation of a feedlot of feedpad, e.g. the use of stock feed and the management of animal effluent, are addressed under rules in sections 6.4 and 6.6 of this Plan. Any discharge of contaminants associated with the operation of a feedlot or feedpad, such as the disposal of animal wastes and the bedding material or the runoff of manure during heavy rainfall are addressed under Rules in Sections 6.4 and 6.6. Any discharge of contaminants to air are covered in Rule 21.

[7] For the purposes of this Plan, a 'feedlot' is defined as an area of land upon which animals are kept and fed, for more than 15 days in any 30 day period, where the stocking density or feedlot structure (e.g. a concrete pad) precludes the maintenance of pasture or ground cover.

[8] For the purposes of this Plan, a 'feedpad' is defined as an area of land to which animals are brought for supplementary feeding on a regular basis, where the stocking density or feedpad structure precludes the maintenance of pasture or ground cover.

[9] Sealing - The Council will accept, as one means of compliance with condition (a), the construction of a sealing layer with a permeability of no greater than 10^{-9} m/s (0.000000001 m/s).

[10] **Compliance** – At any time Council may request information from the operator of a feedlot or feedpad to confirm compliance with condition (a).

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
6 Feedlots & feedpads that do not comply with Rule 5[11] *Refer POL 17, 20, 47, 48, 71*	The use of land for the purposes of operating a feedlot or feedpad, in a manner which does not comply with Rule 5.	**Restricted discretionary**		a) The conditions which the activity cannot comply with, and the related environmental effects. b) Duration of consent. c) Lapsing of consent. d) Review of consent conditions. e) Compliance monitoring. **f) In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, the actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies irrespective of any treatment process for the Registered Drinking Water Supply, and any measures to manage the risks to the water quality.**	

[11] Rule 6 only address the use of land for a feedlot or feedpad (and thus, the effects associated with having a high density of animals on one site). Any discharges of contaminants associated with the operation of a feedlot of feedpad, e.g. the use of stock feed and the management of animal effluent, are addressed under rules in sections 6.4 and 6.6 of this Plan. Any discharge of contaminants associated with the operation of a feedlot or feedpad, such as the disposal of animal wastes and the bedding material or the runoff of manure during heavy rainfall are addressed under Rules in Sections 6.4 and 6.6. Any discharge of contaminants to air are covered in Rule 21.

Vegetation Clearance and Soil Disturbance Activities

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
7 Vegetation clearance and soil disturbance[12] 29a *Refer to POL 3, 67, 71*	Vegetation clearance[13] or soil disturbance[14] activities.	**Permitted**	a) All cleared vegetation, disturbed soil or debris shall be deposited or contained to reasonably prevent the transportation or deposition of disturbed matter into any water body[15]. b) Vegetation clearance or soil disturbance shall not give rise to any significant change in the colour or clarity of any adjacent water body, after reasonable mixing. c) No vegetation clearance shall occur within 5 metres of any permanently flowing river, or any other river with a bed width in excess of 2 metres, or any other lake or wetland, except that this condition shall not apply to:		

[12] Rule 7 does not apply to the trimming, felling, or removing of any tree or vegetation or earthworks, in relation to an existing high voltage electricity transmission lines. Refer to the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009.

[29a] Rule 7 does not apply to the harvesting, vegetation clearance and soil disturbance associated with plantation forestry activities. Refer to the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017.

[13] "Vegetation clearance" means the cutting, burning, clearing or destruction (including destruction by spraying) of trees, shrubs, or plants.

[14] "Soil disturbance" means the disturbance of soil by any means including blading, contouring, ripping, discing, root raking, moving, ploughing, removing, cutting and blasting. Vegetation clearance and soil disturbance exclude:

- The normal maintenance of legally established structures, roads, tracks, railway lines and river beds.
- The clearance of grasses, forest thinning, and agricultural and horticultural crops.
- The clearance of isolated or scattered regrowth on productive pasture.
- The clearance of any indigenous vegetation understorey beneath plantation forests.
- The clearance of noxious weeds covered by the Regional Plant Pest Management Strategy prepared under the Biosecurity Act, 1993.
- Non-motorised soil disturbance activities.
- Thrusting, boring, trenching or mole ploughing associated with cable or pipe laying or a network utility operation.
- Soil disturbance undertaken by a mine or quarry operation which either had a valid mining licence at the date the Proposed Regional Resource Management Plan was publicly notified (15 April 2000) or is lawfully established.
- Cultivation and grazing.
- Foundations works for structures.
- Construction and maintenance of fences and drains.

[15] Explanation of Rule 7 (a): In considering whether condition (a) in Rule 7 has been met, Council shall have regard to recognised Industry Codes of Practice, Best Practice Guidelines and Environmental Management Plans relevant to and adopted in carrying out the activity.
NOTE: 10 kg/m^2 of dry soil is equivalent to 5 mm depth assuming a specific gravity of 2 kg/litre.
[32a] NOTE: Rule 7(c) has been deleted to ensure the Regional Plan aligns with the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 and does not conflict with, or duplicate the requirements within those Regulations.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			the clearance of plantation forestry established prior to the date of this Plan becoming operative, or 32a the areas identified in Schedule X to this Plan. d. Deposition of soil or soil particles across a property boundary shall not be objectionable or offensive, cause property damage or exceed 10 kg/m^2. e. Where the clearance of vegetation or the disturbance of soil increases the risk of soil loss the land shall be: i. re-vegetated as soon as practicable after completion of the activity, but in any event no later than 18 months with species providing equivalent or better land stabilisation; or ii. retained in a manner which inhibits soil loss. **f. In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, there is no clearance of indigenous vegetation within 10m of any rivers except:** **i. where the clearance is part of improvements to riparian management for water quality/biodiversity purposes as specified in the relevant Freshwater Farm Plan or Catchment Collective Plan** **ii. where the clearance is necessary for construction of crossings or installation of a reticulated or network service provided that the appropriate iwi authority and Hawke's Bay Regional Council shall be notified at least 5 working days before any clearance is undertaken.** **g) In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments there is no cultivation of land over 20 degrees of slope except where it is less than 10% of the paddock area.** **h) In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, there is no cultivation of land that results in exposure of bare soil within:** **i. 5 m of any river, modified watercourse or drain or lake or wetland where the land is flat to gently rolling (0-7 degrees of slope)** **ii. 10 m of any river, modified watercourse or drain or lake or wetland where the land is moderately rolling (>7 – 20 degrees of slope)** **iii. 15 m of any river, modified watercourse or drain or lake or wetland where the land is over 20 degrees of slope.** **i) Except conditions h(i) – (ii) do not apply:** **i. where cultivation is part of improvements to riparian management for water quality/biodiversity purposes as**		

			ii. **specified in the relevant Freshwater Farm Plan or Catchment Collective Plan where the cultivation is in relation to activities permitted by Rule 70.**		

6.4.2 Agricultural Activities & Other Activities on Production Land - Discharges to Air/Land/Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
12 Stock feed Refer POL 12, 69, 71, 75	The discharge of contaminants into air, or onto or into land arising from the storage, transfer, treatment, mixing or use of stock feed[16] on production land, including silage.	**Permitted**[17]	a) Any area in the Heretaunga Plains unconfined aquifer (Schedule Va) or the Ruataniwha Plains unconfined aquifer (Schedule IV) which is used for storing stock feed, including silage, and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination. b) Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property. c) There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d) The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. e) There shall be no discharge within 20 m of any surface water body. f) There shall be no surface ponding in any area used to store stock feed or feed stock, and no runoff of contaminants into any surface water body. g) There shall be no discharge within 30 m of any bore or well. **h) Where the activity is in a Source Protection Zone, information to confirm compliance with conditions (a) to (g) shall be provided to the Council upon request.**		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
13 Use of compost, biosolids & other soil condition-ers[18] *Refer POL*	The discharge of contaminants into air, or onto or into land, arising from the storage, transfer, treatment, mixing or use of compost, biosolids and other (solid or liquid) organic material for soil	**Permitted**[21]	a) Any area in the Heretaunga Plains unconfined aquifer (Schedule Va) or the Ruataniwha Plains unconfined aquifer (Schedule IV) which is used for storing organic material and when there is a potential for contamination of ground water by seepage of contaminants, shall be managed in a manner that prevents such contamination. b) Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property. c) There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d) The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. e) There shall be no surface ponding in the area used to store, mix or use the organic material, and no runoff of contaminants into any surface water body. f) There shall be no discharge within 30 m of any bore or well. g) The discharge shall occur no less than 600 mm above the winter ground water table. h) Where material is discharged onto grazed pasture, the application rate shall not exceed 150 kg/ha/y of nitrogen. i) Where material is discharged onto land used for a crop, the application rate shall not exceed the rate of nitrogen uptake by the crop. j) **Where the activity is in a Source Protection Zone, the storage or processing of compost or bio-solids and other soil conditions does not exceed 100 cubic metres of material.**		

[16] For the purposes of this Plan, "stock feed" means organic material that can be consumed by farmed animals.

[17] If Rule 12 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

[21] If Rule 13 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

[18] If Council receives complaints about an activity operating under this rule, the Council may request a management plan which sets out how the conditions are being met.

[19] For the purpose of this rule "soil conditioning purposes" means the application of organic material to improve the structure and quality of the soil

[20] The composting of more than 100 m^3 of compost and raw material per premises is regulated by Rule 28.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
14 Animal effluent *Refer POL* 8, 12, 14, 17, 19, 47	The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent[22], including dairy shed effluent, piggery effluent, and poultry farm effluent[23], including associated sludges (except as provided for by Rules 13 & 15).	**Controlled[24]**	a. Any area used for storing animal effluent, where there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents any such contamination. b. Either: i. there shall not be offensive or objectionable odour, or noxious or dangerous levels of gases or other airborne liquid contaminants, beyond the boundary of the subject property, or ii. for discharges of effluent from piggeries, every point of discharge shall be sited so as to meet the requirements of the "Code of Practice - Pig Farming" (New Zealand Pork Industry Board, 1997), in respect of buffer zone distances. c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d. There shall be no runoff of any contaminant into any surface water body. e. There shall be no discharge within 30 m of any bore or well. f. Where effluent is discharged onto grazed pasture, the nitrogen loading rate from the effluent application shall not exceed 150 kg/ha/y of nitrogen. g. Where effluent is discharged onto land covered by a crop, or to be used for cropping purposes, the application rate shall not exceed the rate of nitrogen uptake by the crop. **h. <u>The activity is not in a Source Protection Zone.</u>**	a. Amount of effluent per discharge. b. Frequency of discharge. c. Maintenance of vegetative cover. d. Buffer zone requirements. e. Measures to avoid a breach of the environmental guidelines for surface and groundwater quality set out in section 5.4 and 5.6. f. Management of cumulative adverse effects. g. For discharges of effluent from piggeries, use of the best practicable option for minimising discharges of odour beyond the boundary of the subject property. h. Duration of consent. i. Review of consent conditions. j. Compliance monitoring.	Applications may be considered without notification, without the need to obtain the written approval of affected persons, except that written approval of affected neighbours may be required for new consents, but upon renewal the approval of affected neighbours will not be required.

[22] For the purposes of this rule, "animal effluent" refers to animal excreta (excluding human waste) that is collected and managed by people, including associated process water and contaminants including associated process water, contaminants and sludges.

[23] Rule 14 covers the discharge of poultry effluent from poultry farms on land associated with the poultry farm, where the discharge is for the purpose of disposal.

[24] If Rule 14 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
15 **Discharge of animal effluent in sensitive catchments** *Refer POL 8, 17, 19, 20, 47*	The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent[25], including dairy shed effluent, piggery effluent, and poultry farm effluent in the following catchments as shown in Schedule VIb: • Headwaters of Mohaka River • Headwaters of the Ngaruroro River • Maungawhio • Lake Hatuma • Lake Tutira • Heretaunga Plains unconfined aquifer • Ruataniwha Plains unconfined aquifer • Lake Whakaki • Headwaters of the Tūtaekurī River • Headwater of the Tukituki River. **Or in any Source Protection Zone**	Discretionary			

[25] For the purposes of this rule, "animal effluent" refers to animal excreta (excluding human waste) that is collected and managed by people, including associated process water and contaminants including associated process water, contaminants and sludges.

6.5.1 Water - Discharges to Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
31 Discharge of water[26] *Refer POL, 71, 79*	The discharge of water (excluding drainage water) into water[27].	**Permitted**[28]	a. The discharge shall not cause or contribute to the flooding of any property unless written approval is obtained from the affected property owner. b. The discharge shall not cause any scouring or erosion of any land or any watercourse beyond the point of discharge. c. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3^{O}C from normal seasonal water temperature fluctuations, after reasonable mixing[29]. **d. <u>The discharge is not a discharge of groundwater into surface water in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units.</u>**		

ADVISORY NOTE:

1. Discharge of water onto or into land - Note that the discharge of water onto or into land is not restricted by the RMA.

26 Rule 31 does not apply to the discharge of water into water in relation to an existing high voltage electricity transmission activity. Refer to the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009.

27 Discharges of sediment to surface water bodies as a result of scouring are covered by Rule 49.

28 If Rule 31 cannot be complied with, then the activity is a discretionary activity under Rule 52.

29 See Glossary for definition of "after reasonable mixing".

6.6.2 Drainage Water - Discharges to Land/Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
32 Discharge of drainage water (gravity flow systems) *Refer POL 71, 72, 79*	The diversion and discharge of drainage[30] water into water or onto or into land, from a gravity flow system (without pumping).	**Permitted[31]**	a. There shall be no adverse flooding effects on any property owned or occupied by another person, as a result of any discharge from the drainage activity. b. The discharge shall not cause any scouring or erosion of any land or any water course beyond the point of discharge. c. The activity shall not adversely affect any wetland[32]. d. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3ºC from normal seasonal water temperature fluctuations, after reasonable mixing. e. Any discharge of water arising from a drainage system shall be to the same catchment[33] as that to which the water would naturally flow. **f.** Any suspended solids in the discharge shall comply with Policy 72 **except in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units.** **g. 10 years after the operative date of PC9, in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units, dissolved nutrient and sediment concentrations in the receiving water after reasonable mixing shall not increase as a result of the discharge when measuring:** **i DIN** **ii DRP** **iii suspended sediment.**		

[30] **'Drainage'** means the activity of lowering the water table to achieve productive land use to facilitate stability of land or structures, or to achieve some other resource use activity. This generally involves the diversion of water.

[31] If Rule 32 cannot be complied with, then the activity is a discretionary activity under Rule 52.

[32] For the purposes of this Plan the term 'wetland' does NOT include:

- wet pasture land
- artificial wetlands used for wastewater or stormwater treatment
- farm dams and detention dams
- land drainage canals and drains
- reservoirs for firefighting, domestic or municipal water supply
- temporary ponded rainfall
- artificial wetlands.

[33] **'Catchment'** means the total area from which a single water body collects surface and subsurface runoff.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
33 Discharge of drainage water (pumped systems) *Refer POL 71, 72, 79*	The diversion and discharge of drainage[34] water into water or onto or into land, from a pumped system[35].	**Controlled[36]**	a. There shall be no adverse flooding effects on any property owned or occupied by another person, as a result of the drainage activity. b. The discharge shall not cause any scouring or erosion of any land or any water course beyond the point of discharge. c. The activity shall not adversely affect any wetland. d. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3ºC from normal seasonal water temperature fluctuations, after reasonable mixing. e. Any discharge of water arising from a drainage system shall be to the same catchment[37] as that to which the water would naturally flow. **f.** Any suspended solids in the discharge shall comply with Policy 72 **except in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units.**	a. Location of discharge. b. Rate of pumping. c. Time of pumping. d. Flood mitigation measures. e. Duration of consent. f. Review of consent conditions. g. Compliance monitoring. **h. For activities carried out in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units:** • **monitoring water quality to categorise the nature and extent (concentration and loads) of contaminants in the drainage water; and** • **Effects on water quality and quantity in nearby surface water bodies**	Applications will generally be considered without notification or the need to obtain the written approval of affected persons.

34 **'Drainage'** means the activity of lowering the water table to achieve productive land use to facilitate stability of land or structures, or to achieve some other resource use activity. This generally involves the diversion of water.

35 While the discharge of drainage water by gravity flow is a permitted activity, the discharge of drainage water from a pumped system requires a resource consent due to the potential adverse environmental effects of greater water flow, generated by a pumped system. The consent authority may require the ability to control the water flow from time to time, such as through temporary cessation of pumping or other means.

36 If Rule 33 cannot be complied with, then the activity is a discretionary activity under Rule 52.

37 **'Catchment'** means the total area from which a single water body collects surface and subsurface runoff.

6.6.4 Domestic Sewage - Discharges to Land

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
37 **New[38] sewage systems** *Refer POL 16, 71, 75*	Except as provided for in Rule 35 or Rule 36, the discharge of contaminants (including greywater) onto or into land, and any ancillary discharge of contaminants into air, from a new sewage system.	Permitted	a. Where the wastewater receives no more than advanced primary treatment, the discharge shall be onto or into a property with a land area of no less than 2500m^2. b. aA. Where the wastewater receives more than advanced primary treatment then: i. the discharge shall be onto or into a property with a land area of no less than 1000m^2; and ii. the net site area to discharge volume ratio shall not be less than 1.5 m^2 per litre per day [39]. c. The rate of discharge of sewage (including greywater) shall not exceed 2 m^3/d, averaged over any 7 day period. d. The treatment and disposal system shall be designed to cater for the peak daily loading. e. The discharge shall not occur over the Heretaunga Plains or Ruataniwha Plains unconfined aquifer as shown in Schedule IV. f. The discharge and land treatment field shall not be within 20 m of any surface water body (including any stormwater open drain or roadside drain), or any tile drain or within 1.5 metres of any property boundary. g. eA. The system shall be designed and installed in accordance with the requirements specified in Figure 6. h. There shall be no surface ponding as a result of the discharge, or direct discharge into any water body. i. The discharge shall be distributed evenly over the entire disposal area. j. There shall be no increase in the concentration of pathogenic organisms in any surface water body as a result of the discharge. k. At the time of installation and commencement, the discharge shall not occur within 30 m of any bore drawing groundwater from an unconfined aquifer into which any contaminant may enter as a result of the discharge. l. The point of discharge shall be no less than 600 mm above the highest seasonal groundwater table. m. The discharge shall not result in, or contribute to, a breach of the "Drinking Water Quality Standards for New Zealand" (Ministry of Health, 2005 (Revised 2008)) in any groundwater body after reasonable mixing. n. The discharge shall not cause any emission of offensive or objectionable		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			o. odour, or release of noxious or dangerous gases (including aerosols) beyond the boundary of the subject property or on any public land. p. For discharges using pit privies: i. the privy shall be constructed in soil with an infiltration rate not exceeding 150 mm/h, and ii. the privy shall not be the primary wastewater system for any permanently occupied dwelling. q. The system shall be designed, constructed, operated and maintained in a manner which ensures that there is no clogging of the disposal system or soils. r. The discharge shall not be into a trench or bed disposal system constructed in category 5 or 6[40] soil except where wastewater receives at least secondary treatment. s. Where the wastewater receives secondary treatment or better, the discharge shall not exceed 20 g/m^3 of BOD, and 30 g/m^3 of suspended solids. t. The wastewater treatment and land application system shall be maintained in accordance with the manufacturer's instructions, or if no manufacturer's instructions exist, in accordance with the best management practice as described in AS/NZS 1547, or TP58: On-site Wastewater Systems: Design and Management Manual (Auckland Regional Council Technical Publication No. 58), or other alternative recognised on-site wastewater design manuals. A schedule of maintenance shall be kept, and this schedule shall be available for inspection by the Regional Council upon request. u. The discharge shall not be disposed of by way of spray irrigation. v. The discharge shall not be into a raised bed. w. **The activity is not located in a Source Protection Zone.**		

[38] NOTE: New sewage systems include those systems installed after this Plan becomes operative, as well as those lawfully established sewage systems that have been modified or replaced since 1 January 2012.

[39] NOTE: The net site area to discharge volume ratio can be calculated by dividing the net site area by the expected daily wastewater volume. If the answer is less than 1.5, the discharge does not comply with this condition. e.g. a 1000 m^2 property with a three bedroom home on it with maximum daily discharge volume of 1200 L (6 people at 200 L/p/d) has a ratio of 0.83 (1000/1200). This discharge would not comply with this condition.

[40] A category 5 soil is a light clay, permeability (Ksat) can range generally between 0.5 m/d (strongly structured) and <0.06 m/d (weakly structured or massive) and the soil is poorly drained. Clay content of approximately 35-40%. Category 6 soils are medium to heavy clays that are very poorly drained. The permeability of category 6 soils is generally less than 0.06 m/d. Clay content of over 40%.

Stormwater - Discharges to Land/Water

Insert after the heading;

Rules 42 – 46 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments. Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū rules for stormwater.

Take & Use of Water

Insert after the heading;

Rules 53 – 55 do not apply in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū rules for take and use of water.

6.7.3 Transfer of Water Permits

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
60 Transfer of permits to take & use surface water from a lake *Refer POL36*	The transfer of a permit to take and use surface water from a lake, to another site.	**Permitted**	a. The transfer is to another site within the same lake.		
61 Transfer of permits to take & use surface water from a river *Refer POL 36, 79*	The transfer of a permit to take and use surface water from a river to another site.	**Controlled**	a. The transfer is to another site within the same stream b. management zone,[41] where the flow is not significantly less than at the original site of abstraction. c. The transfer shall not result in any reduction in the rate of surface water recharge into groundwater. d. The transfer shall not adversely affect any lawfully established surface water abstraction, which existed prior to transfer of the take. e. The transfer shall not result in any increase in adverse effects on aquatic ecosystems or fish passage. **f. The transfer is not in any Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment.**	a. Timing of take. b. Design of intake. c. Duration of consent. d. Review of consent conditions. e. Compliance monitoring. f. Volume of water required by, or reasonable needs of, transferee. g. In the Tukituki River catchment, the efficient use of water having regard to POL TT12.	Consent applications will generally be considered without notification, without the need to obtain the written approval of affected persons.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
62 Transfer of permits to take & use ground-water *Refer POL 25, 77*	The transfer of a permit to take and use groundwater, to another site.	**Controlled**	a. The transfer is to another site within the same aquifer. b. The transfer is to a location at which the aquifer has the same or greater aquifer transmission and storage characteristics. c. The transfer shall not adversely affect any lawfully established efficient groundwater abstraction,[42] which existed prior to transfer of the take. d. The transfer shall not cause any reduction in the flow of any river or spring. **e. <u>The transfer is not in any Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment.</u>**	a. Aquifer testing. b. Duration of consent. c. Review of consent conditions. d. Compliance monitoring. e. Volume of water required by, or reasonable needs of transferee. f. In the Tukituki River catchment, the efficient use of water having regard to POL TT12.	Consent applications will generally be considered without notification, without the need to obtain the written approval of affected persons.

[41] "Stream Management Zone" refers to the reaches of a river and/or its tributaries governed by a single minimum flow site.

[42] For the purposes of this Plan "efficient abstraction" of groundwater means abstraction by a bore which penetrates an aquifer from which water is being drawn at a depth sufficient to enable water to be drawn all year (i.e. the bore depth is below the range of seasonal fluctuations in groundwater level), with a pump capable of drawing water to the land surface.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
Rule 62A Transfer of permits to take and use water (fix up DM)	In the TANK catchments, permanent or temporary transfer of water in accordance with S136(2)(b)(i) of the RMA	Controlled	a. The transfer is the whole or any part of the holder's interest in the permit for taking and use of surface or groundwater: i. To another person on another site ii. To another site b. The transfer is not between ground and surface water point of take c. The permit is: i. within the same catchment to any point downstream (excluding downstream tributaries) of the location to which the permit applies and ii. the transfer is within the same Water Quantity Area d. The transfer of a groundwater take is to an existing bore for which pump tests are available and there is no increase in the nature and scale of drawdown effects on neighbouring bores or connected water bodies as a result of the transfer e. The transfer does not result in an increase in nitrogen loss exceeding the amounts ~~as~~ specified in Table 2 in Schedule 28 f. All parties to the transfer shall have metering and reporting at any applicable recording and reporting level g. In fully or over-allocated water quantity areas, the transfer shall only be of that part of the permit for which there is Actual and Reasonable use h. The purpose for the water use does not change except: i. that water takes for irrigation use may be transferred for irrigation of different crops or stock drinking water ~~subject to conditions (e) and (f)~~ ii. for transfers that enable the operation of a flow enhancement scheme (ref POL TANK 36)	a. Any applicable conditions on the permit being transferred and any water use permit at the location the water is to be transferred to b. The quantity, rate and timing of the take, including rates of take and any other requirements in relation to any relevant minimum flow or level or allocation limit or drawdown effects, including in relation to any Source Protection Zone for a registered drinking water supply c. Compliance with any applicable minimum flows and levels including flow maintenance in any applicable stream.	

			iii. the transfer enables efficient delivery of water through a municipal or community water supply, including for marae and papakāinga ~~supply to meet the communities' human health needs.~~ Advisory Notes • For the purpose of (i), the transfer of water from any municipal use to any other municipal use is not considered a change in use. • Section 136(5) of the RMA provides that when notification of the transfer has occurred, the permit, or that part of the permit transferred shall be deemed to be cancelled, and the permit or part transferred shall be deemed to be a new permit subject to the same conditions as the original permit. Note that Rules TANK 4, 5 or 19 may be triggered as a result of a transfer activity.		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
Rule 62B Transfer of permits to take and use water	In the TANK catchments, permanent or temporary transfer of water in accordance with S136(2)(b)(i) of the RMA	Discretionary	a. The transfer is the whole or any part of the holder's interest in the permit for taking and use of surface or groundwater that does not comply with Rule 62A		

ADVISORY NOTE: Notifying transfers of water permits - Pursuant to section 136 of the RMA, the transfer of a water permit has no effect until written notice of the transfer has been received by the HBRC. In addition, section 136 also sets out the requirements for the transfer of a water permit in circumstances that do not comply with the rules above.

6.8.2 Erection & Placement of Dams & Other Barrier Structures, & Damming of Water

Insert after heading

Rule 69 does not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments. Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment rules for dams and damming.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
67 Dams, weirs & other barrier structures in rivers, lakes and artificial water – courses[150B] *Refer POL 79*	**Except as prohibited by Rule TANK 18,** the erection or placement of any dam[43], weir or other barrier structure in, on, under, or over the bed of a river, lake and artificial watercourse, and: • any associated damming or diversion of water, and • any associated discharge of sediment; and • any associated disturbance of the river or lake bed.	**Permitted**[44]	a. The catchment area of the new structure shall not exceed 50 hectares. b. The volume of water to be stored or retained by the new structure to spill level shall not exceed 20,000 m^3. c. The height of the structure (as measured vertically from the downstream bed to the crest) shall be no greater than 4 m. d. A spillway shall be constructed to prevent the new structure being overtopped during storm events, unless the structure is designed to allow overtopping. e. The impounded water shall not encroach onto any property, nor impede any drainage system, beyond the subject property unless agreed to in writing by any affected property owners. f. Erection or placement of the structure shall not cause any erosion, scour or deposition beyond the area of erection or placement. g. The impounded water shall not cause any erosion or instability of bordering land. h. Within rivers and lakes, provision shall be made to maintain existing fish passage within the water body and, where the water body is permanently flowing, provision shall be made to maintain a residual flow immediately downstream of the structure of at least 1.2 l/min per hectare of catchment above the structure, except at times where such flow would not have occurred prior to the construction of the structure.		

[150B] Rule 67 does not apply to dams, weirs & other barrier structures in rivers, lakes and artificial watercourses associated with plantation forestry activities. Refer to the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017

[43] Dams - Include stock water dams, Irrigation dams, fire-fighting dams and dams in artificial water courses.

[44] If Rule 67 cannot be complied with, then the activity is a discretionary activity under Rule 69.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			i. Where the volume of water to be stored or retained by the structure to spill levels exceeds 10,000 m^3 and where the structure is located within the catchment of a land drainage or flood control scheme area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and River Control Act 1941, the Land Drainage Act 1908, or the Local Government Act 1974 the HBRC shall be informed about the erection or placement of the structure at least 15 working days prior to the commencement of works. j. There shall be no disturbance of any part of the bed covered by water from 1 May to 30 September (fish spawning season) except in relation to the erection of whitebait stands, maimai, and necessary access structures to these. k. In areas of fish spawning there shall be no disturbance of any part of the bed covered by water from 1 May to 30 September (fish spawning season) except in relation to the erection of whitebait stands, maimai, and necessary access structure to these. l. Conditions (a) to (d) do not apply to structures which are located in a land drainage or flood control area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908 or the Local Government Act 1974.		
68 Existing damming of water in rivers and lakes *Refer POL 79*	Any existing damming of water associated with a lawfully established dam[45], weir, or other barrier structure in, on, under, over the bed of a river, lake or artificial water course that is not provided for by Rule 67.	**Controlled**	a. The impounded water shall not encroach onto any property beyond the subject property, unless agreed to in writing by any affected property owners.	a. Stability of the land bordering the dam. b. Residual downstream flow. c. Flood risk in the event of failure. d. Maintenance of structure. e. Duration of the consent. f. Review of consent conditions. g. Compliance monitoring.	Consent applications will generally be considered without notification without the need to obtain the written approval of affected persons.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
69 River & lake bed activities that are not expressly regulated by other rules *Refer POL 79*	**Except within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments** Any activity which cannot comply with any of the rules in section 6.8 of this Plan and which is not expressly regulated by other rules in this Plan.	**Discretionary**			

[45] Dams - Include stock water dams, Irrigation dams, fire-fighting dams and dams in artificial water courses.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
71 Activities affecting river control & drainage schemes[48,49] *Refer POL 79*	Any of the following activities, where they are undertaken by persons other than the local authority or persons acting on their behalf, within a land drainage or flood control scheme area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908, or the Local Government Act 1974: • The introduction or planting of any plant including any tree in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The erection of any building, fence or other structure in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The deposition of any rock, shingle, earth, debris or other substance in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The reclamation or drainage of the bed of any river, lake or artificial water course. • The undertaking of any other land disturbance activity which impedes access to the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The erection of any structure and the undertaking of any land disturbance activity which interferes with • the integrity of any defence against water.[50]	**Discretionary[51]**			

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
71A Activities affecting river control & drainage schemes [48,49]	**[WITHDRAWN]**		**[WITHDRAWN]**		

47 For the purpose of this Plan the term 'wetland' does NOT include:

- wet pasture land artificial wetlands used for wastewater or stormwater treatment
- farm dams and detention dams land drainage canals and drains
- reservoirs for firefighting, domestic or municipal water supply temporary ponded rainfall
- artificial wetlands.

48 It is important to note that the Hawke's Bay Regional Council owns much of the land within River Control and Drainage Schemes, and thus has landowner rights and responsibilities in relation to this land.

49 Any activity permitted by Rules 64 and 65 is not subject to Rule 71.

50 "Defence against water" includes stopbanks and their foundations.

51 The ongoing maintenance or repair of any structure authorized by a resource consent pursuant to Rule 71 is permitted pursuant to Rule 64.

SCHEDULES

Insert the following new Schedules after Schedule 25

- Schedule 26
- Schedule 27
- Schedule 28
- Schedule 29
- Schedule 30
- Schedule 31
- Schedule 32
- Schedule 33
- Schedule 34

Chapter 9 Glossary of Terms Used

Insert or amend meanings for the following words and terms into the Glossary. Note that where a term is already included, its meaning is only changed in respect of the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

Actual and Reasonable in relation to applications to take and use water means:

a) no more than the quantity specified on the permit due for renewal or any lesser amount applied for; and the least of either:

b) the maximum annual amount as measured by accurate water meter data in the ten years preceding 2 May 2020 if accurate water meter data is available. (If insufficient or no accurate data is available either clause a) or c) will apply)

or

c) for irrigation takes, the quantity required to meet the modelled crop water demand for the irrigated area with an efficiency of application of no less than 80% as specified by the IRRICALC water demand model (if it is available for the crop and otherwise with an equivalent method), and to a 95% reliability of supply where the irrigated area is:

(i) no more than in the permit due for renewal, or any lesser amount applied for, and in the case of Heretaunga Plains Groundwater Quantity Area, is not more than the amount irrigated in the ten years preceding 2 May 2020 and

(ii) evidence is supplied to demonstrate that the area has, and can continue to be, irrigated and the permit substantially given effect to

In applying the IRRICALC model, the Council will take into account any water meter data that is applicable.

Allocation limit for surface water means the maximum quantity that is able to be allocated in water permits and abstracted for consumptive water use, expressed in litres per second and calculated as the average rate required to abstract the maximum weekly or 28 day volume allocated to each water permit and summed for all water permits in the applicable management unit

Allocation limit for groundwater means the maximum quantity that is able to be allocated in water permits and abstracted during each year, expressed in cubic metres per year, and is calculated as the sum of maximum water permit allocations for the groundwater zone. Allocations for irrigation will be calculated on the basis of the irrigation period of November- May. The Heretaunga Plains Water Groundwater Quantity Area groundwater allocation limit will be in addition to water taken and used for frost protection which is expressed as an instantaneous take in litres per second and calculated as the sum of water permit allocations.

Allocation limit for high flow takes means the maximum quantity that is able to be allocated and abstracted at times of high flow in water permits expressed in litres per second as an instantaneous flow and calculated as the sum of the instantaneous flow allocations in water permits for a river or management zone including as specified in Schedule 31.

Application Efficiency (AE) means the percentage of applied water that is retained in the crop root zone or in the target area after an irrigation event. To meet good irrigation management practice, 80% of water applied must retained in the crop root zone.

Aquifer testing means taking and using groundwater at a constant rate not exceeding 3 consecutive days in any 28 day period to test attributes and characteristics of an aquifer and/or groundwater. Those characteristics may include transmissivity, storativity and chemical composition. It does not include the taking or use of groundwater where a device is connected to that might result in variability of water flow.

Arable land use is as defined by Part 9 of the RMA.

The use of land to grow any of the following crops for harvest:

(a)grain cereal, legumes, or pulse grain

(b) herbage seed

(c) oilseed

(d) maize grain, maize silage, cereal silage, or mangels

(e) crops grown for seed multiplication

(f) a crop prescribed in regulations made under section 217M(1)(a)

Consumptive water use means any use of fresh water that alters the flows and or levels in a water body on either a temporary or permanent basis, but excludes any non-consumptive use where:

(a) the same amount of water is returned to the same water body at or near the location from which it was taken and
(b) there is no significant delay between the taking and returning of the water.
(c) For the purposes of provisions in this Plan, the term 'consumptive use' does not apply to water used in hydro-electric power generation or water use or diversions which substantially return the water used to the same water body.

Crop rotation means the systematic planting of different crops in sequence over multiple years within the same growing space or across changing land parcels, and often including a pasture phase[180.80, 180.31].

Essential human health needs means the proportion of water supplied to residential and other end users for essential human health needs and will be calculated at a rate of 200 litres per person per day (l/p/d).

Freshwater Farm Plan means a plan that has been prepared in accordance with the requirements of Schedule 29 and which is implemented by a landowner or on behalf of a landowner.

Farm is as defined by Part 9 of the RMA. *A farm where all or part of the farm is—*

(a) *arable land use; or*

(b) *horticultural land use; or*

(c) *pastoral land use; or*

(d) *other agricultural land use prescribed in regulations under section 17M(1)(b); or*

(e) *any combination of the above*

And a farm can include an aggregation of parcels held in single or multiple ownership (whether or not held in common ownership) that constitute a single farming operating unit

Farm Operator is as defined by Part 9 of the RMA *The person with ultimate responsibility for the operation of a farm.*

Flushing Flows mean river flows that are small floods or freshes that have the ability to mobilise fine deposited sediment (sand and silt) from the river bed and are sometimes called surface flushing flows. The movement of this sediment also scours algae from the larger gravels, cobbles and boulders (substrate) leaving a “clean” river bed

Forestry Management Plan means a harvest plan or management plan as provided for in the National Environmental Standards for Plantation Forestry; 2017.

Fre_3 means a flow that is at least three times above the median flow for a river as determined by the Regional Council records.

Hapū (In Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments) means kinship group, section of a large kinship group and the primary political unit in traditional Māori society.

Heretaunga Plains Groundwater Model is a numerical model for the waters of the Heretaunga Plains and meets the requirements for artesian head and stochastic uncertainty analysis as provided for in Schedule 34

Horticultural land use is as defined by Part 9 of the RMA *The use of land to grow food or beverage crops for human consumption (other than arable crops), or flowers for commercial supply.*

Indigenous vegetation for the purposes of rules regulating removal of vegetation, means any area of naturally occurring vegetation where the cover of indigenous plants is the same as or greater than exotic plants but excludes any indigenous vegetation which grows beneath plantation forestry.

Infrastructure Leakage Index is a performance indicator of real (physical) water loss from a water supply network of water distribution developed by the International Water Association and included in the New Zealand BenchlossNZ manual and which outlines performance indicators for NZ.

Insufficient or no accurate water meter data in relation to Actual and Reasonable water use means:

a) where there is no or incomplete water use data for an irrigation season or, for other water uses, a water year, within the ten year period up to 2020 that would otherwise be the year reflecting their maximum annual amount.
b) where there is no or incomplete seasonal water use recorded as a result of water use restrictions or bans being imposed by HBRC or as a result of consent conditions.

Kaitiakitanga; add: “and in Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments is passed down through generations via whakapapa, and iwi/hapū/whānau use obligations”.

Ki uta ki tai – means the movement of water from mountains to sea, through the landscape and the numerous interactions it may have on its journey. Ki uta ki tai acknowledges the connections between the atmosphere, surface water, groundwater, land use, water quality, water quantity, and the coast. It also acknowledges the connections between people and communities, people and the land, and people and water.

Land Use Change means a change from one leaching level to a higher leaching level as shown in Table 1 of Schedule 28 or where the area of intensive winter grazing is changed by more than the amounts specified. Land use change does not include a **Crop Rotation** which is part of vegetable cropping and/or an **Arable Land Use** including with animal grazing [and which does not lead to a higher leaching level as shown in Table 1 OF Schedule 28] ~~where there is arable or vegetable cropping on a rotational basis (including with animal grazing),~~ and including on lease land at variable locations, where the total area of arable or vegetable cropping on that farm does not change by more than the amounts specified.

Mahinga Kai insert: "and in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments mahinga kai generally refers to places where indigenous freshwater species have traditionally been sourced. Mahinga kai provide food for the people of the rohe and the species obtained give an indication of the overall health of the catchment. For this value, kai would be safe to harvest and eat and intergenerational knowledge transfer is maintained. In freshwater management units that are highly valued 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.

Māori means the native people of New Zealand.

Marae A marae is the ground space in front of a traditional whare nui (meeting house) where important speech making takes place and iwi/hapū matters of state are discussed openly. Nowadays it encompasses the whole complex, including the whare nui, whare kai (dining house) and ancillary facilities.

Mātauranga Māori is the indigenous Māori world view and knowledge of the environment in which we live

Mauri Insert: "and in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments mauri refers to the life force that defines the health of the natural world, in this case water. In the Māori world view, all-natural things have mauri, both animate and inanimate. Within freshwater environments, the manifestation of healthy mauri is abundant and healthy water and aquatic resources, including the fish, insects, birds and plants that interact with the water."

Nutrient Management Budget means a calculation that compares plant nutrient demand and supply to assist with appropriate nutrient applications and nutrient management. The budget can be crop specific or at the property scale.

Papakāinga are groups of three or more houses usually developed on multiple owned Māori land.

Pastoral land use is as defined by Part 9 of the RMA *The use of land for the grazing of livestock*.

Registered Drinking Water Supply (or Supplies) means a drinking water supply that ~~is recorded in the drinking water register maintained by the Chief Executive of the Ministry of Health (the Director-General) under section 69J of the Health Act 1956 that~~ provides no fewer than 25 people with drinking water for not less than 60 days in each calendar year and that is registered in accordance with Subpart 7 of the Water Services Act 2021.

River - defined as in the RMA. This will be interpreted to align with the implementation for Tukituki PC and applies to all flowing permanent and intermittent rivers/creeks, lakes and wetlands. An intermittent river or creek is a waterway that periodically flows and has a defined river bed that is predominantly un-vegetated and comprised of silt, sand, gravel and similar.

Source Protection Zone (SPZ) means an area defined and mapped according to Schedule 34 that services no fewer than 500 persons. ~~surrounding the point of take for a registered drinking water supply that provides no fewer than 501 people with drinking water for not less than 60 days in each calendar year where plan provisions apply and includes any provisional Source Protection Zone and is defined by methods specified in Schedule 34 (information about the location of SPZs can be found on the Council's webpage).~~

Source Protection Extent means an area defined according to Schedule 34 that services no fewer than 25 persons and is not defined as a Source Protection Zone. Information about the location of these can be found on the Council's webpage. ~~is an area surrounding the point of take for a registered drinking water supply that provides no less than 25 and no more than 500 people with drinking water for not less than 60 days in each calendar year and includes any Provisional Source Protection Extent and is defined by methods specified in Schedule 34 (information about the location of these areas can be found on the Council's webpage).~~

Stream Depletion Calculator is a publicly available tool that the Hawke's Bay Regional Council has developed to quantify the stream depleting effects of groundwater abstractions in the Heretaunga Plains. The calculator is based on the Heretaunga numerical groundwater model but enables very rapid stream depletion assessments.

TANK Industry Programme or a TANK Catchment Collective is a group of people meeting the requirements of Schedule 29 Section A and which has a Catchment Collective or Industry Programme that has been prepared in accordance with the requirements of Schedule 29 Section B by a person with the professional qualifications necessary to prepare such a Programme.

Waka ama the Pacific outrigger canoeing traditional sport

Consequential Amendments to Chapter 5 of the Regional Resource Management Plan

As a consequence of the new chapters 5.10 and 6.10, amendments have been made to the following parts of Chapter 5 of the operative plan:

Chapter 5.4 Surface Water Quality. The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.5 Surface Water Quantity. The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.6 Groundwater Quality; The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.7 Groundwater Quantity

The amendments listed above are shown in **bold** text with new insertions **underlined** and with deletions shown as ~~**bold strikethrough**~~ over the pages that follow. (Note; Submissions can only be made in respect of the amended text).

Editor's note: Once Plan Change 9 is operative, it will be incorporated into the Regional Resource Management Plan. There will be consequential amendments made at that time to clarify some interim policies no longer apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments. Those interim policies were inserted into the RRMP by earlier versions of the NPSFM. Those earlier NPSFMs had directed amendments to be made without using the RMA's Schedule 1 process.

Surface Water Quality

Insert under heading:

The provisions of Chapter 5.4 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

Table 8. Environmental Guidelines – Surface Water Quality Part II - Guidelines that Apply to Specific Catchments

Catchment Area	Faecal Coliforms (cfu/100 ml)	Suspended Solids (mg/l)
Aropaoanui River	200	50
~~**Clive Rivers and tributaries**~~	~~**200**~~	~~**10**~~
Esk River	200	50
Ikanui Stream	200	50
Kopuawhara Stream	200	50
Mangakuri Stream	200	50
Maraetotara River	200	50
Mohaka River	50	10
~~**Ngaruroro River upstream of Fernhill Bridge**~~	~~**50**~~	~~**10**~~
~~**Ngaruroro River between Fernhill Bridge and Expressway Bridge**~~	~~**100**~~	~~**25**~~
~~**Ngaruroro River downstream of the Expressway Bridge**~~	~~**150**~~	~~**25**~~
Opoutama Stream	200	50
Porangahau River	200	50
Puhokio Stream	200	50
Taharua Stream	50	10
~~**Tūtaekurī River upstream of Redclyffe Bridge**~~	~~**50**~~	~~**10**~~
~~**Tūtaekurī River between Redclyffe Bridge and SH50**~~	~~**100**~~	~~**25**~~
~~**Tūtaekurī River downstream of the Expressway Bridge**~~	~~**150**~~	~~**25**~~
Waingonoro Stream	200	50
Waipatiki Stream	200	50
Waipuka Stream	200	50
Wairoa River and tributaries upstream of Frasertown	100	25
Wairoa River at and downstream of Frasertown	200	25

These guidelines apply after reasonable mixing and disregarding the effect of any natural perturbations that may affect the water body, as set out in Policy 72.

* The figures in Table 8 represent concentrations of contaminants in the water body that should not be exceeded after reasonable mixing.

Surface Water Quantity

Insert under heading:

The provisions of Chapter 5.5 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

POL 74 IMPLEMENTATION OF ENVIRONMENTAL GUIDELINES - SURFACE WATER QUANTITY

Resource Allocation: To define the allocatable volume as being the difference between the summer 7- day Q95 and the minimum flow.

To implement the environmental guidelines for surface water quantity predominantly in the process of making decisions on **resource consents** in accordance with section 104 (1)(b) of the RMA, through Table 9.

Table 9. Minimum Flow and Allocatable Volumes for Specified Rivers

River name	Minimum Flow Site Name	Minimum Flow (l/s)	Allocatable Volume (m^3/week)	Map Reference
~~Awanui Stream~~	~~At The Flume~~	~~120~~	~~0~~	~~V21:357613~~
~~Awanui Stream~~	~~At Paki Paki Culvert~~	~~35~~	~~0~~	~~V21:351608~~
Esk River	At Shingle Works	1,400	355,018	V20:432945
Esk River	At SH2	1,000		V20:438939
~~Irongate Stream~~	~~At Clarks Weir~~	~~100~~	~~0~~	~~V21:367666~~
~~Karamū River~~	~~At Floodgates~~	~~1,100~~	~~18,023~~	~~V21:427708~~
~~Karewarewa River~~	~~At Turamoe Road~~	~~75~~	~~-~~	~~V21:341622~~
~~Louisa Stream~~	~~At Te Aute Road~~	~~30~~	~~0~~	~~V21:410625~~
~~Mangateretere Stream~~	~~At Napier Road~~	~~100~~	~~0~~	~~V21:438659~~
~~Maraekakaho River~~	~~At Taits Road~~	~~100~~	~~5,443~~	~~V21:170668~~
~~Maraetotara River~~	~~At Te Awanga Bridge~~	~~220~~	~~30,971~~	~~W21:520661~~
~~Ngaruroro River~~	~~At Fernhill Bridge~~	~~2,400~~	~~956,189~~	~~V21:330729~~
Nuhaka River	At Valley Road	80	41,731	X19:225329
~~Ongaru Drain~~	~~Wenley Road~~	~~5~~	~~0~~	~~V21:234653~~
Pouhokio Stream	At Allens Bridge	80	-	V22:498441
~~Poukawa Inflow~~	~~Site No. 1 (d/s dam)~~	~~10~~	~~0~~	~~V22:282504~~
~~Poukawa Inflow~~	~~Site No. 1a (u/s dam)~~	~~10~~	~~0~~	~~V22:285502~~
~~Poukawa Inflow~~	~~Site No. 6~~	~~3~~	~~0~~	~~V22:266478~~
~~Poukawa Stream~~	~~At Douglas Road~~	~~20~~	~~0~~	~~V22:298533~~
~~Raupare Stream~~	~~At Ormond Road~~	~~300~~	~~83,844~~	~~V21:398713~~
Te Waikaha Stream	At Mutiny Road	25	-	V22:361572
Trib. of Kauhauroa Stream	(Taylors)	5	0	X19:970397
~~Tūtaekurī River~~	~~At Puketapu~~	~~2,000~~	~~928,972~~	~~V21:357812~~
~~Tūtaekurī-Waimate~~	~~At Goods Bridge~~	~~1,200~~	~~367,114~~	~~V21:384751~~
Waimaunu Stream	At Duncans	10	15,304	X19:229300

Groundwater Quality

Insert after Heading:

The provisions of Chapter 5.6 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

OBJECTIVES

OBJ 42 No degradation of existing groundwater quality in aquifers ~~**in the Heretaunga Plains aquifer system.**~~

POLICIES

POL 75 ENVIRONMENTAL GUIDELINES - GROUNDWATER QUALITY

1. Other than in the productive aquifer systems in the Tukituki River catchment **and the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments**, to manage the effects of activities affecting the quality of groundwater in accordance with the environmental guidelines set out in Table 10.

Table 10. Environmental Guidelines – Groundwater Quality

~~**CONFINED, PRODUCTIVE AQUIFERS IN THE HERETAUNGA PLAINS AQUIFER SYSTEM (as shown in Schedule IV)**~~	
~~**1. No degradation**~~	~~There should be no degradation of existing water quality.~~
~~OTHER~~ PRODUCTIVE AQUIFERS	
1. Human consumption	The quality of groundwater should meet the "Drinking Water Quality Standards for New Zealand" (Ministry of Health, 1995) without treatment, or after treatment where this is necessary because of the natural water quality.
2. Irrigation	The quality of groundwater should meet the guidelines for irrigation water contained in the "Australian Water Quality Guidelines for Fresh and Marine Waters" (Australian and New Zealand Environment and Conservation Council, 1998) without treatment, or after filtration where this is necessary because of the natural water quality.

.

Groundwater Quantity

Insert after the heading:

The provisions of Chapter 5.7 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

Consequential Amendments to Chapter 7 of the Regional Resource Management Plan

As a consequence of the new chapters 5.10 and 6.10, amendments have been made to the following parts of Chapter 7 Information Requirements for Consent Applications of the operative plan: Chapter 7.7 Water Takes, Uses, Damming & Diversions.

The amendments are shown in **bold** text with new insertions underlined and with deletions shown as ~~strikethrough~~.

Section 7.7.1 Take and Use of Groundwater

TAKE AND USE OF GROUNDWATER

Refer to Rule 55 and Rules TANK 8 to 11

a) Location of the take.
b) Purpose for which water is to be taken.
c) Where water is to be taken for crop irrigation, a description of:
    i. type of crop to be irrigated
    ii. area of crop to be irrigated
    iii. method of irrigation, including scheduling.
d) Maximum volume of water to be taken.
e) Rate at which water is to be taken.
f) Description of bore(s) from which water is to be taken.
g) Results of any pump tests carried out.
h) Description of any water conservation measures.
i) The identity and location of neighbouring abstractors likely to be affected.
j) Description of likely detrimental effects of the activity, particularly on nearby bores, springs and surface water bodies, and any action proposed to reduce such effects.
k) The details of any bore including diameter, depth, screen location, static water level and bore log.
l) Where an application is made in respect of water takes in TANK quantity areas that are over-allocated, including in the Heretaunga Plains groundwater quantity area, information may be required to support increases in water use at rates or amounts greater than historic levels of water use as defined by Actual and Reasonable use, including:
    i. Details of the existing investment that would be affected by capping water use to historic levels.
    ii. evidence of programmed future development or staged growth that was dependent on access to increasing water use available.
    iii. the degree to which the water use complies with industry good practice in relation to the water use activity, including adoption of technology, production systems and efficient water use.
    iv. the degree to which the amount of water being applied for was depended on in making investment decisions.

Insert in section 7.7.2 Take and Use of Surface Water:

TAKE AND USE OF SURFACE WATER

Refer to Rule 55 ***and Rules TANK 9, 10 and 13***

a. Purpose for which water is to be taken.
b. Where water is to be taken for crop irrigation, a description of:
   i. type of crop to be irrigated
   ii. area of crop to be irrigated
   iii. method of irrigation, including scheduling.
c. Maximum volume of water to be taken.
d. Rate at which water is to be taken.
e. Source of water, and description of water resource.
f. Intake screening and associated structure.
g. Description of any water conservation measures.
h. The identity and location of other abstractors within the vicinity.
i. Description of likely detrimental effects of the activity, particularly on the natural character of the surface water body, the quantity or flow of water in the water body, downstream users, aquatic ecosystems, and ground water bodies, together with any action proposed to reduce such effects.
j. Where an application is made in respect of water takes in TANK quantity areas that are over-allocated, including in the Heretaunga Plains groundwater quantity area, information may be required to support increases in water use at rates or amounts greater than historic levels of water use as defined by Actual and Reasonable use, including:
   i. Details of the existing investment that would be affected by capping water use to historic levels.
   ii. evidence of programmed future development or staged growth that was dependent on access to increasing water use available
   iii. the degree to which the water use complies with industry good practice in relation to the water use activity, including adoption of technology, production systems and efficient water use
   iv. the degree to which the amount of water being applied for was depended on in making investment decisions.
   v. **decisions.**

Schedule 26: Freshwater Quality Objectives

Schedule 26 is re-presented to align with the NOF framework in the NPS-FM.

Introduction to Schedule 26 Freshwater Quality Objectives

For water quality management, the TANK catchments have been divided into 5 separate areas:

Tūtaekurī Catchment
Ahuriri Catchment
Ngaruroro Catchment
Karamū Catchment
Ahuriri Estuary / Te Whanganui-a-Orotū and Waitangi Estuary

Maps

Refer to Schedule 26 Map Index and Schedule 26 Maps 1 - 5.

Baseline data

Baseline data in Schedule has been obtained from the reports listed below unless otherwise specified in the Schedules:

Haidekker, S., Uytendaal, A., Hicks, A., Wade, Wade, H., Lyon, Madarasz-Smith, A.L., 2016. Ngaruroro, Tūtaekurī, Karamū River and Ahuriri Estuary Catchments: State and Trends of River Water Quality and Ecology (No. 4787). Hawke's Bay Regional Council, Napier.

Haidekker, S. (2021) Unpublished data.

Madarasz-Smith, A., Shanahan, B., 2020. State of the Hawke's Bay Coastal Marine Environment: 2013 to 2018 (No. 5425). Hawke's Bay Regional Council, Napier.

Madarasz-Smith, A.L., 2018. Proposed trigger levels for TANK estuaries Waitangi and Ahuriri Estuaries (No. 5027). Hawke's Bay Regional Council, Napier.

Madarasz-Smith, A.L., Shanahan, B., Ellmers, J., 2019. Recreational Water Quality in Hawke's Bay State of the Environment: 2013 - 2018 (No. 5403). Hawke's Bay Regional Council, Napier.

Schedules 26.1 – 26.5

Insert Schedules as follows:

SCHEDULE 26.1: TŪTAEKURĪ CATCHMENT

Refer to Schedule 26 Map 1

Vision
<to be drafted through Kotahi Review process>

Outcomes
This sits in the body of the plan. Refer to TANK Objectives 9 and 11

TABLE 26.1.1a: Ecosystem Health (Water quality)

	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Headwaters (Upper Tūtaekurī)	Lawrence Hut	0.016	Maintain	Maintain	* This attribute measures the trophic state as it relates to algal growth **Blue:** (≤ 0.05) **Green**: (≤ 0.05 and < 0.15) **Yellow**: (≤ 0.15 and < 0.3) **Red:** (> 0.3) **Light Green:** (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning.	Algal growth	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			All other locations	No/Insufficient data	< 0.05	< 0.05			
		Main stem (Lower Tūtaekurī)	u/s Mangaone River	0.182	<0.15	<0.15			• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Estuary ecosystem health • Recreation • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Brookfields Bridge / Puketapu	0.172	<0.15	<0.15			
			All other locations	No/Insufficient data	<0.15	<0.15			
		Hill country tributaries	Mangatutu Stream	0.45	<0.444	<0.444			• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			Mangaone River (Rissington)	0.326	<0.444	<0.444			
			All other locations	No/Insufficient data	<0.444	<0.444			
Ammonia (mg NH_4-N/L) NOF Table 5	Annual median Annual max Unionised ammonia based on pH at 20°C All flows	Headwaters	Lawrence Hut	Med 0.002 A Max 0.006 A	Maintain	Maintain	* This attribute measures the toxic effects of ammonia, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested. **B band** (green)**:** (Median > 0.03 and ≤ 0.24; Max >0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species. **C band:** (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species). D band (purple, below national bottom line): (Median > 1.30;	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			All other locations	No/Insufficient data	Median ≤ 0.03 Max ≤ 0.05	Median ≤ 0.03 Max ≤ 0.05			
		Main stem	u/s Mangaone River	Med 0.007 A Max 0.017 A	Maintain	Maintain			
			Brookfields Bridge /	Med 0.012 A					
			Puketapu	Max 0.024 A					

	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A	Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species		
					Max ≤ 0.05 A	Max ≤ 0.05 A			
		Hill country tributaries	Mangatutu Stream	Med 0.005 A	Maintain	Maintain			
				Max 0.043 A					
			Mangaone River (Rissington)	Med 0.006 A					
				Max 0.04 A					
			All other locations	No/Insufficient data	No/Insufficient data	Median ≤ 0.03 A			
						Max ≤ 0.05 A			
Nitrate (mg NO_3-N/L) NOF Table 6	1. Annual median 2. Annual 95th percentile Hazen method All flows	Headwaters	Lawrence Hut	Med 0.008 A	Maintain	Maintain	*This attribute measures the toxic effects of nitrate, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 1.0; 95th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. **B band** (green)**:** (Median > 1.0 and ≤ 2.4; 95th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. **C band:** (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. **D band** (purple, below national bottom line) (Median > 6.9; 95th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				95th percentile 0.025 A					
			All other locations	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
		Main stem	u/s Mangaone River	Med 0.18 A	Maintain	Maintain			
				95th percentile 0.397 A					
			Brookfields Bridge / Puketapu	Med 0.21 A					
				95th percentile 0.536 A					
			All other locations	No/Insufficien t data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
		Hill country tributaries	Mangatutu Stream	Med 0.4 A	Maintain	Maintain			
				95th percentile 0.848 A					
			Mangaone River (Rissington)	Med 0.34 A					
				95th percentile 0.767 A					
			All other locations	No/Insufficie nt data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DRP (mg/L) NOF Table 20	1. Median 2. 95th percentile All flows	Headwaters	Lawrence Hut	Med 0.004 A	Maintain	Maintain	**A band** (blue): (Median ≤ 0.006; 95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected. **B band** (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates. **C band** (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay. **D band** (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.	Algal growth	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses
				95th percentile 0.006 A					
			All other locations	No/Insufficient data	Median ≤ 0.006 A 95th percentile ≤ 0.21 A	Median ≤ 0.006 A 95th percentile ≤ 0.21 A			
		Main stem	u/s Mangaone River	Med 0.014 C	Med ≤ 0.01 B	Med ≤ 0.01 B			
				95th percentile 0.02 B	Maintain	Maintain			
			Brookfields Bridge / Puketapu	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95th percentile 0.031 C	95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
			All other locations	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			

					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
		Hill country tributaries	Mangatutu Stream	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95th percentile 0.023 B	Maintain	Maintain			
			Mangaone River (Rissington)	Med 0.026 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95th percentile 0.036 C	95thpercentile ≤ 0.03 B	95thpercentile ≤ 0.03 B			
			All other locations	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
Suspended fine sediment Visual clarity (m) NOF Table 8	**Trout fishery**: Visual clarity Median Below median flow **NOF**: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)	Headwaters	Lawrence Hut (Class 1)	7.6	Maintain	Maintain	**Trout fishery:** **Bright blue** ≥ 5 meets outstanding trout fishery values. **Light green** ≥ 3.75 and < 5 meets significant trout fishery. **Russet** <3.75 does not meet significant trout fishery values. **NOF Attribute** <*Kotahi Review*> **A band** (Class 1 ≥ 1.78; Class 2 ≥ 0.93)	Trout fishery - outstanding	• Recreation • Mauri • Natural character • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Amenity natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				6.9 *A*	<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	No/Insufficient data	≥ 5	≥ 5			
					<*Kotahi Review*>	<*Kotahi Review*>			
		Main stem	u/s Mangaone River (Class 1)	3.4	Improving trend	≥ 3.75		Trout fishery - significant	
				2.54 *A*	<*Kotahi Review*>	<*Kotahi Review*>			
			Brookfields Bridge / Puketapu	3.35	Improving trend	≥ 3.75	Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. **B band** (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. **C band** (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. **D band** (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or		

							at risk of being lost.		
				2 *A*	*<Kotahi Review>*	*<Kotahi Review>*			
			All other locations	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	*<Kotahi Review>*			
		Hill country tributaries	Mangatutu Stream (Class 1)	1.85	Improving trend	≥ 3.75			
				1.5 *C*	≥ *1.78* *A*	≥ *1.78* *A*			
			Mangaone River (Rissington) (Class 2)	2.3	Improving trend	≥ 3.75			
				2.15 *A*	*<Kotahi Review>*	*<Kotahi Review>*			
			All other locations	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	*<Kotahi Review>*			
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels			
Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Headwaters		No/Insufficient data	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	**A band** (blue)**:** (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species. **C band** (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. **D band** (red, (below national bottom line) (7-day mean minimum < 5; 1-day min< 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.	Ecosystem health	• Wai Māori • Natural character • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data					
		Hill country tributaries		No/Insufficient data					
Ţemperature (°C) 5-day CRI	Cox-Rutherford-Index Continuous measurement Hottest 5 consecutive days All flows	Headwaters		No/Insufficient data	*<Kotahi Review>*	≤ 1^0 C increment from reference state A	**A band** (blue)**:** (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (≤ 2°C increment compared to reference site) Minor		• Wai Māori • Mauri • Kaitiakitanga • Whakapapa, taonga/tohu species, ahumoana, ahuwhenua, mahinga kai • Natural character • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data	*<Kotahi Review>*	≤ 2^0 C increment from reference state B			

		Hill country tributaries		No/Insufficient data	*<Kotahi Review>*	≤ 2^0 C increment from reference state B	thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. **C band** (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. **D band** (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.		
		Lowland tributaries		No/Insufficient data	*<Kotahi Review>*	≤ 2^0 C increment from reference state B			• Wai Māori • Mauri • Kaitiakitanga • Whakapapa, taonga/tohu species, ahumoana, ahuwhenua, mahinga kai • Natural character • Indigenous biodiversity
pH	At all times, 95th percentile				*<Kotahi Review>*	*<Kotahi Review>*			
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected. ANZECC guidelines	Ecosystem health	
BOD ($ScBOD_5$)	Below median flow		Consent related		<2 mg/L	<2 mg/L	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	
Ecosystem Metabolism ($gO_2m^{-2}d^{-1}$) NOF Table 21	7-day min (Dec-Mar) Young *et al*. method				*<Kotahi Review>*	*<Kotahi Review>*			

TABLE 26.1.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish	**Index of Biotic Integrity** (F-IBI) **or alternative HBRC approved method**	Headwaters ('Upper catchments')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel	A - High integrity of fish community. Habitat and migratory access have minimal degradation B - Moderate integrity of fish community. Habitat and/or migratory access are reduced and show some signs of stress C - Low integrity of fish community. Habitat and/or migratory access is considerably impairing and stressing the community. D - Severe loss of fish community integrity. There is substantial loss of habitat and/or migratory access, causing a high level of stress on the community.		
		Main stem ('Mid-low main stems')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Hill country tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Lowland tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
Macroinvertebrates MCI QMCI NOF Table 14	1. MCI Macroinvertebrate Community Index Average Below median flow	Headwaters	Lawrence Hut	MCI 129 B	MCI ≥ 130 A	MCI ≥ 130 A	**A band** (blue)**:** (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
				QMCI 6.7 A	Maintain	Maintain			
				ASPM 0.64 A	Maintain	Maintain			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
ASPM NOF Table 15	QMCI Quantitative Macroinverte-brate Community Index ASPM Macroinverte-brate average score per metric		All other locations	No/Insufficient data	MCI ≥ 130	MCI ≥ 130	conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions. **B band** (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity. **C band** (orange)**:** (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity. **D band** (red): (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.		• Trout
					QMCI ≥ 6.5	QMCI ≥ 6.5			
					ASPM ≥ 0.6	ASPM ≥ 0.6			
		Main stem	u/s Mangaone River	MCI 104 C	Improving trend	MCI ≥ 110 B			
				QMCI 4.9 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.39 C	Improving trend	ASPM ≥ 0.4 B			
			Brookfields Bridge / Puketapu	MCI 93 C	Improving trend	MCI ≥ 110 B			
				QMCI 4.8 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.30 C	Improving trend	ASPM ≥ 0.4 B			
			All other locations	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
		Hil country tributaries	Mangatutu River	MCI 120 B	Maintain	Maintain			
				QMCI 5.2 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.42 B	Maintain	Maintain			
			Mangaone River (Rissington)	MCI 116 B	Maintain	Maintain			
				QMCI 6 B	Maintain	Maintain			
				ASPM 0.55 B	Maintain	Maintain			
			All other locations	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
Nuisance Macrophyte CAV (max % CAV (Cross-sectional area/volume))[1]	Monthly All year observations	Lowland tributaries		No/Insufficient data	≤ 50 %	≤ 50 %	**Light green** ≤ 50 % maintains ecological condition / flow conveyance / recreation values. **Russet** > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga waka • Natural character • Indigenous biodiversity Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

Periphyton[2] (Trophic state) (mg Chl-*a*/m^2) NOF Table 2	Max 8% exceedance over 3 years monthly observations	Main stem	Puketapu	B	*<Kotahi Review>*	Maintain	**A band:** (≤ 50 less than 8%) Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. **B band**: (Exceeds >50 and ≤ 120 less than 8%) Occasional blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. **C band:** (Exceeds >120 and ≤ 200 less than 8%). Periodic short -duration nuisance blooms reflecting moderate enrichment and/or moderate alteration of the natural flow regime or habitat **D band:** (exceeds national bottom line) (> 200 less than 8%) Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat	Ecosystem health	
Periphyton cover (median of annual max %PeriWCC)	Monthly observations All year 3 years monthly observations	Headwaters	Lawrence Hut	12 (2012-15)	Maintain	Maintain	**Blue**: (≤ 20) Ecological condition excellent and maintains recreation/aesthetics values. **Green**: (> 20 and ≤ 30) Ecological condition good and maintains recreation/aesthetics values. **Yellow**: (> 30 and ≤ 40) Ecological condition good and doesn't meet recreation/aesthetics values. **Orange**: (> 40 and ≤ 55) Ecological condition fair and doesn't meet recreation/aesthetics values. **Red**: (> 55) Ecological condition poor and doesn't meet recreation/aesthetics values.	Ecosystem health	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū • Natural character • Indigenous biodiversity • Abstractive uses including stock drinking
			All other locations	No/Insufficient data	≤ 20	≤ 20			
		Main stem	u/s Mangaone River	28 (2012-15)	Maintain	Maintain			
			Brookfields Bridge / Puketapu	34 (2012-15)	Improving trend	≤ 30			
			All other locations	No/Insufficient data	≤ 30	≤ 30			
		Upland tributaries	Mangatutu Stream	14 (2012-15)	Maintain	Maintain			
			Mangaone River (Rissington)	1.7 (2012-15)	Maintain	Maintain			
			All other locations	No/Insufficient data	≤ 30	≤ 30			

TABLE 26.1.1c: Ecosystem Health (Physical habitat)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Physical habitat	Rapid habitat assessment or alternative HBRC approved method				Maintain or improve where degraded	Maintain or improve where degraded			
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years 95th percentile	Headwaters		No/Insufficient data	<20%	<20%	**Light green** < 20% protects stream biodiversity and fish (native and trout) habitat. **Russet:** ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.	Biodiversity	• Uu • Waimaori • Mauri • Natural character • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori land, marae/hapū, indigenous biodiversity
		Main stem		No/Insufficient data	<20%	<20%			
		Hill country tributaries		No/Insufficient data	<20%	<20%			
Deposited fine sediment (%) NOF Table 16	% fine sediment cover Median Monthly samples Minimum 5 years				*<Kotahi Review>*				

TABLE 26.1.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Cyanobacteria[1] (benthic cover %)	Monthly observations, All year	All hard bottomed streams	As required	No/Insufficient data	< 20%[1]	< 20%[1]	**Light Green** < 20% benthic cover **Orange** ≥ 20% and <50% benthic cover **Red** >50% benthic cover	Recreation	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū, • Natural character • Abstractive uses including stock drinking
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Overall band determined over 4 numeric attribute states – details see NOF Table 9	Headwaters	Lawrence Hut	A	Maintain	Maintain	**A band (Blue)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. **B band (Green)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. **C band (Yellow)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			All other locations	No/Insufficient data	A	A			
		Main stem	u/s Mangaone River	B	Maintain	Maintain			
			Brookfields Bridge / Puketapu	B	Maintain	Maintain			
			All other locations	No/Insufficient data	B	B	**D band (Orange)** 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%.		
		Hill country tributaries	Mangatutu Stream	D	B	B	**E band (Red)** For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.		
			Mangaone River (Rissington)	D	B	B			
			All other locations	No/Insufficient data	B	B			
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 22	95th percentile of *E.coli per 100 mL*	Lowland	Tūtaekurī River at Guppy Road	308 Fair	*<Kotahi Review>*		**Excellent** < 130 Estimated risk of *Campylobacter* infection has a <0.1% occurrence, 95% of the time. **Good** >130 and < 260 Estimated risk of *Campylobacter* infection has a 0.1 – 10% occurrence, 95% of the time. **Fair** >260 and < 540 Estimated risk of *Campylobacter* infection has a 1 - 5% occurrence, 95% of the time. **Poor** >540 (below national bottom line) Estimated risk of *Campylobacter* infection has a >5% occurrence, 95% of the time.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

Note 1 The target attribute state for cyanobacteria is applicable only in relation to Policy 16 and any exceedance triggers an alert level response by Council ((from the MfE Alert-level Framework: NZ Guidelines for cyanobacteria in recreational freshwaters.)

TABLE 26.1.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO_3 /l)	95th percentile 5 years	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes: The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality.									

TABLE 26.1.4: Threatened Species
<Insert through Kotahi process>

TABLE 26.1.5: Mahinga Kai
<Insert through Kotahi process>

TABLE 26.1.6: Mātauranga Māori
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TABLE 26.1.7: Wetlands and Lakes
<Insert through Kotahi process>

SCHEDULE 26.2: AHURIRI CATCHMENT

Refer to Schedule 26 Map 2

Vision
<to be drafted through Kotahi Review process>

Outcomes
This sits in the body of the plan. Refer to TANK Objectives 7 and 11

TABLE 26.2.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Lowland	Taipo Stream	0.356	Maintain	Maintain	* This attribute measures the trophic state as it relates to algal growth Light Green: (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning. Orange: (> 0.444) Above ANZECC default guideline value, investigation/ management recommended.	Estuary ecosystem health (Algal growth where present)*	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Recreation • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production, industrial and commercial use
			Wharerangi Stream	No/Insufficient data	≤ 0.444	≤ 0.444			
			All other locations	No/Insufficient data	≤ 0.444	≤ 0.444			
Ammonia (mg NH_4-N/L) NOF Table 5	Annual median Annual max Unionised ammonia at a pH of 8 and temperature of 20°C All flows	Lowland	Taipo Stream	Median 0.016 A	Maintain	Maintain	* This attribute measures the toxic effects of ammonia, not the trophic state (as covered for DIN above) **A band (blue):** (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested. **B band (green):** (Median > 0.03 and ≤ 0.24; Max >0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species. **C band: (red, below national bottom line):** (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species). **D band (purple, below national bottom line):** (Median > 1.30; Max > 2.20)	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				Max 0.119 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
			Wharerangi Stream	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
Nitrate (mg NO_3-N/L) NOF Table 6	Annual median Annual 95th percentile Hazen method All flows	Lowland	Taipo Stream	Median 0.131 A	Maintain	Maintain	*This attribute measures the toxic effects of nitrate, not the trophic state (as covered for DIN above) **A band (blue):** (Median ≤ 1.0; 95th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. **B band (green):** (Median > 1.0 and ≤ 2.4; 95th percentile > 1.5 and ≤ 3.5)	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				95th percentile 0.66 A	Maintain	Maintain			
			Wharerangi Stream	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			

*Lowland streams generally have soft sediment and macrophytes, lacking hard substrate for algae to grow; the critical value is estuary ecosystem health. For areas where algal growth is supported through hard substrate, DIN concentration has an effect on algal growth and is the critical value.

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A	95% species protection; some growth effects on up to 5% of species. **C band: (red, below national bottom line)** (Median > 2.4 and ≤ 6.9; 95th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. **D band (purple, below national bottom line)** (Median > 6.9; 95th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).		
			All other locations	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Lowland	Taipo Stream	Median 0.25 D	Improving trend	Median ≤ 0.018 C	**A band** (blue): (Median ≤ 0.006; 95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected. **B band** (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates. **C band** (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay. **D band** (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.	Ecosystem health	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
				95th percentile 0.59		95th percentile ≤ 0.054 C			
			Whareranga Stream	No/Insufficient data	Improving trend	Median ≤ 0.018 C			
						95th percentile ≤ 0.054 C			
			All other locations	No/Insufficient data	Maintain or improving trend	Median ≤ 0.018 C			
						95th percentile ≤ 0.054 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Suspended fine sediment Visual clarity (m) NOF Table 8	**Recreation/ aesthetics** Visual clarity Median Monthly samples Minimum 5 years **NOF**: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)	Lowland	Taipo Stream (class 2)	0.40	Improving trend	> 1.6	**Recreation /Aesthetics Very Light Green**: > 1.6 meets recreation/aesthetics values. **Light Russet** ≤ 1.6 doesn't meet recreation/aesthetics values. **NOF Attribute** <*Kotahi Review*> **A band** (Class 1 ≥ 1.78; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. **B band** (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. **C band** (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. **D band** (below national bottom line). (Class 1: < 1.34; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.	Recreation/ Aesthetics	• Recreation • Mauri • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Amenity natural character Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				0.40 D	*<Kotahi Review>*	*<Kotahi Review>*			
			Wharerangi Stream (class 2)	No/Insufficient data	> 1.6	> 1.6			
					<Kotahi Review>	*<Kotahi Review>*			
			All other locations	No/Insufficient data	> 1.6	> 1.6			
					<Kotahi Review>	*<Kotahi Review>*			
Deposited fine sediment (%) NOF Table 16	Median % fine sediment cover Monthly samples Minimum 5 years				*<Kotahi review>*				

TABLE 26.2.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish	**Index of Biotic Integrity** (F-IBI) **or alternative HBRC approved method**	Headwaters ('Upper catchments')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel	A - High integrity of fish community. Habitat and migratory access have minimal degradation B - Moderate integrity of fish community. Habitat and/or migratory access are reduced and show some signs of stress C - Low integrity of fish community. Habitat and/or migratory access is considerably impairing and stressing the community. D - Severe loss of fish community integrity. There is substantial loss of habitat and/or migratory access, causing a high level of stress on the community.		
		Main stem ['Mid-low main stems']	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Hill country tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Lowland tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
Macroinvertebrates MCI QMCI NOF Table 14 ASPM NOF Table 15	1. MCI (sb-MCI where relevant) Macroinverte-brate Community Index Average Below median flow 2. QMCI (sb-QMCI	Lowland	Taipo Stream	MCI 57.2 D	Improving trend	MCI > 90 C	**A band** (blue)**:** (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
				QMCI 1.8 D	Improving trend	QMCI > 4.5 C			

	where relevant) Quantitative Macroinverte-brate Community Index 3. ASPM Macroinverte-brate average score per metric			ASPM 0.1 D	Improving trend	ASPM > 0.3 C	**B band** (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity. **C band** (orange): (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to- severe loss of ecological integrity. **D band** (red, (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.		
			Whareranga Stream	No/Insuffic ient data	Maintain or improve	MCI > 90 C			
						QMCI > 4.5 C			
						ASPM > 0.3 C			
			All other locations	No/Insuffic ient data	Maintain or improve	MCI > 90 C			
						QMCI > 4.5 C			
						ASPM > 0.3 C			
Nuisance Macrophyte CAV (max % CAV (Cross-sectional area/volume))	Monthly All year observations	Lowland	Taipo Stream	No/Insufficient data	≤ 50 %	≤ 50 %	**Light Green** ≤ 50 % maintains ecological condition / flow conveyance / recreation values. **Russet** > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Whareranga Stream	No/Insufficient data	≤ 50 %	≤ 50 %			
			All other locations	No/Insufficient data	≤ 50 %	≤ 50 %			

TABLE 26.2.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Lowland	Taipo Stream	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B	**A band** (blue): (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species. **C band** (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. **D band** (red, below national bottom line) (7-day mean minimum < 5; 1-day min< 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity
			Whareranga Stream	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B			
			All other locations	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B			
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels	No increased risk from point source.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity
BOD ($ScBOD_5$)	Below median flow		Consent related		<2 mg/L	<2 mg/L	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	
Ecosystem Metabolism ($gO_2m^{-2}d^{-1}$) NOF Table 21	7-day min (Dec-Mar) Young et al method	Lowland			*<Kotahi review>*	*<Kotahi review>*			
Temperature (˚C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Lowland		No/Insufficient data	*<Kotahi review>*	≤ 2° C increment from reference state B	**A band** (blue): (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. **C band** (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. **D band** (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Indigenous biodiversity • Natural character

							species with loss of ecological integrity.		
pH	At all times, 95th percentile				*<Kotahi Review>*	*<Kotahi Review>*			
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected. ANZECC guidelines	Ecosystem health	

TABLE 26.2.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Refer to NOF Table 9 for a description of how to measure the 4 metrics for this attribute	Lowland	Taipo Stream	E	C	C	A band (Blue) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. B band (Green) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. C band (Yellow) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. D band (Orange) 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. E band (Red) For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere, ahu moana, ahuwhenua mahinga kai, nohoanga, cultural • practices, tauranga waka, Māori land, marae/hapū connections, • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Whareangi Stream	No/Insufficient data	C	C			
			All other locations	No/Insufficient data	C	C			

TABLE 26.2.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO_3 /l)	95th percentile 5 years	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	<!	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	

Notes:
The attributes are as measured in groundwater at 10m below ground level.
Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality.

TABLE 26.2.3: Threatened Species
<Insert through Kotahi process>

TABLE 26.2.4: Mahinga Kai
<Insert through Kotahi process>

TABLE 26.2.5: Mātauranga Māori
<Insert through Kotahi process>

TABLE 26.2.6: Wetlands and Lakes
<Insert through Kotahi process>

SCHEDULE 26.3: NGARURORO CATCHMENT

Refer to Schedule 26 Map 3

Vision
<to be drafted through Kotahi Review process>

Outcomes
This sits in the body of the Plan. Refer to TANK Objectives 8 and 11

TABLE 26.3.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Headwaters (Upper Ngarururoro)	Kuripapango	0.01	Maintain	Maintain	* This attribute measures the trophic state as it relates to algal growth **Blue:** (≤ 0.05) **Green**: (≤ 0.05 and < 0.15) **Yellow**: (≤ 0.15 and < 0.3) **Red:** (> 0.3) **Light green:** (≤ 0.444) Below ANZECC lowland guideline value, unlikely to be concerning.	Algal growth	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			Whanawhana	0.027	Maintain	Maintain			
			All other locations	No/Insufficient data	< 0.05	< 0.05			
		Main stem (Lower Ngarururo)	d/s HB Dairies	0.086	Maintain	Maintain			• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Estuary ecosystem health • Natural character • Recreation • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Fernhill	0.106	Maintain	Maintain			
			Chesterhope	0.08	Maintain	Maintain			
			All other locations	No/Insufficient data	< 0.15	< 0.15			
		Hill country tributaries	Ohara Stream	No/Insufficient data	0.444	0.444			• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Estuary ecosystem health • Recreation • Natural character • Abstractive uses • Drinking water
			Poporangi Stream	0.548	0.444	0.444			
			Maraekakaho Stream	0.231	Maintain	Maintain			
			All other locations	No/Insufficient data	<0.444	<0.444			
		Lowland tributaries	Waitio Stream	0.219	Maintain	Maintain	**Light green:** (≤ 0.444) Below ANZECC lowland guideline value, unlikely to be concerning. **Orange:** (> 0.444) Above ANZECC lowland guideline value, investigation/ management recommended.	Estuary ecosystem health	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Recreation • Aquifer recharge • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production, industrial and commercial use
			Ohiwia Stream	0.468	≤ 0.444	≤ 0.444			
			Tūtaekurī-Waimate Stream	0.243	Maintain	Maintain			
			All other locations	No/Insufficient data	≤ 0.444	≤ 0.444			
Ammonia (mg NH_4-N/L) NOF Table 5	1. Annual median 2. Annual max Unionised ammonia based on pH at 20°C All flows	Headwaters	Kuripapango	Median 0.0025 A	Maintain	Maintain	* This attribute measures the toxic effects of ammonia, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested. **B band** (green)**:** (Median > 0.03 and ≤ 0.24; Max >0.05 and ≤ 0.40)	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				Max 0.005 A					
			Whanawhana	Median 0.002 A					
				Max 0.01 A					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A	95% species protection; starts impacting occasionally on the 5% most sensitive species. **C band:** (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species). **D band** (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.		
					Max ≤ 0.05 A	Max ≤ 0.05 A			
		Main stem	d/s HB Dairies	Median 0.002 A	Maintain	Maintain			
				Max 0.17 A					
			Fernhill	0.003 A					
				Max 0.036 A					
			Chesterhope	Median 0.004 A					
				Max 0.008 A					
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
		Hill country tributaries	Ohara Stream	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Poporangi Stream (Big Hill Rd)	Median 0.0025 A	Maintain	Maintain			
				Max 0.01 A					
			Maraekakaho Stream	Median 0.003 A					
				Max 0.017 A					
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
		Lowland tributaries	Waitio Stream	Median 0.002 A	Maintain	Maintain			
				Max 0.017 A					
			Ohiwia Stream	Median 0.006 A					
				Max 0.034 A					
			Tūtaekurī-Waimate Stream	Median 0.008 A					
				Max 0.028 A					
			All other locations	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Nitrate (mg NO_3-N/L) NOF Table 6	Annual median Annual 95th percentile Hazen method All flows	Headwaters	Kuripapango	Median 0.0075 A	Maintain	Maintain	*This attribute measures the toxic effects of nitrate, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 1.0; 95th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. **B band** (green)**:** (Median > 1.0 and ≤ 2.4; 95th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. **C band:** (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. **D band** (purple, below national bottom line) (Median > 6.9; 95th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				95th percentile 0.029 A					
			Whanawhana	Med 0.017 A					
				95th percentile 0.106 A					
			All other locations	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
		Main stem	d/s HB Dairies	Med 0.072 A	Maintain	Maintain			
				95th percentile 0.26 A					
			Fernhill	Med 0.094 A					
				95th percentile 0.35 A					
			Chesterhope	Med 0.093 A					
				95th percentile 0.292 A					
			All other locations	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
		Hill country tributaries	Ohara Stream	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Poporangi Stream (Big Hill Rd Bridge)	Med 0.585 A	Maintain	Maintain			
				95th percentile 0.857 A					
			Maraekakaho Stream	Med 0.335 A					
				95th percentile 1.431 A					
			All other locations	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
		Lowland tributaries	Waitio Stream	Med 0.23 A	Maintain	Maintain			
				95th percentile 0.54 A					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Ohiwia Stream	Med 0.66 A	Maintain	Maintain			
				95th percentile 0.92 A					
			Tūtaekurī-Waimate Stream	Med 0.25 A					
				95th percentile 0.52 A					
			All other locations	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Headwaters	Kuripapango	Med 0.002 A	Maintain	Med ≤ 0.002 A	**A band** (blue): (Median ≤ 0.006; 95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected. **B band** (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates. **C band** (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay. **D band** (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.	Algal growth	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses
				95th percentile 0.003 A		Med ≤ 0.003 A			
			Whanawhana	Med 0.002 A		Med ≤ 0.002 A			
				95th percentile 0.004 A		Med ≤ 0.004 A			
			All other locations	No/Insufficient data	Med ≤ 0.006 A	Med ≤ 0.006 A			
					95th percentile ≤ 0.021 A	95th percentile ≤ 0.021 A			
		Main stem	d/s HB Dairies	Med 0.005 A	Maintain	Med ≤ 0.005 A			
				95th percentile 0.009 A		Med ≤ 0.009 A			
			Fernhill	Med 0.008 B	Maintain	Med ≤ 0.008 B			
				95th percentile 0.020 A		Med ≤ 0.020 A			
			Chesterhope	Med 0.007 B	Maintain	Med ≤ 0.007 B			
				95th percentile 0.014 A		Med ≤ 0.014 A			
			All other locations	No/Insufficient data	Med ≤ 0.01 B	Med ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
		Hill country tributaries	Ohara Stream	No/Insufficient data	Maintain or improve	Med ≤ 0.01 B			
						95th percentile ≤ 0.03 B			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Poporangi Stream (Big Hill Rd Bridge)	Med 0.026 D	Improving trend	Med ≤ 0.01 B			
				95th percentile 0.035 C		95th percentile ≤0.03 B			
			Maraekakaho Stream	Med 0.024 D		Med ≤ 0.01 B			
				95th percentile 0.071 D		95th percentile ≤0.03 B			
			All other locations	No/Insufficient data	Med ≤ 0.01 B	Med ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
		Lowland tributaries	Waitio Stream	Med 0.024 D	Improving trend	Med ≤ 0.018 C		Estuary ecosystem health	• Uu • Wai Māori • Mauri • Aquifer recharge • Mahinga kai, taonga/tohu species • Natural character • Abstractive uses
				95th percentile 0.081 D		95th percentile ≤0.054 C			
			Ohiwia Stream	Med 0.117 D		Med ≤ 0.018 C			
				95th percentile 0.21 D		95th percentile ≤0.054 C			
			Tūtaekurī-Waimate Stream	Med 0.03 D		Med ≤ 0.018 C			
				95th percentile 0.049 D		95th percentile ≤0.054 C			
			All other locations	No/Insufficient data	Improving trend	Med ≤ 0.018 C			
						95th percentile ≤0.054 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Suspended fine sediment Visual clarity (m) NOF Table 8	**Trout fishery:** Median Below median flow **Recreation/ aesthetics** Visual clarity Median Monthly samples Minimum 5 years **NOF:** Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)	Headwaters	Kuripapango (Class 1)	5.7	Maintain	Maintain	**Trout fishery:** **Bright blue** ≥ 5 meets outstanding trout fishery values. **Light green** ≥ 3.75 and < 5 meets significant trout fishery. **Russet** <3.75 does not meet significant trout fishery values. **Recreation /aesthetics** **Very light green**: > 1.6 meets recreation/aesthetics values. **Light russet:** ≤ 1.6 doesn't meet recreation/ aesthetics values. **NOF Attribute** <*Kotahi Review*> **A band** (Class 1 ≥ 1.78 m; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. **B band** (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. **C band** (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. **D band** (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61). High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.	Trout fishery - outstanding	• Mauri • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Recreation • Amenity natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				5.7 A	<*Kotahi Review*>	<*Kotahi Review*>			
			Whanawhana (Class 1)	4.5	Improving trend	≥ 5			
				1.94 A	<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	No/Insufficient data	≥ 5	≥ 5			
					<*Kotahi Review*>	<*Kotahi Review*>			
		Main stem	d/s HB Dairies (Class 1)	3.31	Improving trend	≥ 3.75		Trout fishery - significant	
				0.95 D	<*Kotahi Review*>	<*Kotahi Review*>			
			Fernhill (Class 1)	2.74	Improving trend	≥ 3.75			
				0.65 D	<*Kotahi Review*>	<*Kotahi Review*>			
			Chesterhope (Class 1)	2.1	Improving trend	≥ 3.75			
				1.58 – D	<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	No/Insufficient data	≥ 3.75	≥ 3.75			
					<*Kotahi Review*>	<*Kotahi Review*>			
		Hill country tributaries	Ohara Stream (Class 3)	No/Insufficient data	≥ 3.75	≥ 3.75			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Poporangi Stream (Class 1)	No/Insufficient data	≥ 3.75	≥ 3.75			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Maraekakaho Stream	3.74	≥ 3.75	≥ 3.75			
				3.2 A	<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	No/Insufficient data	≥ 3.75	≥ 3.75			
					<*Kotahi Review*>	<*Kotahi Review*>			
		Lowland tributaries	Waitio Stream (Class 2)	4.45	Maintain	Maintain		Recreation /aesthetics	• Uu • Mauri • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Amenity natural character Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
					<*Kotahi Review*>	<*Kotahi Review*>			
			Ohiwia Stream (Class 2)	3.15	Maintain	Maintain			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Tūtaekurī-Waimate Stream (Class 1)	1.58	> 1.6	> 1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	No/Insufficient data	> 1.6	> 1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years 95th percentile	Headwaters		No/Insufficient data	<20%	<20%	**Light green:** < 20% protects stream biodiversity and fish (native and trout) habitat. **Russet**: ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.	Biodiversity	• Uu • Wai Māori • Mauri • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, Māori land, marae/hapū • Natural character • Indigenous biodiversity
		Main stem		No/Insufficient data	<20%	<20%			
		Hill country tributaries		No/Insufficient data	<20%	<20%			
		Lowland tributaries	Hard bottom streams	No/Insufficient data	<20%	<20%			

Deposited fine sediment (%) NOF Table 16	% fine sediment cover Median Monthly samples Minimum 5 years				*<Kotahi Review>*				

TABLE 26.3.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish	Index of Biotic Integrity (F-IBI) or alternative HBRC approved method	Headwaters ('Upper catchments')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel	A - High integrity of fish community. Habitat and migratory access have minimal degradation B - Moderate integrity of fish community. Habitat and/or migratory access are reduced and show some signs of stress C - Low integrity of fish community. Habitat and/or migratory access is considerably impairing and stressing the community. D - Severe loss of fish community integrity. There is substantial loss of habitat and/or migratory access, causing a high level of stress on the community.		
		Main stem ('Mid-low main stems')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Hill country tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Lowland tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
Macroinvertebrates MCI QMCI NOF Table 14 (Action Plan required) ASPM NOF Table 15 (Action Plan required)	MCI (sb MCI where relevant) Macroinverte-brate Community Index Average Below median flow QMCI (sb QMCI where relevant) Quantitative Macroinverte-brate Community Index ASPM Macroinverte-brate average score per metric	Headwaters	Kuripapango	MCI 117 A	Improving trend	MCI ≥ 130 A	**A band** (blue)**:** (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions. **B band** (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity. **C band** (orange)**:** (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity. **D band** (red): (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment. Communities are largely composed of taxa insensitive to organic pollution/enrichment Macroinvertebrate communities have severe loss of ecological integrity.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity • Trout
				QMCI No/Insufficient data		QMCI ≥ 6.5 A			
				ASPM No/Insufficient data		ASPM ≥ 0.6 A			
			Whanawhana	MCI 117 B	Improving trend	MCI ≥ 130 A			
				QMCI 5.2 C	Improving trend	QMCI ≥ 6.5 A			
				ASPM 0.52 B	Improving trend	ASPM ≥ 0.6 A			
			All other locations	No/Insufficient data	Improving trend	MCI ≥ 130 A			
						QMCI ≥ 6.5 A			
						ASPM ≥ 0.6 A			
		Main stem	d/s HB Dairies	MCI 111 B	Maintain	MCI ≥ 111 B			
				QMCI 5.5 B	Maintain	QMCI ≥ 5.5 B			
				ASPM 0.46 B	Maintain	ASPM ≥ 0.46 B			
			Fernhill	MCI 100 C	Improving trend	MCI ≥ 110 B			
				QMCI 5.3 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.43 B	Maintain	ASPM ≥ 0.4 B			
			Chesterhope	MCI 107.1 C	Improving trend	MCI ≥ 110 B			
				QMCI No/Insufficient data		QMCI ≥ 5.5 B			
				ASPM No/Insufficient data		ASPM ≥ 0.4 B			
			All other locations	No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
						QMCI ≥ 5.5 B			
						ASPM ≥ 0.4 B			
		Hill country tributaries	Ohara Stream	MCI No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
				QMCI No/Insufficient data		QMCI ≥ 5.5 B			
				ASPM No/Insufficient data		ASPM ≥ 0.4 B			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Poporangi Stream	MCI 117 B	Maintain	MCI ≥ 117 B			
				QMCI 6 B	Maintain	QMCI ≥ 6 B			
				ASPM 0.6 A	Maintain	ASPM ≥ 0.6 A			
			Maraekakaho Stream	MCI 86 D	Improving trend	MCI ≥ 110 B			
				QMCI 4.5 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.30 C	Improving trend	ASPM ≥ 0.4 B			
			All other locations	No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
						QMCI ≥ 5.5 B			
						ASPM ≥ 0.4 B			
		Lowland tributaries	Waitio Stream	MCI 98.1 C	Maintain or improve	MCI ≥ 98.1 C			• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
				QMCI 4.5 C	Maintain or improve	QMCI ≥ 0.3 C			
				ASPM 0.48 B	Maintain	ASPM ≥ 0.4 B			
			Ohiwia Stream	MCI 80.3 D	Improving trend	MCI ≥ 90 C			
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.22 D	Improving trend	ASPM ≥ 0.3 C			
			Tūtaekurī-Waimate Stream	MCI 75.8 D	Improving trend	MCI ≥ 90 C			
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.16 D	Improving trend	ASPM ≥ 0.3 C			
			All other locations	No/Insufficient data	Maintain or improve	MCI ≥ 90 C			
						QMCI ≥ 4.5 C			
						ASPM ≥ 0.3			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Nuisance Macrophyte CAV (max % CAV (Cross-sectional area/volume))	Monthly All year observations	Lowland tributaries		No/Insufficient data	≤ 50 %	≤ 50 %	**Light green** ≤ 50 % maintains ecological condition / flow conveyance / recreation values. **Russet** > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga waka • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

TABLE 26.3.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Periphyton (mg/m²) (Trophic state) NOF Table 2	Max exceedance < 8% of samples exceedances over 3 years monthly observations	Main stem	Fernhill	C	B	B	**A band:** (≤ 50 less than 8%) Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. **B band**: (Exceeds >50 and ≤ 120 less than 8%) Occasional blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. **C band:** (Exceeds >120 and ≤ 200 less than 8%). Periodic short -duration nuisance blooms reflecting moderate enrichment and/or moderate alteration of the natural flow regime or habitat **D band:** (exceeds national bottom line) (> 200 less than 8%) Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat	Ecosystem health	• Uu • Wai Māori • Natural character • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū Indigenous biodiversity

Periphyton cover (median of annual max %PeriWCC)	**Monthly observations All year**	**Headwaters**	**Kuripapango**	**No/Insufficient data**	**≤ 20**	**≤ 20**	**Blue:** **(≤ 20)** **Ecological condition excellent and maintains recreation/aesthetics values.** **Green:** **(> 20 and ≤ 30)** **Ecological condition good and maintains recreation/aesthetics values.** **Yellow:** **(> 30 and ≤ 40)** **Ecological condition good and doesn't meet recreation/aesthetics values.** **Orange:** **(> 40 and ≤ 55)** **Ecological condition fair and doesn't meet recreation/aesthetics values.** **Red:** **(> 55)** **Ecological condition poor and doesn't meet recreation/aesthetics values.**	**Ecosystem health**	• **Uu** • **Wai Māori** • **Mauri** • **Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū** • **Natural character** • **Indigenous biodiversity** • **Abstractive uses including stock drinking**
			Whanawhana	**27 (2012-2015)**	**≤ 20**	**≤ 20**			
			All other locations	**No/Insufficient data**	**≤ 20**	**≤ 20**			
		Main stem	**d/s HB Dairies**	**39 (2012-2015)**	**≤ 30**	**≤ 30**			
			Fernhill	**41 (2012-2015)**					
			Chesterhope	**No/Insufficient data**	**≤ 30**	**≤ 30**			
			All other locations	**No/Insufficient data**	**≤ 30**	**≤ 30**			
		Upland tributaries	**Ohara Stream**	**No/Insufficient data**	**≤ 30**	**≤ 30**			
			Poporangi Stream	**No/Insufficient data**	**≤ 20**	**≤ 20**			
			Maraekakaho Stream	**80 (2012-2015)**	**≤ 30**	**≤ 30**			
			All other locations	**No/Insufficient data**	**≤ 30**	**≤ 30**			

		Lowland tributaries	**Waitio Stream**	**22 (2012-2015)**	**≤ 22**	**≤ 22**			
			Ohiwia Stream	**49 (2012-2015)**	**≤ 40**	**≤ 30**			
			All other locations (hard bottom streams)	**No/Insufficient data**	**≤ 30**	**≤ 30**			
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background level	No change from background level	No increased risk from point source	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity • Trout
Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Headwaters		No/Insufficient data	A	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	**A band** (blue)**:** (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species. **C band** (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. **D band** (red): (below national bottom line) (7-day mean minimum < 5; 1-day min< 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data					
		Hill country tributaries		No/Insufficient data					
		Lowland tributaries		No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B			• Wai Māori • Mauri • Natural character • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Indigenous biodiversity
BOD ($ScBOD_5$)	Below median flow		Consent related		<2 mg/l	<2 mg/l	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.		
Ecosystem Metabolism ($gO_2m^{-2}d^{-1}$) NOF Table 21	7-day min (Dec-Mar) Young et al method				*<Kotahi Review>*	*<Kotahi Review>*			
Temperature (°C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Headwaters		No/Insufficient data	*<Kotahi review>*	≤ 1^0C increment from reference state A	**A band** (blue)**:** (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Natural character • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data	*<Kotahi review>*	≤ 2^0 C increment from reference state B			
		Hill country tributaries		No/Insufficient data	*<Kotahi review>*	≤ 2^0 C increment from reference state B			

		Lowland tributaries		No/Insufficient data	*<Kotahi review>*	≤ 2^0 C increment from reference state B	**C band** (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. **D band** (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.		• Wai Māori • Natural character • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Indigenous biodiversity
pH	At all times, 95th percentile				*<Kotahi Review>*	*<Kotahi Review>*			
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected. ANZECC guidelines	Ecosystem health	

TABLE 26.3.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Cyanobacteria[1] (benthic cover %)	Monthly observations, All year	All hard bottomed streams	As required	No/Insufficient data	< 20%[1]	< 20%[1]	**Light green** < 20% benthic cover. **Orange** ≥ 20% and <50% benthic cover. **Red** >50% benthic cover.	Recreation	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū, • Ecosystem health • Natural character • Abstractive uses including stock drinking
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Refer to NOF Table 9 for a fuller description of how to measure these attributes	Headwaters	Kuripapango	A	Maintain	Maintain	**A band (Blue)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. **B band (Green)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. **C band (Yellow)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. **D band (Orange)** 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. **E band (Red)** For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Whanawhana	A	Maintain	Maintain			
			All other locations	No/Insufficient data	A	A			
		Main stem	d/s HB Dairies	A	Maintain	Maintain			
			Fernhill	B	Maintain	Maintain			
			Chesterhope	B	Maintain	Maintain			
			All other locations	No/Insufficient data	B	B			
		Hill country tributaries	Ohara Stream	No/Insufficient data	B	B			
			Poporangi Stream	No/Insufficient data	B	B			
			Maraekakaho Stream	D	B	B			
			All other locations	No/Insufficient data	B	B			
		Lowland tributaries	Waitio Stream	B	Maintain	Maintain			
			Ohiwia Stream	D	B	B			
			Tūtaekurī-Waimate Stream	D	B	B			
			All other locations	No/Insufficient data	B	B			

Escherichia coli (E.coli) (cfu/100 mL) NOF Table 22	95th percentile of *E.coli per 100 mL*	Lowland	Ngaruroro at Chesterhope Bridge	308 Fair	*<Kotahi review>*		**Excellent** < 130 Estimated risk of *Campylobacter* infection has a <0.1% occurrence, 95% of the time. **Good** >130 and < 260 Estimated risk of *Campylobacter* infection has a 0.1 – 10% occurrence, 95% of the time. **Fair** >260 and < 540 Estimated risk of *Campylobacter* infection has a 1 - 5% occurrence, 95% of the time. **Poor** >540 (below national bottom line) Estimated risk of *Campylobacter* infection has a >5% occurrence, 95% of the time.	Primary contact	• Wai Māori • Mauri • Kaitiakitanga, he aha haere, ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
Note 1 The target attribute state for cyanobacteria is applicable only in relation to Policy 16 and any exceedance triggers an alert level response by Council ((from the MfE Alert-level Framework: NZ Guidelines for cyanobacteria in recreational freshwaters.)									

TABLE 26.3.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO_3 /l)	95th percentile 5 years	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes: The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality.									

TABLE 26.3.4: Threatened Species
<Insert through Kotahi process>

TABLE 26.3.5: Mahinga Kai
<Insert through Kotahi process>

TABLE 26.3.6: Mātauaranga Māori
<Insert through Kotahi process>

TABLE 26.3.7: Wetlands and Lakes
<Insert through Kotahi process>

SCHEDULE 26.4: KARAMŪ CATCHMENT

Refer to Schedule 26 Map 4

Vision
<to be drafted through Kotahi Review process>

Outcomes
This sits in the body of the Plan. Refer to TANK Objectives 10 and 11

TABLE 26.4.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Karamū (Lowland)	Raupare Stream	0.284	Maintain	Maintain	* This attribute measures the trophic state as it relates to algal growth **Light Green**: (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning. **Orange:** (> 0.444) Above ANZECC default guideline value, investigation/ management recommended.	Estuary ecosystem health (Algal growth where present)*	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Recreation • Aquifer recharge • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production, industrial and commercial use
			Ruahapia Stream	Insufficient/no data	≤ 0.444	≤ 0.444			
			Irongate Stream	Insufficient/no data	≤ 0.444	≤ 0.444			
			Karewarewa Stream	1.119	≤ 0.444	≤ 0.444			
			Awanui Stream	0.994	≤ 0.444	≤ 0.444			
			Poukawa Stream	0.088	Maintain	Maintain			
			Herehere Stream	0.13	Maintain	Maintain			
			Mangarau Stream (Te Aute)	Insufficient/no data	≤ 0.444	≤ 0.444			
			Clive River	0.445	≤ 0.444	≤ 0.444			
			All other locations	Insufficient/no data	≤ 0.444	≤ 0.444			
Ammonia (mg NH_4-N/L) NOF Table 5	Annual median Annual max Unionised ammonia based on pH at 20ºC All flows	Karamū (Lowland)	Raupare Stream	Median 0.009 A	Maintain	Maintain	* This attribute measures the toxic effects of ammonia, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested. **B band** (green)**:** (Median > 0.03 and ≤ 0.24; Max >0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species. **C band:** (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species). **D band** (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				Max 0.035 A	Maintain	Maintain			
			Ruahapia Stream	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Irongate Stream	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Karewarewa Stream	Median 0.021 A	Maintain	Maintain			
				Max 0.091 C	Improving trend	Max ≤ 0.05 A			
			Awanui Stream	Median 0.012 A	Maintain	Maintain			
				Max 0.083 C	Improving trend	Max ≤ 0.05 A			
			Poukawa Stream	Median 0.002 A	Maintain	Maintain			
				Max 0.01 A	Maintain	Maintain			
			Herehere Stream	Median 0.008 A	Maintain	Maintain			

*Lowland streams generally have soft sediment and macrophytes, lacking hard substrate for algae to grow; the critical value is estuary ecosystem health. For areas where algal growth is supported through hard substrate, DIN concentration has an effect on algal growth and is the critical value.

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				Max 0.05 3 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
			Mangarau Stream (Te Aute)	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Clive River	Median 0.013 A	Maintain	Maintain			
				Max 0.126 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
			All other locations	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
Nitrate (mg NO_3-N/L) NOF Table 6	1. Annual median 2. Annual 95th percentile Hazen method All flows	Karamū (Lowland)	Raupare Stream	Median 0.255 A	Maintain	Maintain	*This attribute measures the toxic effects of nitrate, not the trophic state (as covered for DIN above) **A band** (blue)**:** (Median ≤ 1.0; 95th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. **B band** (green)**:** (Median > 1.0 and ≤ 2.4; 95th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. **C band:** (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. **D band** (purple, below national bottom line) (Median > 6.9; 95th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	• Wai Māori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				95th percentile 0.830 A	Maintain	Maintain			
			Ruahapia Stream	Insufficient/no data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Irongate Stream	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Karewarewa Stream	Median 1.25 B	Median ≤ 1 A	Median ≤ 1 A			
				95th percentile 4.4 C	Improving trend	95th percentile ≤ 1.5 A			
			Awanui Stream	Median 1.2 B	Median ≤ 1 A	Median ≤ 1 A			
				95th percentile 3.17 B	95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Poukawa Stream	Median 0.086 A	Maintain	Maintain			
				95th percentile 0.618 A	Maintain	Maintain			
			Herehere Stream	Median 0.194 A	Maintain	Maintain			
				95th percentile 0.941 A	Maintain	Maintain			
			Mangarau Stream (Te Aute)	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Clive River	Median 0.61 A	Maintain	Maintain			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				95th percentile 1.832 B	95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			All other locations	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Karamū (Lowland)	Raupare Stream	Median 0.027 D	Improving trend	Median ≤ 0.018; C	**A band** (blue): (Median ≤ 0.006; 95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected. **B band** (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates. **C band** (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay. **D band** (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.	Estuary ecosystem health	• Uu • Wai Māori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
				95th percentile 0.038 C	Improving trend	95th percentile ≤0.054 C			
			Ruahapia Stream	Insufficient/no data	Improving trend	Median ≤ 0.018; C			
			Irongate Stream	Insufficient/no data		95th percentile ≤0.054 C			
			Karewarewa Stream	Median 0.122 D					
				95th percentile 0.275 D					
			Awanui Stream	Median 0.16 D					
				95th percentile 0.387 D					
			Poukawa Stream	Median 0.154 D					
				95th percentile 0.365 D					
			Herehere Stream	Median 0.064 D					
				95th percentile 0.104 D					
			Mangarau Stream (Te Aute)	Insufficient/no data					
			Clive River	Median 0.09 D					
				95th percentile 0.23 D					
			All other locations	Insufficient/no data	Maintain or improving trend	Median ≤ 0.018; C			
						95th percentile ≤0.054 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Suspended fine sediment Visual clarity (m) NOF Table 8	**Recreation/ Aesthetics** Visual clarity Median Monthly samples Minimum 5 years **NOF**: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)	Karamū (Lowland)	Raupare Stream (class1)	1.75	Maintain	Maintain	**Recreation/ aesthetics** **Very Light Green**: > 1.6 meets recreation/aesthetics values. **Light Russet** ≤ 1.6 doesn't meet recreation/aesthetics values. **NOF Attribute** <*Kotahi Review*> **A band** (Class 1 ≥ 1.78 m; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. **B band** (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. **C band** (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. **D band** (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.	Recreation/ aesthetics	• Uu • Mauri • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Recreation • Amenity natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				1.75 B	<*Kotahi Review*>	<*Kotahi Review*>			
			Ruahapia Stream (class 1)	Insufficient/no data	> 1.6	> 1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Irongate Stream (class 1)	Insufficient/no data	> 1.6	> 1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Karewarewa Stream (class 2)	2.15	Maintain	Maintain			
				2.15 A	<*Kotahi Review*>	<*Kotahi Review*>			
			Awanui Stream (class 2)	1.5	Improving trend	> 1.6			
				1.5 A	<*Kotahi Review*>	<*Kotahi Review*>			
			Poukawa Stream (class 2)	2.02	Maintain	Maintain			
				2.02 A	<*Kotahi Review*>	<*Kotahi Review*>			
			Herehere Stream (class 2)	2.35	Maintain A	Maintain A			
				2.35 A	<*Kotahi Review*>	<*Kotahi Review*>			
			Mangarau Stream (Te Aute) (class 2)	Insufficient/no data	> 1.6	>1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
			Clive River (class 1)	0.85	Improving trend	≥ 1.6			
				0.85 D	<*Kotahi Review*>	<*Kotahi Review*>			
			All other locations	Insufficient/no data	> 1.6	> 1.6			
					<*Kotahi Review*>	<*Kotahi Review*>			
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years 95th percentile	Karamū (Lowland)	Hard-bottomed streams	Insufficient/no data	<20%	<20%	**Light green:** < 20% protects stream biodiversity and fish (native and trout) habitat. **Russet:** ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.	Biodiversity	• Uu • Wai Māori • Mauri • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, Māori land, marae/hapū • Natural character • Indigenous biodiversity
Deposited fine sediment (%) NOF Table 16	% fine sediment cover Monthly samples Minimum 5 years				<*Kotahi Review*>	<*Kotahi Review*>			

TABLE 26.4.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish	**Index of Biotic Integrity** (F-IBI) **or alternative HBRC approved method**	Headwaters ('Upper catchments')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel	A - High integrity of fish community. Habitat and migratory access have minimal degradation B - Moderate integrity of fish community. Habitat and/or migratory access are reduced and show some signs of stress C - Low integrity of fish community. Habitat and/or migratory access is considerably impairing and stressing the community. D - Severe loss of fish community integrity. There is substantial loss of habitat and/or migratory access, causing a high level of stress on the community.		
		Main stem ('Mid-low main stems')	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Hill country tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
		Lowland tributaries	All sites	TBC through expert panel	*Maintain, or improve if D Band.*	TBC through expert panel			
Macroinvertebrates MCI QMCI NOF Table 14 ASPM NOF Table 15	MCI (sb-MCI where relevant) Macroinverte-brate Community Index Average Below median flow QMCI (sb-QMCI where relevant) Quantitative Macroinverte-brate Community Index ASPM Macroinverte-brate average score per metric	Karamū (Lowland)	Raupare Stream	MCI 62.7 D	Improving trend	MCI ≥90 C	**A band (**blue**):** (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions. **B band** (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity. **C band** (orange)**:** (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity. **D band** (red, (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.12 D	Improving trend	ASPM ≥ 0.3 C			
			Ruahapia Stream	MCI 53 D	Improving trend	MCI ≥90 C			
				QMCI 3.5	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
			Irongate Stream	MCI Not available	Improving trend	MCI ≥90 C			
				QMCI not available	Improving trend	QMCI ≥ 4.5 C			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C			
			Karewarewa Stream	MCI 55.9 D	Improving trend	MCI ≥90 C			
				QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
			Awanui Stream	MCI 52 D	Improving trend	MCI ≥90 C			
				QMCI 2.7 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
				MCI 56.3 D	Improving trend	MCI ≥90 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Poukawa Stream	QMCI 3.2 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
			Herehere Stream	MCI 60.7 D	Improving trend	MCI ≥90 C			
				QMCI 2.4 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.12 D	Improving trend	ASPM ≥ 0.3 C			
			Mangarau Stream (Te Aute)	MCI Not available	MCI ≥90 C	MCI ≥90 C			
				QMCI not available	Improving trend	QMCI ≥ 4.5 C			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C			
			Clive River	MCI 51.4 D	MCI ≥90 C	MCI ≥90 C			
				QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
			All other locations	MCI Not available	Improving trend	MCI ≥90 C			
				QMCI not available	Improving trend	QMCI ≥ 4.5 C			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C			
Nuisance Macrophyte CAV (max % CAV (Cross-sectional area/volume))[3]	Monthly All year observations	Lowland tributaries		No/Insufficient data	≤ 50 %	≤ 50 %	**Light green** ≤ 50 % maintains ecological condition / flow conveyance / recreation values. **Russet** > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	• Uu • Wai Māori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga waka • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

TABLE 26.4.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels	No increased risk from point source.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous, toanga/tohu species • Natural character • Indigenous biodiversity

Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Karamū (Lowland)	All other locations	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B	**A band** (blue)**:** (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species. **C band** (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. **D band** (red, below national bottom line) (7-day mean minimum < 5; 1-day min< 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.	Ecosystem health	• Wai Māori • Natural character • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Indigenous biodiversity • Trout
BOD ($ScBOD_5$)	Below median flow		Consent related		<2 mg/l	<2 mg/l	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity
Ecosystem Metabolism ($gO_2m^{-2}d^{-1}$) NOF Table 21	7-day min (Dec-Mar) Young et al method	Karamū (Lowland)			*<Kotahi review>*	*<Kotahi review>*			
Temperature regime (˚C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Karamū (Lowland)		No/Insufficient data	*<Kotahi Review>*	≤ 2◊ C increment from reference state B	**A band** (blue)**:** (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. **B band** (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. **C band** (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. **D band** (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.	Ecosystem health	• Wai Māori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Natural character • Indigenous biodiversity
pH	At all times, 95th percentile				*<Kotahi Review>*	*<Kotahi Review>*			
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required		99% species protection at all times	99% species protection at all times	Greater than 99% of species are protected.	Ecosystem health	

TABLE 26.4.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Overall band determined over 4 numeric attribute states – details see NOF Table 9	Karamū (Lowland)	Raupare Stream	E	C	C	**A band (Blue)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. **B band (Green)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. **C band (Yellow)** For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. **D band (Orange)** 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. **E band (Red)** For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere • Ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Ruahapia Stream	No/Insufficient data	C	C			
			Irongate Stream	No/Insufficient data	C	C			
			Karewarewa Stream	E	C	C			
			Awanui Stream	E	C	C			
			Poukawa Stream	B	Maintain	Maintain			
			Herehere Stream	E	C	C			
			Mangarau Stream (Te Aute)	No/Insufficient data	C	C			
			Clive River	D	C	C			
			Other river reaches	E	C	C			
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 22	95th percentile of *E.coli per 100 mL*	Karamū	Clive River at Boat Ramp	576 D	*<Kotahi Review>*		**Excellent** < 130 Estimated risk of *Campylobacter* infection has a <0.1% occurrence, 95% of the time. **Good** >130 and < 260 Estimated risk of *Campylobacter* infection has a 0.1 – 10% occurrence, 95% of the time. **Fair** >260 and < 540 Estimated risk of *Campylobacter* infection has a 1 - 5% occurrence, 95% of the time. **Poor** >540 (below national bottom line) Estimated risk of *Campylobacter* infection has a >5% occurrence, 95% of the time.	Uu Recreation Human health	• Wai Māori • Mauri • Kaitiakitanga, he aha haere • Ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, Māori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

TABLE 26.4.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO_3 /l)	95th percentile 5 years	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	*<Kotahi review>*	*<Kotahi review>*	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	

Notes:

- The attributes are as measured in groundwater at 10m below ground level.
- Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality.

TABLE 26.4.4: Threatened Species
<Insert through Kotahi process>

TABLE 26.4.5: Mahinga Kai
<Insert through Kotahi process>

TABLE 26.4.6: Mātauranga Māori
<Insert through Kotahi process>

TABLE 26.4.7: Wetlands and Lakes
<Insert through Kotahi process>

SCHEDULE 26.5: AHURIRI ESTUARY / TE WHANGANUI-A-OROTŪ & WAITANGI ESTUARY

Refer to Schedule 26 Map 5

Vision
<to be drafted through Kotahi Review process>

Outcomes
This sits in the body of the Plan. Refer to TANK Objectives 10-13 and Kotahi Review

TABLE 26.5.1 AHURIRI ESTUARY/TE WHANGANUI-A-OROTŪ Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET[1] ATTRIBUTE STATE 2040	LONG TERM[1] TARGET ATTRIBUTE STATE	~~OUTCOME~~ DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Water column dissolved oxygen (mg/L)	Summer monitoring data for discrete specified periods: 1. 7-day mean 2. 7-day min 3. 1-day min	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	*<Kotahi Review>* *<Kotahi Review>* *<Kotahi Review>*	7 day mean ≥ 7.0 7 day minimum ≥ 6.0 1 day minimum ≥ 5.0	Dissolved oxygen in the water column is sufficient to support ecosystem health and life supporting capacity	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Enterococci (cfu/100 mL)	Summer bathing season	Ahuriri Estuary	Pandora Pond at Waka Ama	95th percentile 44	*<Kotahi Review>*	95th percentile 41-200	1-5% gastrointestinal illness risk 0.3- <1.9% acute febrile respiratory illness risk MAC B grade – Mfe/MoH, 2003	Kaitiakitanga Recreation Mahinga kai	• Uu • Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Esherichia coli (*E. coli*) (cfu/100 mL)	Summer bathing season	Ahuriri Estuary	Pandora Pond at Waka Ama	95th percentile 540	*<Kotahi Review>*	95th percentile 260-540	Estimated risk of *Campylobacter* infection has a 1-5% occurrence, 95% of the time MAC C grade – Mfe/MoH, 2003	Kaitiakitanga Recreation Mahinga kai	• Uu • Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water Temperature (°C)	Summer maxima	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	Not more than 3◦C difference compared to reference site	Not more than 3◦C difference compared to reference site	Water temperature is maintained for ecosystem health	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
pH (°C)	Daily summer maxima	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	pH is greater than 7.0 and less than 8.5	pH is greater than 7.0 and less than 8.5	pH range is maintained for ecosystem health and life-supporting capacity	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Nitrate toxicity (mg/L)	Annual median Annual 95th percentile (Hazen)	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Median 0.007 95th percentile 0.45	Maintain	Maintain	**Low risk:** (Median < 2.4 mg/L; and 95th % ile < 3.5 mg/L) **High risk:** (Median >2.4 mg/L; and 95th % ile >3.5 mg/L)	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Ammonia toxicity (mg/L)	Annual maxima for a 12-month period when corrected for pH and temperature	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	TBC	95% species protection	95% species protection	**99% of species protection:** (<0.16 mg/L) **95% of species protection:** (<0.46 mg/L)	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Toxicants in water (as described in ANZG)	As required	Ahuriri Estuary		No/Insufficient data	Does not exceed 95% level of protection in ANZG, 2018.	Does not exceed 95% level of protection in ANZG, 2018		Kaitiakitanga Ecosystem health Mahinga kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrogen in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Nitrate - Nitrogen 0.007 Total Nitrogen: 0.41	Where nutrient levels exceed trigger values there is an improving trend by 2040 Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>* *<Kotahi Review>*	**Trigger values** Nitrate-Nitrogen 0.05 Total Nitrogen 0.11	Kaitiakitanga Ecosystem health	• Mauri • Ecosystem health • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Phosphorus in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Dissolved Reactive Phosphorus: 0.10 Total Phosphorus: 0.14	Where nutrient levels exceed trigger values there is an improving trend by 2040 Where nutrient levels trigger values there is an improving trend by 2040	*<Kotahi Review>* *<Kotahi Review>*	**Trigger Values** Dissolved Reactive Phosphorus 0.015 Total Phosphorus 0.05	Kaitiakitanga Ecosystem health	• Mauri • Ecosystem health • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET[1] ATTRIBUTE STATE 2040	LONG TERM[1] TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Nuisance macroalgae cover	TBC	Ahuriri Estuary	TBC	No/Insufficient data		*<Kotahi Review>*		Kaitiakitanga Ecosystem health	• Uu • Mauri • Recreation • Natural Character • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water column Chlorophyll *a* (mg/L)	Annual median of no less than 8 samples in a 12- month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	0.002	Maintain	Maintain	**Low risk:** **(0.004 mg/L)** The risk of excessive phytoplankton growth is low	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Sediment Mud content (% composition)	Spatial analysis of estuary grain size	Ahuriri Estuary	Estuary to Taipo confluence	TBC	The areal extent of soft mud[2] substrate in the estuary should not increase from its current extent	The areal extent of soft mud[2] substrate in the estuary should not increase from its current extent	No increase in areas where sediment stress may be impacting the health of the estuary	Kaitiakitanga Ecosystem health Mahinga kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana • Natural character
Toxicants in sediments (mg/kg)	Annual median of site replicates at Estuarine Ecology Monitoring Sites	Ahuriri Estuary	Estuarine Ecology Monitoring Sites	TBC	Does not exceed interim sediment quality guidelines (ISQG) - High	Does not exceed interim sediment quality guidelines (ISQG) - Low	**Rare adverse effects:** (< ISQG – Low) **Occasional adverse effects:** (< ISQG – High) **Frequent adverse effects:** (>ISQG - High)	Kaitiakitanga Ecosystem health Mahinga Kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana

Notes

1. The 2040 target and long term outcome are applicable to all estuary waters and are monitored at the specified sites.
2. Soft mud refers to the proportion of the substrate that is less than 63 microns.

TABLE 26.5.2: WAITANGI ESTUARY Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET1 ATTRIBUTE STATE 2040	LONG TERM1 TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTIONDESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Water column dissolved oxygen (mg/L)	Summer monitoring data for discrete specified periods	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	*<Kotahi Review>*	7 day mean ≥ 7.0	Dissolved oxygen in the water column is sufficient to support ecosystem health and life supporting capacity	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana • Natural character
					<Kotahi Review>	7 day minimum ≥ 6.0			
					<Kotahi Review>	1 day minimum ≥ 5.0			
Water Temperature (°C)	Summer maxima	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	Not more than 3◦C difference compared to reference site	Not more than 3◦C difference compared to reference site	Water temperature is maintained for ecosystem health	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
pH	Daily summer maxima	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	pH is greater than 7.0 and less than 8.5	pH is greater than 7.0 and less than 8.5	pH range is maintained for ecosystem health and life-supporting capacity	Kaitiakitanga Ecosystem Health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Nitrate toxicity (mg/L)	Annual median Annual 95th percentile (Hazen)	Waitangi Estuary	Waitangi Estuary	Median 0.26 95th percentile 0.57	Maintain	Maintain	**Low risk:** (Median < 2.4 mg/L; and 95th % ile < 3.5 mg/L) **High risk:** (Median >2.4 mg/L; and 95th % ile >3.5 mg/L)	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana

Ammonia toxicity (mg/L)	Annual maxima for a 12-month period when corrected for pH and temperature	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	95% species protection	95% species protection	**99% of species protection:** (<0.16 mg/L) **95% of species protection:** (<0.46 mg/L)	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Toxicants in water (as described in ANZG)	As required	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	Does not exceed 95% level of protection in ANZG, 2018.	Does not exceed 95% level of protection in ANZG, 2018	Does not exceed 95% level of protection in ANZG, 2018	Kaitiakitanga Ecosystem health Mahinga kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrogen in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Nitrate - Nitrogen 0.26	Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>*	**Trigger values** Nitrate-Nitrogen 0.05 Total Nitrogen 0.11	Kaitiakitanga Ecosystem health	• Mauri • Ecosystem health • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
				Total Nitrogen: 0.45	Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>*			
Phosphorus in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Dissolved Reactive Phosphorus 0.02	Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>*	**Trigger Values** Dissolved Reactive Phosphorus 0.015 Total Phosphorus 0.05	Kaitiakitanga Ecosystem health	• Mauri • Ecosystem health • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
				Total Phosphorus 0.04	Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>*			
Nuisance macroalgae cover	TBC	Waitangi Estuary	TBC	No/Insufficient data	*<Kotahi Review>*	*<Kotahi Review>*		Kaitiakitanga Ecosystem health	• Uu • Mauri • Recreation • Natural Character • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water column Chlorophyll *a* (mg/L)	Annual median of no less than 8 samples in a 12-month period	Waitangi Estuary	Waitangi Estuary	0.001	Maintain	Maintain	**Low risk:** **(0.004 mg/L)** The risk of excessive phytoplankton growth is low	Kaitiakitanga Ecosystem health	• Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species • habitat and spawning, ahu moana
Sediment Mud content (% composition)	Spatial analysis of estuary grain size	Waitangi Estuary	TBC	TBC	The areal extent of soft mud2 substrate in the estuary should not increase from its current extent	The areal extent of soft mud2 substrate in the estuary should not increase from its current extent	No increase in areas where sediment stress may be impacting the health of the estuary	Kaitiakitanga Ecosystem health Mahinga kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana • Natural character
Toxicants in sediments (mg/kg)	Annual median of site replicates at Estuarine Ecology Monitoring Sites	Waitangi Estuary	Estuarine Ecology Monitoring Sites	TBC	Does not exceed interim sediment quality guidelines (ISQG) - High	Does not exceed interim sediment quality guidelines (ISQG) - Low	**Rare adverse effects:** (< ISQG – Low) **Occasional adverse effects:** (< ISQG – High) **Frequent adverse effects:** (>ISQG - High)	Kaitiakitanga Ecosystem health Mahinga Kai	• Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana

Notes

1. The 2040 target and long term outcome are applicable to all estuary waters and are monitored at the specified sites.
2. Soft mud refers to the proportion of the substrate that is less than 63 microns.

Schedule 27: Priority Catchments

Refer to Rule TANK 1.

This schedule sets out the thresholds used to determine the priority catchments or places. The priority catchments identified using these thresholds are shown on the Schedule 27 Maps 1 - 4 and Schedule 34 Maps 1 - 2.

The priority catchments are determined according to the following water quality attributes and risks:

1. Risk of sediment loss in t/km^2/year (as modelled by SedNet)
2. Nitrogen concentrations based on SOE data and modelling
3. Risk of significant contribution of high nitrogen loads (as modelled by SOURCE and using Overseer data)
4. The level of dissolved oxygen (specific for lowland streams with slope <2 m/km)
5. Risk of significant contribution to high phosphorous levels
6. Source water areas for municipal drinking water supply.

The priority order assigned in relation to each of these water quality issues is as follows:

	High priority	**Medium priority**	**Low priority**	**Long term**
Sediment yield (SedNet)	>450 t/km^2/year	350 - 450 t/km^2/year	250 - 350 t/km^2/year	<250 t/km^2/year
TN yield (modelled) (all flows, average per catchment)	> 10kg/ha/yr	> 3.5 kg/ha/yr	> 1.2 kg/ha/yr	<1.2 kg/ha/yr
Dissolved Oxygen levels Class A streams (and /or where stream gradient <2m/km)	anoxia (periods of little or no oxygen)	< 3 mg/L daily minimum and/or DO saturation <30%	< 4mg/L daily minimum and/or DO saturation < 40%	< 6 mg/L daily minimum and/or DO saturation <60%
TP yield (modelled) (all flows, average per catchment)	>1.2kg/ha/yr	>0.6kg/ha/yr	>0.3kg/ha/yr	<0.3kg/ha/yr
Drinking Water Supply	**Production land in SPZs** (See Schedule 34 Maps 1 - 2)			

Schedule 28 Maps 1 – 4 and Schedule 34 Maps 1 – 2 show the spatial extent and location of the priority areas.

Farm Environment and Catchment Collective Plans and Industry Programmes are to be completed in the following priority order; High, Medium and Low Priority over the first 3, 6 and 9 years respectively following <the operative date> of the plan (although work can commence at any time and farmers will be encouraged to start with their own programme as soon as possible).

Schedule 28: Land Use Change

If the **Land Use Change** ~~use of production land~~ on farm properties or farming enterprises in the TANK catchments exceeds ~~changes more than~~ the amounts specified in Rule TANK 3, a consent will be required according to Rules TANK 4 and TANK 5.

Table 1 of this Schedule describes production land use activities according to the level of potential nitrogen loss risk.

Table 1: Land Use Types and Nitrogen Leaching risk

Level	Land use activity or type	Incorporating	N Leaching risk	Direction of increasing risk
6	Any change from un-irrigated to Irrigated land	Any irrigation	High leaching risk Variable leaching risk[1]	
5	Commercial Vegetable Growing	Vegetable growing for human consumption		
4	Dairy, dairy support or arable cropping	Dairy cattle and dairy support cattle, Arable as defined in RMA		
3	Pastoral land use	Sheep, beef, deer, goats,		
2	Horticulture	As defined in the RMA The use of land to grow food or beverage crops for human consumption (other than arable crops), or flowers for commercial supply.		
1	Scrub land/ Forestry	Scrub or Forestry	Low leaching risk	
Note 1; Changes to irrigation may not result in higher N loss, but any change above the specified threshold from un-irrigated land use to irrigated land use is subject to assessment				

Schedule 29: Catchment Collective, Industry Programme and Freshwater Farm Plan

The TANK Plan provides for an **Industry Programme** or a **Catchment Collective** to work on behalf of their members to meet local water quality and environmental objectives.
Alternatively, landowners may also prepare an individual **Freshwater Farm Plan.**

This schedule sets out the requirements for:

a) The establishment of a Catchment Collective, their operation and the preparation of their Catchment Collective Plan in order for them to be approved by the Hawke's Bay Regional Council
b) Freshwater Farm Plans
c) Industry Programmes.

Catchment Collective Plans and Industry Programmes must identify the key water quality and water quantity management issues identified in this Plan that are relevant to:

1. The existing water quality in the catchment as indicated by
    - the modelled or measured water quality as indicated in Schedule 26
    - the Council's SOE reports
    - local water quality measured using comparable water quality monitoring methods in the applicable catchment(s) and
    - other water quality monitoring used as a guide to measure progress towards water quality targets
2. The priorities for water quality management, as shown in Schedule 27 and Schedule 27 Maps 1 - 4
3. the nature of the land and water use activities carried out within that catchment
4. the scale of the effects on water quality or water quantity from the land and water use activities in that catchment.

Any Catchment Collective Plan prepared in accordance with Schedule 29 may include or contribute to other initiatives or objectives (such as in relation to farm production, pest control, biodiversity or other land management issue) as desired by the Catchment Collective or Industry Programme. These aspects are not subject to the Council's approval but may be a means of enabling integrated land and water management for a wider range of management objectives.

Catchment Collectives
A Catchment Collective must meet the requirements set out below:

The properties within a Catchment Collective will contribute water (by overland or groundwater flow) to a waterbody common to all Catchment Collective members. Where a property straddles a catchment, a property owner may choose to belong to both groups, but if joining only one Collective, is required to join the one where the property has the greatest area. Neighbouring groups are encouraged to work collaboratively in these situations.

The relevant catchment in relation to Section A of the Schedule is the catchment of the river or stream common to all of the member properties.

Section A: Catchment Collectives Governance and Management

This section sets out the requirements for each TANK Catchment Collective.

The Catchment Collective summary report will be made publicly available through the Council website.

1. Governance and Management

1.1 Each Catchment Collective must address the following governance and management arrangements of the Catchment Collective including**:**

a) How decisions are to be made and how the requirements of Section B will be carried out including obligations by members to carry out the property specific requirements
b) Conditions of membership of the Catchment Collective by individual land managers (the 'Members' who commit to the Catchment Collective), including the circumstances and terms of membership, the conflict resolution process that will be used in the event of any disputes and the circumstances under which sanctions or removal from the

Collective including in relation to unreasonable non- performance of actions identified in clause 2 below

c) The process for assessing performance at an individual property level compared to agreed actions at the catchment scale.

Note 1: The Catchment Collective may prepare its own terms of reference as well as manage their own decision-making processes and administration. This may include appointing a spokesperson or secretary to ensure recording and reporting work is completed as necessary.

Note 2: The Council will support the governance and management of Catchment Collectives through the provision of a conflict resolution service should this be necessary.

1.2 Information and management systems and processes to ensure:

a) Competent and consistent performance in meeting the requirements of this Schedule
b) Robust data management, including up-to-date registers of Catchment Collective Members
c) Timely provision of suitable quality data and information required under clause 5 to Hawke's Bay Regional Council
d) Conditions of membership of the Catchment Collective Plan individual land managers (the 'Members') who commit to the Catchment Collective Plan including provision of information to enable reporting requirements to be met.

1.3 A description of the Catchment Collective Plan area including:

a) locations and maps
b) land uses
c) locations of:
    (i) drains (including subsurface drains), streams, rivers, wetlands and other water bodies,
    (ii) any Source Protection Zone or Extent for any Registered Drinking Water Supply that any properties in the programme area are located in, plus the contact details of the water supply manager (Note – Maps included with this plan show the locations of the SPZs and Extent for any Registered Drinking Water Supplies. Contact information for the supply manager is available on the Council website)
d) activities at particular risk of nutrient loss
e) property boundaries
f) up-to-date details about ownership and property managers
g) up-to-date contact details of individual land managers and landowners within the Catchment Collective (the 'Members').

2. Environmental Outcomes

2.1 The Catchment Collective Plan must include statements about the:

a) specified target attribute states in Schedule 26 of this Plan relevant to the location of Members' properties
b) measures or practices needed to minimise and mitigating the cumulative environmental effects of land use that will enable the specified water quality objectives to be met
c) timeframes for when each of the actions or mitigations at a property or catchment scale are to be implemented and which are consistent with milestones specified in POL TANK 25.

2.2 The Plan must address where appropriate:

a) managing contaminant losses (especially sediment, nitrogen and phosphorous and bacteria) to waterways including efficient use of nutrients and good management practice including when carrying out land disturbance activities and in relation to management of critical contaminant source areas
b) where water quality does not meet 2040 target attribute states in Schedule 26, identifying how there will be reductions in losses that contribute to meeting the specified water quality including, where appropriate, reference to:
    (i) industry specified benchmarks or good practice for nitrogen and phosphorus management
    (ii) LUC (Land Use Capability) and soil types
    (iii) Olsen P levels in soil
    (iv) Stock management including stocking rates for different types of stock
    (v) Application of fertilisers
    (vi) Application of collected animal effluent
    (vii) Cultivation, soil disturbance or vegetation clearance activities
c) Management of riparian margins, including to meet the outcomes specified in POL TANK 12

d) Maintaining or improving the physical and biological condition of soils in a manner consistent with POL TANK 19 and RRMP Rule 7 in order to avoid, remedy or mitigate problems arising from:
   (i) Loss of topsoil by wind or water erosion
   (ii) Movement of soils and contaminants into waterways
   (iii) Damage to soil structure and health
   (iv) Mass movements of soil where this can be managed by landowner mitigation
e) Wetland management including to meet the outcomes specified in POLs TANK 15 and 25
f) Management of animal effluent to avoid contamination of ground and surface waters
g) Measures required to reduce risk of contamination of the source water for any Registered Drinking Water Supply
h) Management of stock, including in relation to river or stream crossings and exclusion from waterways in a manner that complies with the Resource Management (Stock Exclusion) Regulations (2020)
i) **in the Karamū and Poukawa Catchments:** the identification of opportunities to provide shading of the adjacent waterway or improvements to riparian margin values as specified in POLs TANK 3 and 12.

2.3 A Catchment Collective member may adopt or integrate a plan or documentation developed as part of an Industry Good Agricultural Practice programme, provided that the plan or documentation is consistent with the requirements of the Catchment Collective Plan.

3. Approval

3.1 The Catchment Collective Plan will be submitted for approval by the HBRC no later than by the end of the earliest relevant year specified for that catchment in Schedule 27. In making decisions to approve the Plan the Council will take into account:
a) whether the requirements of this Schedule are met
b) whether the Catchment Collective Plan is consistent with the policies, water quality objectives and milestones that are relevant for that Catchment Collective
c) whether the Catchment Collective Plan was appropriately informed by person(s) with the necessary knowledge to make assessments about the contaminant loss risk and mitigation measures
d) whether the governance and management systems are in place to enable the implementation of the Catchment Collective Plan.

3.2 Where approval is not given, it means the requirements of Rule TANK 1 are not able to be met and land use is therefore subject to either Rule TANK 1 (b)2 or Rule TANK 2.

4. Information Requirements

4.1 The Catchment Collective must prepare a statement of the data and information that will be collected in order to monitor implementation and report to Council.

4.2 Information will be required where appropriate about:
a) changes to Catchment Collective area and membership
b) nature and significance of any land use change in accordance with TANK POL 20 and Rule TANK 4 or 5 and based on land uses at 2 May 2020
c) the results of any environmental monitoring carried out by the Catchment Collective
d) the mitigation measures or practices carried out to reduce contaminant loss (consistent with what is industry good management practice) that will be adopted by the property owners or managers and as detailed in clause 2.1.

5. Reporting and Review

5.1 A summary report on the implementation of the Catchment Collective Plan shall be submitted annually to the Hawke's Bay Regional Council or less frequently as determined by Council if all agreed mitigations have been completed, 2040 target attribute states in Schedule 26 are being met and all land use change is authorised under Rules TANK 3, 4 or 5.

5.2 The summary report will be supplied in the format specified by Council.

5.3 The summary report will include:
a) information collected under section 4
b) any amendments to the programmed mitigation measures in response to any areas where the Catchment

Collective Plan is not achieving the outcomes determined in Clauses 2.1 and 2.2 of this Schedule and the timeframes for implementation, plus any changes made to them and reasons for them (including any adverse events such as severe weather, earthquakes etc.)

c) issues or matters that require input or direction from the Council, including the management of activities outside the Catchment Collective which may be adversely affecting the achievement of the of programme objectives, including identification of additional information/support from HBRC that would assist in the achievement of the objectives of the programme.

5.4 Every 5 years the summary report shall also provide information about:

a) adoption of any new mitigation or good practice measures identified by industry

b) identification of opportunities for improvements to the Catchment Collective Plan including, where necessary, amending performance standards where the Catchment Collective Plan is not achieving the outcomes sought as determined in Clauses 2.1 and 2.2 of this Schedule.

6. Auditing

6.1 Auditing will be carried out as described in Section D.

Section B: Freshwater Farm Plans

If a property is not subject to a Catchment Collective Plan prepared under Section A or a TANK Industry Programme prepared under Section C of this Schedule, a Farm Freshwater Plan must be prepared in accordance with Section B.

Freshwater Farm Plan Requirements

1. Requirements for Freshwater Farm Plans

1.1 A Freshwater Farm Plan must:

a) Be submitted to the Council no later than by the end of the earliest relevant year specified for that catchment in Schedule 27 to ensure it complies with the requirements of this Schedule and Schedule 27 including:

(i) in relation to the requirements of the policies, water quality objectives and milestone that are relevant for the catchment in which the farm operation is located

(ii) Whether the Plan was appropriately informed by a person with the necessary knowledge to make assessments about the contaminant loss risk and mitigation measures

(iii) Where the Plan does not meet the requirements of this Schedule or Schedule 27, the requirements of Rule TANK 1 are not able to be met and land use is therefore subject to either Rule TANK 1(b)(ii) or Rule TANK 2

b) Contain the following information:

(i) physical address

(ii) details about ownership and property managers including contact details for the person responsible for the implementation of the Plan

c) Be accompanied by maps or aerial photograph at a scale to clearly show:

(i) property boundaries

(ii) locations or activities likely to result in contaminant loss or at risk from contaminant loss including:

i. areas at risk of sediment loss

ii. the location of drains (including subsurface drains), streams, rivers, wetlands and other water bodies

iii. the location of any Source Protection Zone or Extent for any Registered Drinking Water Supply that any properties in the programme area are located in, plus the contact details of the water supply manager (*Note: Maps included with this plan show the locations of the SPZs and Extents for any Registered Drinking Water Supplies. Contact information for the water supply manager is available on the Council website)*

iv. activities at particular risk of nutrient loss

v. where contaminant discharge activities are taking place

d) meet the requirements of Clauses 2 and 4 in Section A of this Schedule as applicable for the property, its location and the land use activities being carried out.

2. Reporting and Review

2.1 A report is submitted annually or less frequently as determined by Council if all agreed mitigations have been completed and target attribute states are being met.

2.2 The report will be in the format specified by Council.

2.3 The report will include:

a) information collected under Clause 4.2 (a) (b) (d) and (e) of Section A
b) any amendments to the programmed mitigation measures in response to any areas where the Freshwater Farm Plan is not achieving the outcomes sought as determined under the process described in Section A2.1 and 2.2 of this Schedule and the timeframes for implementation plus any changes made to them and reasons for them (including any adverse events such as severe weather, earthquakes etc).

2.4 Every 5 years the annual report shall also provide information about:

a) adoption of any new mitigation or good practice measures identified by industry
b) identification of opportunities for improvements to the programme including, where necessary, amending performance standards, and in relation to nutrient management in clause 2.3 of Section A where the Freshwater Farm Plan is not achieving the outcomes sought as determined under the process described in Section A2.1 and 2.2 of this Schedule.

3. Auditing

3.1 Auditing will be carried out as described in Section D.

Section C: Industry Programmes

The purpose of this schedule is to set out the minimum standards for Industry Programmes.

Applications for approval of an Industry Programme shall be lodged with the Hawke's Bay Regional Council, and shall include information that demonstrates how the following requirements are met. The Hawke's Bay Regional Council may request further information or clarification on the application as it sees fit.

Approval will be at the discretion of the Chief Executive of the Hawke's Bay Regional Council subject to the Chief Executive being satisfied that the programme will meet the standards set out below.

1. Governance and management

1.1 Industry Programmes must include:

a) A description of the governance arrangements of the programme
b) The contractual arrangements between the programme and its members
c) A description of the process for gaining and ceasing membership
d) A description of the programme area, including:
    i. land uses
    ii. key environmental issues and measures to address them
    iii. property boundaries
    iv. ownership details of members' properties
e) A procedure for keeping records including up-to-date registers of programme members and provision of data to the HBRC
f) Procedures agreed with the HBRC about how requirements of this Section are to be met.

2 Preparation of Freshwater Farm Plans

2.2 Industry Programmes must include:

a) A statement of the programme's capability and capacity to deliver Freshwater Farm Plans meet the requirements of this Schedule, including:

i. The requirements of Section A2.1 and 2.2 of this Schedule.

3 Implementation of Freshwater Farm Plans

3.1 Industry Programmes must include:

a) A statement of the programme's capability and capacity for monitoring and assessing the implementation of Freshwater Farm Plans, including the qualifications and experience of any personnel employed by or otherwise contracted to the programme to monitor or assess implementation of Freshwater Farm Plans

b) A description of the expectations and agreements around landowner and property record-keeping

c) A strategy for identifying and managing poor performance in implementing Freshwater Farm Plans.

4 Information and Reporting

4.1 The Industry Programme must prepare a statement of the data and information that will be collected in order to monitor implementation and report to Council.

4.2 Information will be required where appropriate about:

a) changes to programme area and membership
b) the results of any environmental monitoring carried out by the Industry Programme
c) the mitigation measures or practices carried out to reduce contaminant loss (consistent with what is industry good management practice) that will be adopted by the property owners or managers.

4.3 A summary report on the implementation of the Industry Programme shall be submitted annually to the Hawke's Bay Regional Council or less frequently as determined by Council if all agreed mitigations have been completed and target attribute states are being met.

4.4 The report will be supplied in the format specified by Council in consultation with the relevant industry group.

5 Audit

5.1 Industry Programmes must include a description of an audit process to be conducted by an independent body, including:

a) A process for assessing the accreditation of the programme and any personnel employed by or otherwise contracted to the scheme to prepare, and audit the implementation of Freshwater Farm Plans

b) A process for auditing Freshwater Farm Plans

c) A statement of how audit results will be shared with the programme's members and the wider community

d) A summary audit report must be submitted to the Hawke's Bay Regional Council annually.

Section D Council Auditing and Reporting

1. The HBRC will:

a) Publicly report on the implementation of requirements for Freshwater Farm Plans and Catchment Collective Plans
b) Undertake audits of Catchment Collective Planss including on member properties in relation to individual and programme implementation of programmed works, adoption of identified good management practices, including nutrient management budgets where required
c) Undertake audits of properties in relation the Freshwater Farm Plan implementation of programmed works, adoption of identified good management practices, including nutrient management budgets where required.

Schedule 30: Flows, Levels and Allocation Limits

Minimum and Trigger Flows and Allocation Limits

Refer to Rules TANK 8-11. This Schedule specifies the amount of water that may be authorised for abstraction from the specified water quantity areas and the flows at which water abstraction is subject to restrictions or requirements.

The minimum flow is the flow at which surface water and Zone 1 Groundwater, groundwater takes must cease where there is no appropriate stream flow maintenance scheme, or a water user does not participate in a stream flow maintenance scheme.[4]

The flow maintenance trigger is the flow which stream flow maintenance schemes must maintain for participating water users to continue taking water.

The allocation limits do not apply to water abstraction that is enabled by the release of water taken at times of high flow and stored for later release but otherwise apply all year

The location and spatial extent of the water quantity areas are shown on Schedule 30 Maps 1 - 5.

Water Quantity Area (and includes any tributaries of the named river)	Water bodies (includes sub area)	Flow management site	Minimum Flow (litres/second)	Flow maintenance trigger (litres/second)	Allocation limit (litres/second for surface water and Zone 1 Groundwater; and cubic metres³/per year for groundwater)
Ahuriri	All surface water	n/a	n/a	n/a	0 Existing use only
	All groundwater	n/a	n/a	n/a	Existing use only[1]
Karamū/ Clive River s/w and g/w	AwanuiKarewarewa-Paritua Stream s/w	The Flume	120	120	Total not to exceed 30 l/s
		Pakipaki		75	
	Irongate Stream s/w	Clarks Weir[2]	100	100	
	Louisa Stream s/w	Te Aute Rd	30	30	
	Mangateretere Stream s/w	Napier Rd	100	100	
	Karamū River s/w	Floodgates	1100	1100	
	Raupare Stream s/w	Ormond Rd	300	300	70 l/sec
	Poukawa incl Lake Poukawa Groundwater	n/a	n/a	n/a	Existing use only[1]
	Poukawa incl Lake Poukawa Surface water	At Douglas Rd[2]	20	n/a	Existing use only[1]
Ngaruroro River s/w and g/w	Maraekakaho River s/w	Tait Rd	109	n/a	36 l/sec
	Tūtaekurī -Waimate Stream s/w	Goods Bridge	1200	n/a	607 l/sec
	Ngaruroro River (surface and Zone 1 Groundwater)	Fernhill[2]	2400		1300 l/sec
	Ngaruroro Groundwater	N/a	n/a	n/a	Existing use only[1]

[4] Zone 1 is as shown on TANK planning maps "Schedule 30 Map 1" and "Schedule 30 map 3". Property-specific depictions of those maps are available on the Council's GIS system.

Water Quantity Area (and includes any tributaries of the named river)	Water bodies (includes sub area)	Flow management site	Minimum Flow (litres/second)	Flow maintenance trigger (litres/second)	Allocation limit (litres/second for surface water and Zone 1 Groundwater; and cubic metres^3/per year for groundwater)
Tūtaekurī River s/w and g/w	Mangatutu Stream s/w	Puketapu	3800		120 l/sec
	Mangaone River s/w	Puketapu	2500		140 l/sec
	Tūtaekurī (surface plus Zone 1 Groundwater)	Puketapu	2500		1140 l/sec
	Tūtaekurī groundwater	n/a	n/a		Existing use only[1]
Heretaunga Plains Groundwater Quantity Area	Heretaunga Plains groundwater	n/a	n/a		Existing use only[1]

~~Note 1: Allocation limit is the total amount allocated to consents granted prior to 2 May 2020 or a lesser amount where water is allocated subject to Actual and Reasonable use~~

Note 1: Allocation limit is the lesser of:

a) the total amount allocated to consents granted prior to 2 May 2020, or

b) the amount where water is allocated subject to Actual and Reasonable use once consents have been renewed.

Schedule 31: High Flow Allocation

Refer to Rules TANK 13-18. This Schedule specifies the amount of water that may be authorised for abstraction from the specified water management units and the flows at which water abstraction is subject to restrictions or requirements. They apply to water abstraction that is enabled by the damming and release of water taken or dammed at times of high flow and stored for later release.

(a) River Name	(B) Flow Manage-ment Site	(C) Flow Trigger	(D) High Flow Allocation	(E) Amount reserved to give effect to Policy 57	(F) Limits for Damming
Ngarururoro	Fernhill	20 m^3/sec	8,000litres per second* This includes; the 2 m^3/sec allocation allocated in consents existing at 2 May 2020: • the amount taken from high flow in any tributary of the Ngarururoro • the amount specified in column (E)	1,200 litres per second	Damming on mainstem of Ngarururoro River is prohibited
		All Trigger flows above 5000 l/sec	Abstraction of up to 1 m^3/sec authorised in consents existing as at 2 May 2020. Included in the 1m^3/sec is abstraction of up to 400l/sec which is solely available to be discharged into the Paritua Stream to provide for stream enhancement		n/a
		Trigger flows above 2400l/sec	200 l/sec which is solely available to be discharged into the Paritua Stream to provide for stream enhancement.		
Ngarururoro and Tūtaekurī Tributaries		Median flow	The high flow allocation from the tributary is proportional to its contribution to the mainstem. It is part of the total allocation for the mainstem high flow allocation	20% of any high flow allocation from any tributary	No change of more than 10% to FRE_3 in the mainstem of the applicable River. Damming on the mainstem of the Taruarau Omahaki, Mangaone and Mangatutu is prohibited
Tūtaekurī	Puketapu	8,000 litres per second	2,500 litres per second This includes: • the amount taken from high flow in • any tributary of the Tūtaekurī • the amount specified in column (E).	500 litres per second	Damming on the mainstem of the Tūtaekurī River is prohibited

Schedule 32: Water Permit Expiry Dates

Refer to POL TANK 46 and Rules TANK 8 - 11. The Council will consider the following Schedule when determining the duration of any permit to take and use water.

Where appropriate, the duration of the consent will be consistent with the next common expiry date for the relevant water management as shown in this Schedule. If an application is made up to three years before the next due date for the relevant zone, the Council may issue the permit for the following expiry date.

For applications in an area for which no expiry date is specified, the duration of the consent will be a matter for Council's discretion.

Current common expiry date	Management Area	Next common expiry dates	
		1st due date	2nd due date
Groundwater (Heretaunga Plains Groundwater Quantity Area)			
2018 + 2019	Poraiti	2033	2047
2028 + 2029		2047	2059
2019 + 2018	Ahuriri	2033	2048
2019	Unconfined Aquifer & Unconfined part of Twyford	2035	2050
2020	Twyford Confined	2035	2050
2021	St George	2036	2051
2022	Te Mata	2037	2052
2023	Longlands/Pakipaki, Hastings	2038	2053
2024	Haumoana, Whakatu/Clive,	2039	2054
2024	Twyford	2040	2055
2025		2040	2055
2025	Pakowhai, Omarunui,	2040	2055
2026	Moteo	2041	2056
2027	Napier/Meeanee	2042	2057
2023	Karamū Catchment	2040	2058
2028		2043	2058
Groundwater (not including Zone 1 Groundwater or Heretaunga Plains Groundwater Quantity Area)			
2019	Ahuriri	2039	2059
2029		2044	2059
2023	Karamū Catchment	2040	2058
2028		2043	2058
2028	Tūtaekurī Catchment	2043	2058
2025	Ngaruroro Catchment	2040	2055
Surface Water (including Zone 1 Groundwater)			
2023	Karamū (and all tribs except Raupare)	2040	2058
2028		2043	2058
2025	Raupare	2040	2055
2026	Tūtaekurī-Waimate	2041	2056
2028	Tūtaekurī (Whole Catchment)	2043	2058
2025	Ngaruroro (Whole Catchment)	2040	2055
2019	Ahuriri	2039	2059
2028		2043	2059

Schedule 33: Stormwater Management

Section A: Stormwater Management Plan

Refer to Rules TANK 23 - 25. A Stormwater Management Plan (SMP) is required to outline the methods by which the site manager or owner will address the risk posed by usage and storage of contaminants of concern associated with the industrial or retail activity. The SMP will specifically include the following information as a minimum:

1. Name and description of Company and location of site

Full description of the entity and the physical location of the site.

2. Site activities and stores

What activities are on site? What facilities are on site? Attach maps/diagrams if necessary.

3 Site layout and drainage plan(s)

Written summary and maps and plans. Boundaries, location of proposed activities and location of water features on property (streams, drains, ponds etc.).

4 Site receiving environments

Insert information about the discharge areas into receiving environments and attach maps/plans if necessary.

5 Identification of risks with the activities on the property and how they will be managed

Descriptions of:
Management of contaminants of concern: how the consent holder will ensure contaminants of concern and hazardous substances are not discharged

Methods of protecting and where possible improving receiving water quality environments

Source control: methods of good site management, including contingency measures in event of a spill or hazardous event.

6 Management of stormwater treatment devices

Insert full descriptions of all your stormwater treatment devices and reasoning for use. If you need to install devices but have not yet done so explain here including the timeframe for doing so.

7 Maintenance programme

Written summary of how stormwater devices will be monitored over time.

Section B: Integrated Catchment Management Plan

Refer to Rule TANK 23. An application for resource consent for network discharges must include an integrated catchment management plan that includes:

1. A monitoring programme to assess existing stormwater discharge quality and level of impact on receiving water quality standards

2. Identification of the spatial extent of the stormwater network to which the application for consent relates

3. Identification of the priority streams or catchments where stormwater discharges currently result in receiving water quality below the standards specified in Schedule 26

4. A programme of mitigation measures including timeframes and milestones for the enhancement of streams identified in (3)

5. Identification of any industrial or trade sites, that use, store or produce the discharge of any contaminant of concern (as defined in Table 3.1 of Hawke's Bay Waterway Guidelines Industrial Stormwater Design)

6. Identification of sites within catchments that have a high risk of contaminants entering the stormwater network or land where it might enter surface or groundwater, including industrial and trade premises and areas subject to new urban development

7. For sites identified in (6), a programme to ensure Urban Site Specific Stormwater Management Plans are prepared and implemented so that stormwater quality risks are managed. (Schedule 33 Section A)

8. Identification of areas at risk of flooding, and where levels of service to protect communities from flooding are not being met provide information about how this will be managed

9. The potential effects of climate change on infrastructure capacity and a description of any planned mitigation measures including the identification of secondary flow paths and the capacity of the receiving environment

10. Identification of measures to demonstrate how discharges shall not cause scouring or erosion of land or any water course beyond the point of discharge

11. Where the stormwater network (or part thereof) or discharge locations are situated within a Source Protection Zone of a registered drinking water supply, a description of measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or any increase in the risk of unsafe drinking water being provided to persons and communities from the drinking water supply

12. Description of measures to demonstrate how the discharge shall not contain hazardous substances or contaminants (including wastewater) and shall not cause any of the following to occur after reasonable mixing:
    i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials
    ii. any emission of objectionable odour
    iii. Any conspicuous change in colour or visual clarity of the receiving water
    iv. any freshwater becoming unsuitable for consumption by farm animals
    v. the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water.

Schedule 34: Source Protection for Drinking Water Supplies

Refer to POLs TANK 7 – 9 and Rules TANK 2-25 and RRMP Rules 1 – 4, 12 -15, 37, 62, 62B. The location and details of groundwater wells (including water infiltration galleries) and surface water intakes used as the source of a Registered Drinking Water Supply can be found on the Registered Drinking Water Supply Protection Zone map layers on the HBRC website. For the avoidance of doubt, the term "Source Protection Zone" or "SPZ" in this Plan includes provisional SPZs and SPZs defined in accordance with this Schedule.

Source Protection Zones

Existing Registered Drinking Water Supplies that provide drinking water to no fewer than 501 people for not less than 60 days per year will have provisional Source Protection Zones determined according to the provisions of Table 1 until the relevant resource consent requires replacement or until an application for resource consent to amend a Source Protection Zone is made. The maps showing the spatial extent of these areas are shown on Schedule 34 Maps 1 - 2.

Table 1: Method for calculating provisional SPZ

Registered Drinking Water supply	Method for calculating SPZ
Hastings District Council Municipal Supply	Hawke's Bay Regional Council Heretaunga Plains Groundwater Model
Napier City Council Municipal Supply	Analytical Element Model meeting artesian head criterion

Where the holder of a water permit for an existing Registered Drinking Water Supply considers the Source Protection Zone is not adequate for the level of protection required for that supply or where new information significantly amends the modelling output, an application may be made to amend the resource consent conditions of the water permit and establish an amended Source Protection Zone

The dimensions of a Source Protection Zone shall form part of any application for resource consent to take or use water for a new Registered Drinking Water Supply or the replacement of an existing permit for that purpose.

The location and extent of a Source Protection Zone around a Registered Drinking Water Supply are to be determined using appropriate technical guidance provided by any relevant National Environmental Standard, National Policy Statement or technical guidance document endorsed by the Ministry for the Environment using site specific information listed in Table 2 below and according to the minimum requirements for the relevant population in Table 3.

Table 2: Site Specific Information

Site Specific Information
1. the topography, geography and geology of the site;
2. the depth of the well;
3. the construction of the well;
4. pumping rates;
5. the type of aquifer;
6. the rate of flow in the surface waterbody;
7. the types of actual or potential contaminants;
8. the level of treatment that the abstracted water will receive;
9. any potential risk to water quality

Table 3: Methodology for Determining Source Protection

Population served class	Microbial Treatment?	Meets Artesian Head criterion	Method	Uncertainty assessment approach
25 – 100	Yes	Yes or No	Manual	None
	No	Yes	Manual	None
	No	No	Manual	Sensitivity analysis
100-500	Yes	Yes	Manual	None
	Yes	No	Manual	Sensitivity analysis
	No	Yes	Manual	Sensitivity analysis
	No	No	Analytical Element Model	Sensitivity analysis

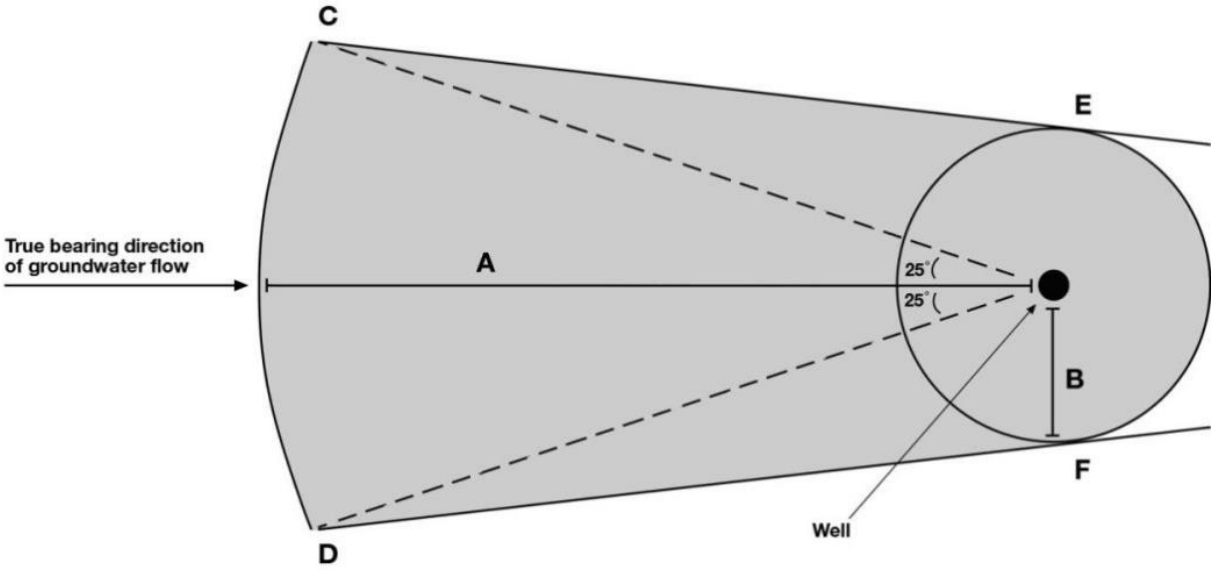
Population served class	Microbial Treatment?	Meets Artesian Head criterion	Method	Uncertainty assessment approach
501-5,000	Yes	Yes	Manual	Sensitivity analysis
	Yes	No	Analytical Element Model	Sensitivity analysis
	No	Yes	Analytical Element Model	Sensitivity analysis
	No	No	Analytical Element Model	Stochastic Uncertainty Analysis
>5000	Yes	Yes	Analytical Element Model	Stochastic Uncertainty Analysis
	Yes	No	Numerical Model	Sensitivity analysis
	No	Yes	Numerical Model	Sensitivity analysis
	No	No	Numerical Model	Stochastic Uncertainty Analysis

Source Protection Extent

Method for calculating the area of a provisional Registered Drinking Water Supply Protection Extent.

Existing groundwater Registered Drinking Water Supplies that provide drinking water to between 25 and 500 people for not less than 60 days per year will be protected for the distances specified in Figure 1 and Table 4 below. This provisional protection extent applies until the relevant resource consent requires replacement or until an application to amend the protection extent is made in accordance with the requirements of Tables 2 and 3.

Figure 1 Method for calculating the area of a provisional registered drinking water supply extent



The area of the source protection extent is determined by selecting from the Table 4 below depending on the screen depth (or well depth if no screen depth is recorded) and aquifer type.

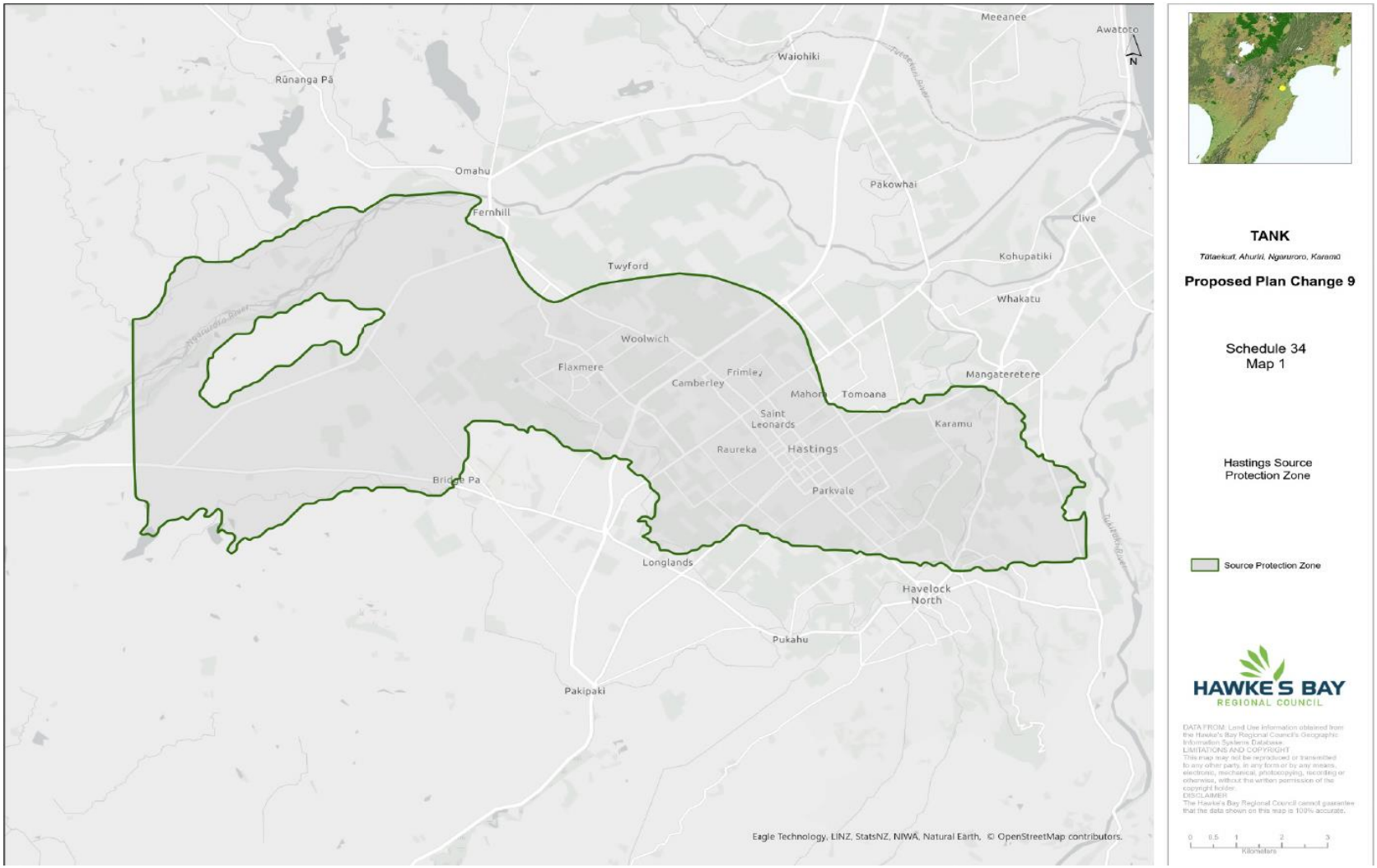
Table 4: Provisional Protection Extent

Screen Depth (or well depth if no screen depth is recorded	Aquifer Type	Protection Distances (m)	
		Up-gradient from bore (A)	Radius around bore
<10m	All	2,000	200
10 - <30 m	Unconfined or semi-confined	1,000	200
	Confined	100	100
30 – 70 m	Unconfined or semi-confined	500	200
	Confined	100	100
>70 m	Unconfined or semi-confined	100	100
	Confined	100	100

Public Information

All existing and new Registered Drinking Water Supplies and their Source Protection Zones or extent will be added to the Registered Drinking Water Supply Source Protection map layers on Hawke's Bay Regional Council GIS mapping website.

Schedule 34, Map 1



Freshwater Management Units Map