HAWKE'S BAY
REGIONAL COUNCIL

Proposed Plan Change 9

Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments

Hawke's Bay Regional Resource Management Plan

Decision Version

9 September 2022

This is the marked-up version the Hearing Panel's Decision on Proposed Plan Change 9 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments (PPC9) to the Hawke's Bay Regional Resource Management Plan.

Blue text with ~~strikethrough~~ (removed wording) and underline (new wording) show all changes made to the notified version of PPC9 by the Hearing Panel in their Decision.

Contents

Background deleted

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 – 3~~6~~5 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

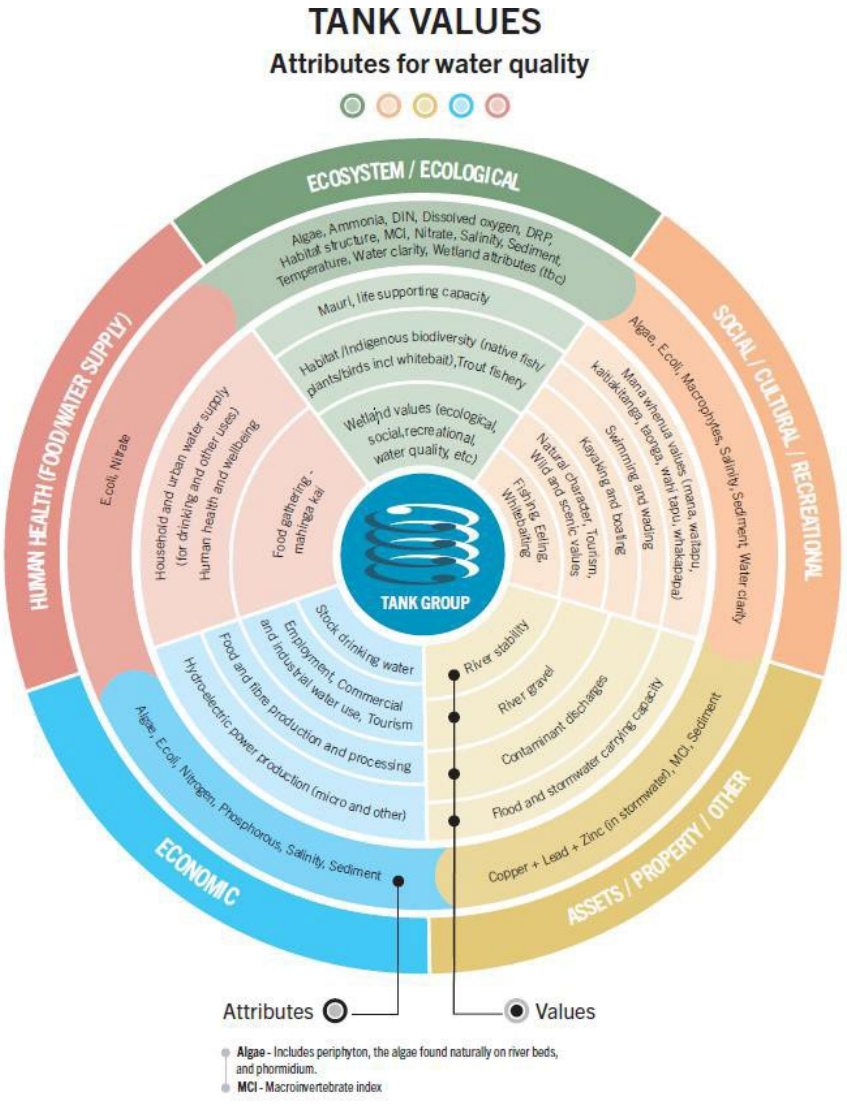
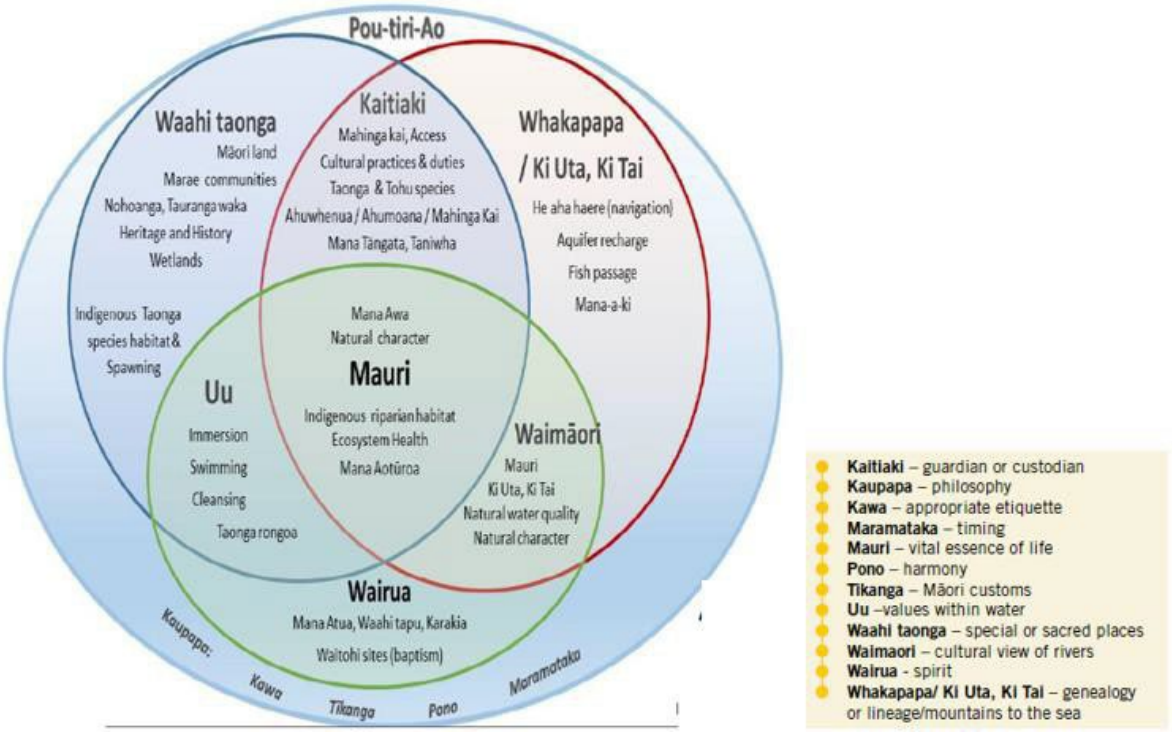


Figure 2: Wāriu (value) groups and aspects for management



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 ~~of kawa, Kaupapa and tikanga~~ that support Māori values for water ~~and its~~ management, and ensures the outcomes that are being sought are consistent with tikanga ~~those cultural principles and approaches~~.

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.

5.10.1 TANK Objectives

General Objectives

~~**OBJ TANK 1**~~ ~~Freshwater management in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments will be achieved by Tthe Council, tangata whenua and the urban and rural community working together in a way that: recognises the tangata whenua as kaitiaki and other resource users as guardians and the and guardianship roles they each play in freshwater management and;~~

~~a) recognises the importance of monitoring, resource investigations and the use of mātauranga Māori to inform decision making and limit setting for sustainable management;~~

~~b) ensures good land and water management practices are followed and where necessary, mitigation or restoration measures adopted; and~~

~~c) supports good decision making by resource users including rural and urban communities through marae and hapū initiatives, community or other catchment management programmes and monitoring initiatives, urban stormwater programmes, landowner collectives, farm management plans and industry good practice programmes.~~

OBJ TANK ~~2~~1 Land and freshwater in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments are sustainably managed as integrated natural resources so that: ~~When setting objectives, limits and targets;~~

a) Te Mana o te Wai and ~~integrated mountains to the sea the connection between freshwater, land and the coast~~, ki uta ki tai (mountains to the sea) principles ~~and the connection between surface water and groundwater~~ are upheld and recognised

b) the interconnectedness between land and water and between surface water and groundwater are recognised

c) ~~a continuous improvement approach to the use and development of natural resources and the protection of~~ indigenous biodiversity is protected ~~is adopted~~ and life-supporting capacity and the aquatic ecosystem processes are safeguarded ~~the collective management of sustainable freshwater is enabled~~

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 ~~tanga role~~ responsibilities of tangata whenua to land and freshwater ~~and their~~ ~~whakapapa~~ and cultural connection ~~with water~~ are recognised and provided for

f) tangata whenua are supported in carrying out cultural practices with respect to water management in their rohe.

~~d) the responsibilities of people and communities for sustainable resource use and development is recognised and supported; and~~

~~e) the significant values of wetlands, the outstanding water bodies in Schedule 25 and the values in the plan objectives are appropriately protected and provided for.~~

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 90 million cubic metres per year for takes of groundwater

d) Allocating water based on Actual and Reasonable use

e) Flow enhancement schemes.

Climate change

OBJ TANK 3 ~~The effects of c~~Climate change ~~are~~ is taken into account when ~~in respect of each of the following are taken into account in~~ making decisions about land and water management within the TANK catchments.

~~a) The effects on aquatic ecosystems, including indigenous biodiversity, freshwater bodies, water supply and human health, primary production and infrastructure from the predicted:~~
- ~~a. increases in intensity and frequency of rainfall;~~
- ~~b. effects of rainfall on erosion and sediment loss;~~
- ~~c. increases in sea level, and the effects of salt water intrusion;~~
- ~~d. increasing frequency of water shortages;~~
- ~~e. increasing variability in river flows;~~

~~b) The amount of information available and the scale and probability of adverse effects, particularly irreversible effects, as a consequence of acting or not acting;~~

~~c) The timeframes relevant to the activity;~~

~~d) Opportunities to improve community resilience for changes occurring as a result of (a)(i) to (iv).~~

i.

~~[1] From Objective AA and Policy AA in NPSFM 2017~~

Water Quality General

OBJ TANK 4 ~~Land and water use, contaminant discharge and nutrient loss activities are carried out so that t~~The quality of the TANK freshwater bodies is maintained where objectives are currently being met, or is improved in degraded waterbodies so that they meet ~~water quality~~ 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 ~~that~~ given in Schedule 26, the higher state is to be maintained~~; and~~

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. ~~Maintenance of a state is at the measured state[2].~~

~~**OBJ TANK 5** Te Mana o te Wai, the kaitiakitanga role of tangata whenua and the needs for the values set out in Schedule 26, particularly mauri and ecosystem health are achieved through collectively managing all of the specified attributes.~~

~~**OBJ TANK 6** The quality of the TANK freshwater bodies set out in Schedule 27 will be achieved through future plan changes.~~

~~**OBJ TANK 7** Land use is carried out in a manner that reduces contaminant loss including soil loss and consequential sedimentation in freshwater bodies, estuaries and coastal environment.~~

OBJ TANK ~~8~~5 Riparian margins are protected or improved where necessary to provide for aquatic ecosystem health and mauri of water bodies in the TANK catchment ~~is improved by appropriate management of riparian margins~~ 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 ~~9~~6 Activities in source protection areas for Registered Drinking Water Supplies ~~are managed to ensure that they~~ do not cause source water in these ~~zones~~ areas to become unsuitable for human consumption~~.~~, and that risks to the supply of safe drinking water are appropriately managed.

Catchment Objectives

OBJ TANK ~~10~~7 In combination with meeting the ~~water quality~~ target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the~~ **Ahuriri** ~~freshwater catchments so that~~ 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
b) healthy ecosystems ~~that contribute to the health of the estuary~~
c) healthy and diverse indigenous aquatic plant, fish and bird populations
d) people and communities to safely meet their domestic water needs
e) primary production water for community social and economic well-being; and provide for
f) 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.

~~[2] The state is as measured according to the method specified for each attribute. It does not allow for decline to a lower state within any band specified in the NPSFM:2014 (as amended 2017)~~

OBJ TANK ~~11~~8 In combination with meeting the ~~water quality~~ target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using, damming and diverting of freshwater is carried out in the~~ **Ngaruroro River catchment** ~~so that~~ 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 ~~12~~9 In combination with meeting the ~~water quality~~ target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the~~ **Tūtaekurī River** ~~catchment so that~~ 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 tributary
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 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 ~~13~~10 In combination with meeting the ~~water quality~~ target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the **Karamū and Clive Rivers** catchment so that~~ 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 patiki, 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 of ~~mahinga~~ 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 ~~mahinga~~ kai in the estuary.

OBJ TANK ~~14~~11 In combination with meeting the ~~water quality~~ target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking and using of freshwater is carried out so that~~ 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 ~~15~~12 ~~In combination with meeting the water quality states specified in Schedule 26, the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater connected to the~~ **Wetland and ~~lake~~ waahi taonga** within the TANK catchments are ~~is~~ managed so that mauri, water quality and flows, and levels are maintained and improved to enable:

a) healthy and diverse indigenous fish, bird and plant populations in wetland and lake areas and connected waterways
b) improved hydrological functioning in wetland and lakes and in connected waterways
c) people to safely carry out a wide range of social, recreational and cultural activities
d) ~~collection of~~ mahinga kai to provide for social and cultural well-being
e) contribution to improved water quality in connected surface waters
f) the protection of the outstanding values of those wetlands and lakes listed in Schedule 25 ~~the Kaweka Lakes, Lake Poukawa and Pekapeka Swamp and the Ngamatea East Swamp~~.

and to:

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

Water quantity

OBJ TANK ~~16~~13 ~~Subject to limits, targets and flow regimes established to meet the needs of the values for the water body, water quantity allocation management and processes ensure water allocation~~ Ground and surface water in the TANK Catchment is allocated, subject to limits, targets and flow regimes which provide for the values of each water body, in the following priority order:

a) ~~Water for t~~The ~~essential~~ reasonable domestic needs of people, livestock drinking and fire-fighting supply
b) ~~The allocation and reservation of water for e~~Existing and future demand for domestic supply including marae and papakāinga, and municipal uses ~~supply~~ as described in HPUDS (2017) ~~can be met within the specified limits~~
c) Primary production on versatile land ~~soils~~
d) Other primary production, food processing, industrial and commercial end uses
e) Other non-commercial end uses.

OBJ TANK ~~17~~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. ~~Allocation regimes that are flexible and responsive, allowing water users to make efficient use of this finite resource;~~

OBJ TANK ~~18~~15 The current and foreseeable water needs for mauri and ecosystem health and of future generations ~~and for mauri and ecosystem health~~ are secured through:

a) avoiding future over-allocation and phasing out existing over-allocation
b) ~~a)~~ water conservation, water use efficiency, and innovations in technology and management
c) ~~b)~~ flexible water allocation and management regimes
d) ~~c)~~ water reticulation
e) ~~d)~~ aquifer recharge and flow enhancement
f) ~~e)~~ water harvesting and storage.

5.10.2 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.

Priority Management Approach

POL TANK ~~1~~2 The Council will regulate land use activities and will work with ~~mana~~ tangata whenua, ~~with~~ landowners, local authorities, industry and community groups, ~~mana whenua~~ and other stakeholders ~~will regulate or~~ to manage land use activities ~~and surface and groundwater bodies~~ so that existing water quality is maintained in its current state or improved to meet ~~the 2040 target water quality attribute states described in Schedule 26 attributes are maintained at their current state or where required show an improving trend towards the water quality~~ target attribute states shown in Schedule 26 by focusing on:

a) water quality improvement in priority ~~sub-~~catchments (as described in Schedule 2~~7~~8) 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 ~~the~~ 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. ~~and municipal water supply~~.

POL TANK ~~2~~3 In the **Clive/Karamū Rivers** and their tributaries, in addition to ~~Policy~~ POL TANK 2 the Council will work with ~~mana~~ 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 ~~Policies~~ POLs TANK ~~28 - 31~~ 26 to 29).

POL TANK ~~3~~4 In **lakes and wetlands** in the TANK Catchments, in addition to ~~Policy~~ POL TANK 2 the Council will work at a catchment scale with land owners in the wetland or lake catchments (refer also to ~~Policies~~ POL TANK ~~23-25~~ 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 ~~water quality~~ target attribute states ~~objectives~~ in Schedule 26 for water bodies downstream of the lake or wetland
e) support and assist landowners to protect, increase or restore existing wetlands or create new wetlands including for the management of urban stormwater.

POL TANK 45 In the **lower Ngaruroro and Tūtaekurī Rivers** and their tributaries, in addition to ~~Policy~~ POL TANK 2~~1~~ 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 ~~5~~6 In the tributaries of **Te Whanganui ā Orotū (~~the~~ Ahuriri Estuary)**, in addition to ~~Policy~~ POL TANK 2~~1~~ the Council will support the development of an Integrated Catchment Management Plan and will work with ~~mana~~ tangata whenua, landowners and the Napier City Council to:

a) improve water clarity and reduce deposited sediment by reducinge 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.

Protection of Source Water

POL TANK ~~6~~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 ~~Policy~~ POL TANK 2~~1~~, 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 3~~4~~5
b) regulating activities within Source Protection Zones that may actually or potentially affect the quality 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 ~~7~~8 When considering applications to take water for a Registered Drinking Water Supply, the Council will:

a) require the determination ~~provide for the replacement or amendment~~ 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 3~~4~~5

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

Protection Zone planning map ~~provide for the amendment of a Source Protection Zone where new information changes the outputs from the method specified in Schedule 35~~

c) require applications to include an assessment of the Source Protection Zone or extent required, taking into account the factors set out in Schedule 3~~4~~5
d) have regard to:
    i. the extent to which the application reflects the factors and methodology in Schedule 3~~4~~5 when establishing the Source Protection Zone or extent
    ii. the impacts, including any costs and benefits, of any additional restrictions in the Source Protection Zone
    iii. the level of consultation with land owners and occupiers in the Source Protection Zone.

POL TANK ~~8~~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 ~~ensuring the water supplier is aware~~ 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 ~~regard to~~ 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 ~~9~~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 ~~Napier City Council, Hastings District Council, Hawke's Bay District Health Board and Drinking Water Assessors and~~ 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.

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

Managing point source discharges

POL TANK ~~10~~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 maintained or do not cause the 2040 target attribute states ~~objectives for water quality~~ in Schedule 26 to be exceeded and when considering applications to discharge contaminants will also take into account:

a) measurement uncertainties associated with variables such as location, flows, seasonal variation and climatic events
b) the degree to which a point source discharge is of a temporary nature, or is associated with necessary maintenance work
c) when it is an existing activity, identification of mitigation measures, where necessary, and timeframes for their adoption that contribute to the meeting of ~~water quality objectives~~ target attribute states
d) 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 ~~11~~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
f) enhances recreational activities
g) improves fish spawning habitat
h) assist in weed control.

POL TANK ~~12~~13 When making decisions about riparian land management in accordance with ~~Policy~~ POL TANK 12~~1~~, 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 ~~mahinga~~ kai, taonga raranga and taonga rongoa and the mauri of the river.

POL TANK ~~13~~14 The Council will support improvement of riparian management to meet the specified timeframes (in ~~Policy~~ POL TANK 2~~5~~7) consistent with ~~to provide for the values in Policies~~ POLs TANK 12~~1~~ and TANK 13~~2~~ 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 ~~values~~
c) regulating cultivation, ~~stock access~~ 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 ~~values~~ in ~~Policy~~ POLs TANK 12~~1~~ and TANK 13~~2~~ 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. the activity is not a requirement of any other resource consent.

Wetland and Lake Management

~~**POL TANK 14** The Council will regulate activities in and adjacent to wetlands and lakes and will support and encourage the maintenance and improvement of wetland values, including their value for:~~

~~a) biodiversity and as a habitat for indigenous flora and fauna species;~~
~~b) recreation (where appropriate);~~
~~c) cultural uses including for tikanga Māori and mahinga kai;~~
~~d) their role in the hydrological cycle, including their effects on both high and low flows;~~
~~e) enhancement of water quality in connected waterbodies;~~
~~f) fishery habitat.~~

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 ~~(a) – (f) in Policy 14~~ by working with ~~mana~~ tangata whenua, industry and community groups, land owners, 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~~5 Policy 14~~ as a result of the activity
   ii. consider whether to waive the fees and charges required to process ~~the~~ 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.

Microcoleus (Phormidium) Management

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

a) regular monitoring and reporting on the incidence of algae, including toxic microcoleus ~~phormidium~~ and nutrient concentrations and ratios of nutrients in freshwater related to microcoleus ~~phormidium~~ establishment
b) adopting applicable national guidelines for the monitoring and management of toxic algae
c) supporting national investigations into the incidence of toxic microcoleus ~~phormidium~~, the reasons for its establishment and measures to reduce the incidence
d) reducing nutrient and sediment inputs in accordance with ~~Policies~~ POLs TANK 17 and 19~~20~~

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.

5.10.3 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 ~~freshwater~~ target attribute states ~~or freshwater objectives~~ in Schedule 26 with landowners, industry groups, and other stakeholders and will implement the following measures:

a) establish programmes and processes through Freshwater ~~Environment~~ Farm Plans, Catchment Collectives and Industry Programmes to ensure land managers:
   i. adopt ~~industry~~ 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
   ~~iv. prepare nutrient management plans in catchments not meeting targets for dissolved nitrogen~~
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 ~~freshwater attribute~~ target attribute state ~~or freshwater objectives~~ 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 ~~Policy~~ 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 ~~where there is a~~ 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 ~~nutrient~~ 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 ~~nutrient~~ losses at a property as well as catchment scale including those delivered through industry programmes.

~~**POL TANK 19** In catchments that do not meet objectives for dissolved nutrients specified in Schedule 26, the Council will ensure landowners, landowner collectives and industry groups have nutrient management plans according to the priority order in Schedule 28.~~

Sediment Management

POL TANK ~~20~~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, ~~stock access~~ 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 2~~1~~0 The Council will regulate production land use change to manage the ~~remedy or mitigate~~ the potential impact of increases in diffuse discharges of nutrients ~~nitrogen~~ on freshwater quality objectives ~~by regulating land and water use changes that modelling indicates are likely to result in increased nitrogen loss (modelled on an annual, whole of property or whole of farm enterprise basis,)~~ and in making decisions on resource consent applications, the Council will take into account:

a) whether ~~freshwater quality objectives or~~ target attribute states are being met in the catchment where the activity is to be undertaken
b) where a~~ny~~ 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 the actual or potential contaminant loss occurring from the property, in combination with other nutrient ~~contamination~~ losses in the catchment will be consistent with meeting 2040 ~~freshwater quality objectives~~ 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 ~~nitrogen~~ loss that contributes to ~~water quality objectives and~~ target attribute states in Schedule 26 for DIN and DRP ~~dissolved nitrogen~~ not being met.

~~**Stock Exclusion**~~

~~**POL TANK 22 The Council will regulate the exclusion of cattle, deer and pigs from rivers, lakes and wetlands, and when considering an application for resource consent or when making decisions about stock exclusion in Industry or Catchment Collective Plans or when making decisions about Farm Environment Plan requirements to take into account the following matters:**~~
~~a) assessment of sources, scale and significance of adverse effects of sediment, phosphorus, nitrogen and bacterial inputs to the water body that could effectively or efficiently be reduced by stock exclusion, bridging or culverting;~~
~~b) identifying whether there are alternative measures to meet water quality outcomes and improve ecosystem health, including by managing bank erosion or reducing sediment losses to water in contributing areas, altering land uses, or providing reticulated water for stock;~~
~~c) whether stock exclusion is practicable in the circumstances including in relation to;~~
~~d) total costs of stock exclusion measures compared to expected water quality benefit; assessed in (a) and other possible adverse effects including stock welfare;~~
~~e)technical or practical challenges of any works required for stock exclusion to be effective;~~
~~f) potential costs and benefits provided by alternative measures compared to stock exclusion.~~

Industry Programmes and Catchment ~~Management~~ Collectives

POL TANK 2~~3~~1 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 ~~ensure any~~ relevant information or expertise for making sustainable land management decisions ~~is available~~ to farm operators ~~land managers~~
b) support local investigation and water monitoring programmes where information gaps exist
c) support development and use of ~~catchment scale~~ models that assist in identification and management of critical source areas
d) support collective ~~catchment~~ and farm scale decision making to meet target attribute states ~~freshwater objectives~~ and encourage local solutions and innovative and flexible responses to water quality issues
~~e) work with water permit holders to encourage and support establishment of catchment collectives that address both freshwater quality objectives and stream flow management through environmental management programmes as specified in Schedule 30 and Schedule 36 and within the timeframes specified in Schedule 28.~~

POL TANK 2~~4~~2 T he Council will continue to work with farm operators ~~landowners~~, industry groups and other stakeholders to manage land and water use activities so that they meet 2040 target attribute states ~~objectives~~ for freshwater/aquatic ecosystems by:

a) further supporting the development of **Industry Programmes** ~~that contribute to meeting applicable freshwater objectives and~~ that:
    i. identify practices that contribute to meeting applicable target attribute states ~~freshwater objectives~~
    ii. specify timeframes for completion or adoption of measures to reduce ~~mitigate~~ contaminant losses
    iii. ensure individual performance under an Industry Programme is ~~monitored~~ audited
    iv. provide annual reports to the Council on progressive implementation of measures identified in Industry Programme ~~s~~ Freshwater Farm Plans established under Schedule 2~~9~~30 and progress towards meeting applicable target attribute states ~~objectives for water quality~~
    v. promote adoption of good industry management practice
    vi. ensure that Industry Programmes are consistent with the requirements of Schedule 2~~9~~30
b) supporting farm operators ~~landowners~~ 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, ~~land managers,~~ 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 ~~freshwater objectives~~
    ii. specify timeframes for completion or adoption of measures to reduce ~~mitigate~~ 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 2~~9~~30 and progress towards meeting applicable target attribute states ~~objectives for water quality~~
    v. promote adoption of good management ~~agricultural~~ practice
    vi. ensure programmes prepared by a Catchment Collective are consistent with the requirements of Schedule 2~~9~~30
c) approving any ~~Landowner~~ Catchment Collective or Industry Programme developed under Schedule 2~~9~~30
d) requiring Auditing of Catchment ~~Landowner~~ Collective or Industry Programmes prepared and approved under Schedule 2~~9~~30 including auditing of member properties.

POL TANK 2~~5~~3 Where a farm operator ~~landowner~~ is not part of an Industry Programme or Catchment Collective, the Council will require development and implementation of a **Freshwater Farm ~~Environment~~ Plan** for the farm.

Management and compliance.

POL TANK 2~~6~~4 Where farm operators ~~individuals~~ 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~~30~~, 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~~n individual~~ 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 2~~7~~5 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 ~~land owners and lease holders~~ are engaged in industry or ~~landowner~~ Catchment Collective programmes or have prepared freshwater farm plans ~~farm environmental plans~~ within the timeframes in Schedule 2~~7~~8 and to ensure reporting (as specified in Schedule 29~~30~~) on the milestones in Table 1 below.

Table 1: Milestones and Timeframes

Action	Activity	Milestone	Output to be reported on
Stock and Riparian Land Management			
1: ~~Stock exclusion and~~ Rriparian planting	~~Stock excluded from rivers in flat and rolling hill country~~ Riparian margins planted	~~Stock excluded by 2023~~	~~Km of stream with stock exclusion~~
			Km of riparian margins planted
2: ~~Stock exclusion and~~ sediment mitigation	~~Stock access and~~ sediment mitigation in hill country managed through environmental programme or farm plan	According to priority set out in Schedule 2~~7~~9	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	100ha in 5 years and 200ha in ten years from operative date	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 2~~7~~8	Number of farms ~~properties~~ subject to nutrient plan

5.10.4 Policies: Stormwater Management

~~Urban~~ Stormwater Infrastructure

POL TANK ~~28~~6 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 ~~and~~ trade premises and associated infrastructure~~, will be reduced or mitigated no later than 1 January 2025~~, by addressing the following matters when considering applications to divert and discharge stormwater, by requiring:

a) measures to achieve the target attribute states in Schedule 26
b) ~~Local Authorities adopting~~ adoption of an integrated catchment management approach to the collection, treatment and discharge of stormwater
c) ~~requiring~~ 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) ~~requiring increased~~ retention or detention of stormwater where necessary, while not exacerbating flood hazards;
e) adoption of ~~adopting, where practicable,~~ 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) any potential adverse effects on significant and/or outstanding values of the receiving environment including estuaries, wetlands and any waterbody listed in Schedule 25
g) ~~taking into account~~ site specific constraints including areas with high groundwater and, source protection zones and extents~~, and/or an outstanding water body~~
h) ~~taking into account~~ impact of the activity on the joint ~~collaborative~~ approach of HBRC, Napier City and Hastings District councils to provide for integrated stormwater management. ~~in managing urban growth on the Heretaunga Plains as it relates to stormwater management~~
i) ~~taking into account~~ the effects of climate change when providing for new and upgrading existing infrastructure.
j) ~~adopting, where practicable, a good practice approach to stormwater management including adoption of Low Impact Design for stormwater systems;~~

~~1. i)amending district plans, standards, codes of practice and bylaws to specify design standards for stormwater reticulation and discharge facilities through consent conditions, 207.53, 63.35 that will achieve the freshwater objectives set out in this plan;~~
~~2. j) developing and making available to the public advice about good stormwater management options (including through HBRC's guidelines);~~
~~3. k) encouraging, through education and public awareness programmes, greater uptake and installation of measures that reduce risk of stormwater contamination;~~
~~4. l) requiring, no later than 1 January 2025, the preparation and implementation of a site management plan and good site management practices on industrial and or trade premises with a high risk of stormwater contamination and those in the high priority areas: 10.4~~
~~a. of the Ahuriri catchment;~~
~~b. of the Karamū River and its tributaries;~~
~~c. of land over the unconfined aquifer; and~~
~~d. within identified drinking water Source Protection Zones.~~

Source Control

POL TANK ~~29~~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 contaminants and debris to avoid these entering stormwater

c) controlling, and if necessary avoiding, activities that will result in water quality standards not being able to be met.

Dealing with the Legacy

POL TANK ~~30~~28 Aquatic ecosystem health improvements and community wellbeing and reduced stormwater contamination will be achieved by HBRC working with the Napier City and Hastings District Councils requiring discharges from stormwater networks to meet, after reasonable mixing:

~~a) water quality objectives (where they are degraded by stormwater) and the identification of measures that ensure stormwater discharges will achieve at least:~~

~~(i) the 80th percentile level of species protection in receiving waters by 1 January 2025; and~~

~~(ii) the 95th percentile level[3] of species protection by 31 December 2040.~~

~~and~~

a) ~~b) except as in (a) above,~~ the 2040 target attribute states ~~management objectives~~ in Schedule 26 for freshwater and estuary health through resource consent conditions, including requirements:
   i. to apply the Stream Ecological Valuation methodology 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. ~~(iii)~~for stream planting/re-alignment for aquatic ecosystem enhancement
   v. ~~(iv)~~for wetland creation, water sensitive design and other opportunities for increasing stormwater infiltration where appropriate
   vi. ~~(v)~~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: ~~after reasonable mixing~~
   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 ~~31~~29 To assist in achieving ~~achieve~~ the ~~freshwater quality objectives~~ 2040 target attribute states in ~~this Plan~~ Schedule 26, ~~HBRC~~ the Council in collaboration with the Napier City and Hastings District Councils will:

a) no later than 1 January 203025, implement similar stormwater performance standards and management including through the adoption of:
   ~~a) good practice engineering standards;~~
   ~~b) consistent plan rules and bylaws;~~[207.53, 63.35]
   ~~c) shared information and approaches to education and advocacy;~~
   i. shared information and processes for monitoring, compliance and auditing ~~individual site~~ management of ~~on~~ 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. align~~ed ing~~ resource consent processes including ~~and having~~ joint hearings where appropriate ~~to achieve integrated management of proposals for urban activities particularly in respect of~~

~~stormwater, water supply and wastewater provisions and implementation of the Heretaunga Plains Urban Development Strategy (2017).~~

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 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~~ing~~, through education and public awareness programmes, greater uptake and installation of measures that reduce risk of stormwater contamination.

[3] ~~ANZECC Guidelines 2018 (Australia and New Zealand Guidelines for Fresh and Marine Water Quality)~~

~~**Ahuriri Catchment**~~

~~**POL TANK 32** The Council will support the development of an Te Whanganui a Orotū (Ahuriri Estuary) Integrated Catchment Management Plan by;~~

~~a) improving the quality of freshwater entering the Te Whanganui a Orotū (Ahuriri Estuary) through the measures included in this plan; and~~

~~b) carrying out investigations to help better understand processes and functions occurring within the estuary and its connected freshwater bodies.~~

5.10.5 Policies: Monitoring and Review

POL TANK 3~~3~~0 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.

POL TANK 3~~3~~1 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 3~~3~~2 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 ~~Objectives~~ OBJ TANK 2 ~~and 3~~ 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 ~~Policy~~ POL TANK 25~~7~~, according to timeframes specified in Schedule 2~~78~~ 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 plan
f) the preparation of Freshwater Farm ~~Environment~~ 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.

~~And~~

i) ~~commence a review of these provisions within ten years of <operative date> in accordance with section 79 of the RMA.~~

5.10.6 Policies: Heretaunga Plains Groundwater Levels and Allocation Limits

Heretaunga Plains Aquifer Management

POL TANK 3~~6~~3 The Council recognises the actual and potential adverse effects of groundwater abstraction in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~ on:

a) groundwater levels ~~and aquifer depletion~~
b) flows in connected surface waterbodies
c) flows of the Ngaruroro River
d) groundwater quality through risks of sea water intrusion ~~and water abstraction~~
e) tikanga and mātauranga Māori

and will:

f) adopt a staged approach to groundwater management that includes:
   i. avoiding further adverse effects by not ~~allowing~~ granting new consents to take and use groundwater ~~new water use~~ except as provided for by POL TANK 48
   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 3~~7~~4 In managing the allocation and use of groundwater in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~, the Council will:

a) adopt an interim allocation limit of 90 million cubic metres per year based on ~~the~~ Aactual and R~~r~~easonable water use ~~prior to 2017~~

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 ~~Water Management Unit~~ 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 ~~a~~Actual and ~~r~~Reasonable use ~~that reflects land use and water use authorised in the ten years up to August 2017~~ (except as provided by ~~Policy~~ 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 3~~8~~5 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 ~~Water Management Unit~~ 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 ~~applicable~~ permits not granted under the provisions of this Plan Change within ten years of <the operative date>. ~~whichever is the sooner~~.

Flow maintenance

POL TANK 3~~8~~6 ~~When assessing applications to take groundwater in the Heretaunga Plains Water Management Unit the Council will:~~

~~a) either;~~
~~(i) require abstraction to cease when an applicable stream flow maintenance scheme trigger is reached; or~~
~~(ii) enable consent applicants to develop or contribute to stream flow maintenance and habitat enhancement schemes that;~~
~~1. contribute flow to lowland rivers where groundwater abstraction is depleting stream flows; and~~
~~2. improve oxygen levels and reduce water temperatures;~~
~~b) assess the relative the contribution to stream depletion from groundwater takes and require stream depletion to be off set equitably by consent holders while providing for exceptions for the use of water for essential human health; and~~
~~c) enable permit holders to progressively and collectively through Water User Collectives develop and~~

~~implement flow maintenance and habitat enhancement schemes as water permits are replaced or reviewed, in the order consistent with water permit expiry dates.~~

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

a) consult with tangata whenua ~~iwi~~ 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 and
   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 ~~40~~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 ~~mana~~ tangata whenua.
~~e) and will;~~
   ~~(i) allow site to site transfer of water to enable the operation of a flow enhancement scheme;~~
   ~~(ii) enable water permit holders to work collectively to develop and operate stream flow maintenance and habitat enhancement schemes consistent with the requirements of Schedule 36~~

~~(iii) impose consent durations of 15 years that are consistent with the term for groundwater takes affected by stream flow maintenance requirements, except where stream flow maintenance is being provided by significant water storage infrastructure in which case consent duration is consistent with the scale of the infrastructure.~~

POL TANK ~~41~~38 The Council will ~~remedy~~ mitigate the stream depletion effects of groundwater takes in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~ on the Ngaruroro River, in consultation with ~~mana~~ 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, ~~to~~ 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, ~~to~~ reviewing alternative methods and examine the costs and benefits of those.

Groundwater management review

POL TANK ~~42~~39 After water has been re-allocated and consents reviewed in accordance with ~~Policies~~ POLs TANK 3~~46~~ - 3~~68~~, 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 ~~Water Management Unit~~ 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:
    i. the extent of any stream flow maintenance, augmentation, or ~~and~~[194.58] habitat enhancement schemes including in relation to
    ii. the length of stream subject to flow maintenance
    iii. the extent of habitat enhancement including length of riparian margin improvements, and new or improved wetlands
    iv. the magnitude and duration of stream flow maintenance scheme operation
    v. trends oxygen and temperature levels in affected streams.

and will:

d) in relation to plan objectives and adverse effects listed in ~~Policy~~ POL TANK 3~~46~~, 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
e) review the appropriateness of the allocation limit in relation to the freshwater objectives
f) 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 43, 52 and 49, when considering applications to take and use water.

~~For the **Ngaruroro River;**~~

~~g) maintaining the existing minimum flows for the Ngaruroro River and its tributaries;~~
~~h) reducing the effects of abstraction from the mainstem and connected groundwater in Zone 1 by reducing the allocation limit for consumptive use at times of low flow[129.3] for the Ngaruroro River;~~
~~i) establishing allocation limits for the river, connected groundwater in Zone 1 and tributaries to account for the cumulative effects of all abstraction and provide water for abstraction at a reasonable security reliability of supply;~~
~~j) establishing a limit for groundwater abstraction in the upper Ngaruroro Catchment based on existing actual and reasonable use until more information about the nature and extent of that resource is available.~~

~~For the **Tūtaekurī River;**~~

~~k) increasing the minimum flow for the Tūtaekurī River and the Mangaone tributary and maintaining the minimum flow for the Mangatutu tributary;~~
~~l) reducing the effects of abstraction from the mainstem and connected groundwater in Zone 1 by reducing the allocation limit for consumptive use at times of low flow[129.3] for the Tūtaekurī River;~~
~~m) establishing allocation limits for the river, connected groundwater in Zone 1 and tributaries to account for the cumulative effects of all abstraction and provide water for abstraction at a reasonable security reliability of supply;~~

n) ~~establishing a limit for groundwater abstraction in the upper Tūtaekurī Catchment based on existing actual and reasonable use until more information about the nature and extent of that resource is available.~~

~~For the **Karamū River**;~~

~~o) maintaining existing flow management regimes for the Karamū River and its tributaries and contributing lakes and wetlands affected by groundwater abstraction and surface water abstractions;~~
~~p) establishing allocation limits for all abstraction year round[129.4] for the river and tributaries to account for the cumulative effects of all abstraction and provide water for abstraction at a reasonable security reliability of supply.~~

~~For the **Ahuriri Catchment Freshwater Streams;**~~

~~q) establishing limits for ground and surface water abstraction based on existing actual and reasonable use until more information about the nature and extent of that resource is available.~~

Paritua~~/~~ and Karewarewa Streams

POL TANK 4~~4~~1 The Council ~~will~~ 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 ~~Water Management Unit~~, 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/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 ~~Policies~~

POL TANK 4~~5~~2 When assessing applications to take water the Council will:

a) provide that the taking and use ~~abstraction~~ of water that has been taken and impounded or stored at times of high flow ~~and stored~~ 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 ~~or where there are technical limitations to its installation~~

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 3~~0~~1

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 ~~Water Management Unit~~;

and:

(i) require contributions to an applicable lowland stream enhancement ~~programme~~ scheme at a rate equivalent to the stream depletion effect consistent with ~~Policy~~ POL TANK 36 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 4~~6~~3 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 ~~security~~ reliability of supply

b) ensuring water is allocated to meet Aactual and R~~r~~easonable ~~requirements~~ 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 4~~7~~4 When considering applications for resource consent, the Council will ensure water is allocated and used efficiently by:

a) ensuring that the ~~technical means of using~~ use of water is ~~are physically~~ efficient through:
   i. allocation of water for irrigation end-uses based on soil, climate and plant ~~crop~~ needs
   ii. requiring the adoption of good practice water use technology and processes that minimise the amount of water lost from the soil profile ~~wasted~~
   iii. the use of water meters
b) using the IRRICALC water demand model ~~if available for the land use being applied for (~~or ~~otherwise by~~ 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% ~~minimum water~~ application efficiency, ~~standard of 80%~~ and 95% reliability of supply ~~on a reliability standard that meets demand 95% of the time~~
d) requiring all non-irrigation water takes (except as provided by POL TANK ~~Policy~~ 4~~8~~50 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 ~~any~~ applicable industry codes of practice.

Water Use Change/Transfer

POL TANK 4~~8~~5 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, ~~to consider~~ 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) ~~declining applications~~ where the transfer is to another water quantity area ~~management zone~~ unless:
   i. new information provides more accurate specification of applicable ~~zone~~ 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 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
e) for a change of use from frost protection to any other end use.

~~a) effects on specified minimum flows and levels or other water users' access to water resulting from any changes to the rates or volume of take;~~
~~b) any alteration to the nature, scale and location of adverse effects on the water body values listed in Schedule 25 and in the objectives of this Plan;~~
~~c) effects of the alteration to 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;~~
~~d) except where a change of use and/or transfer is for the purpose of a flow enhancement or ecosystem~~

~~improvement scheme, declining applications to transfer water away from irrigation end uses in order to protect water availability for the irrigation of the versatile land of the Heretaunga Plains for primary production especially the production of food;~~

~~e) in Water Quality Management Units that are over-allocated, ensuring that transfers do not result in increased water use and to prevent the transfer of allocated but unused water;~~

~~f) declining applications for a change of use from frost protection to any other end use;~~

~~g) enabling the transfer of a point of take and change of water use to municipal water supplies, including for marae and papakāinga , (not including transfer to industrial uses above 15m3/day) from any other use for the efficient delivery of water supplies and to meet the communities' human health needs for water supply, subject to clause (b).~~

Water Allocation - Permit Duration

POL TANK 4~~9~~6 When considering ~~making decisions about~~ applications ~~for resource consent~~ to take and use water, the Council will set common expiry dates ~~for water permits to take water in each water management zone,~~ that enable~~s~~ 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) ~~efficacy of~~ 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 ~~Management Unit~~ 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 ~~consistent with the most recent HPUDS~~ and will impose consent review requirements that align with the expiry of all other consents in the applicable quantity area ~~management unit~~

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 ~~5~~047 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 ~~for the area~~ according to estimates provided by the HPUDS (2017) to 2045
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 ~~thorough HPUDS~~ 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 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 to be exceeded. When assessing and application the Council will take into account:

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

b) the extent to which demand can be met through other methods 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 ~~51~~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, ~~and~~ Hastings District Council~~s~~, Fire and Emergency New Zealand ~~NZ Fire Service~~, 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).~~except where water is subject to seasonal demand for primary production or processing.~~

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 ~~5~~20 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 ~~demonstrated actual and reasonable need~~ (except as provided for by POLs TANK ~~Policy 50~~ 48 and 49) 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 ~~industry~~ good management practice for efficiency of water use ~~gains to be made~~, including through altering the volume, rate or timing of the take, and ~~requesting~~ providing information to verify efficiency of water use relative to ~~industry~~ 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 ~~a~~Actual and ~~r~~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 group, 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 5~~3~~1 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 ~~Water Management Unit~~ 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~~s~~ 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) ~~c)~~taking into account any stream depletion effects of groundwater takes
e) ~~d)~~imposing limits in relation to minimum flows or groundwater levels
f) ~~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 5~~4~~2 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

~~c)~~
and consider whether there are practicable alternatives

and, except as prohibited by ~~Policy~~ POL TANK 5~~6~~8, 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.

Adverse Effects – Water Take and Storage

POL TANK 5~~5~~3 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, 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 storage structure
   vii. 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:

viii. the high flow take ceases when the river is at or below the median flow
ix. such high flow takes do not cumulatively exceed the specified allocation limits
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 5~~6~~4 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 ~~and other values in Schedule 25 or in relation to the objectives of this plan in affected water bodies~~

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 5~~7~~5 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 ~~Policy~~ POL TANK 5~~6~~4 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 5~~8~~6 The Council will protect the instream water values and uses identified in OBJs TANK ~~Objectives~~ 8~~1~~1 and 9~~1~~2 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 5~~9~~7 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 ~~by~~ 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 ~~mana~~ 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~~ and 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 ~~60~~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 ~~Production~~ Farm Land	Permitted	0
Rule TANK 2 Use of ~~Production~~ Farm Land	Controlled	0
~~Rule TANK 3 Stock Access~~	~~Permitted~~	
~~Rule TANK 4 Stock Access~~	~~Restricted Discretionary~~	
Rule TANK ~~X~~3 Use of Production Land	Permitted	0
Rule TANK ~~5~~4 Use of Production Land (land use change)	Controlled	0
Rule TANK ~~6~~5 Use of Production Land (land use change)	Restricted Discretionary	0
6.10.2 Take and Use of Water		
Rule TANK ~~7~~6 Take and use of surface water	Permitted	0
Rule TANK ~~8~~7 Take and use of groundwater	Permitted	0
Rule TANK ~~9~~8 Take and use groundwater (Heretaunga Plains)	Restricted Discretionary	0
Rule TANK ~~10~~9 Take and use ground or surface water	Restricted Discretionary	0
Rule TANK 1~~1~~0 Take and use water	Discretionary	0
Rule TANK 11~~A~~ Take and use water	Non-complying	0
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~~5a~~ Take and use water	Discretionary	0
Rule TANK 1~~6~~7 Take and use water (from an impoundment)	Non-complying	0
Rule TANK 1~~7~~8 Damming water	Prohibited	0
Rule TANK 1~~8~~9 Stream flow maintenance	Restricted Discretionary	0
Rule TANK 20 Stream flow maintenance	Discretionary	0
6.10.3 Discharge of Stormwater		
Rule TANK ~~19~~21 Stormwater	Permitted	0
Rule TANK 2~~0~~2 Stormwater	Restricted Discretionary	0
Rule TANK 2~~1~~3 Stormwater	Controlled	0
Rule TANK 2~~2~~4 Stormwater	Restricted Discretionary	0
Rule TANK 2~~3~~5 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 ~~Production~~ Farm Land	**The use of ~~production~~ 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 ~~on farm properties or farming enterprises in the TANK catchments that are greater than 10 hectares pursuant to~~**	**Permitted**	a) The farm ~~property or farming enterprise land area~~ has less than 75% plantation forest cover[4]4. b) Either: 1. The ~~owner or manager of the~~ farm operator ~~property or enterprise~~ is either a member of a TANK Industry Programme or a member of a TANK Catchment Collective within the timeframes specified in Schedule 2~~78~~ and accordance with the requirements of Schedule 2~~930~~ Or: 2. The farm operator ~~property or enterprise owner or manager of the property~~ shall prepare a Freshwater Farm ~~Environment~~ Plan in accordance with the requirements of Schedule 2~~930~~ and within the timeframes specified in Schedule 2~~78~~; and the Freshwater Farm ~~Environment~~ Plan is being implemented and: 1. the Council shall be provided with the Freshwater Farm ~~Environment~~ Plan upon request 2. information about the implementation of the mitigation measures identified for the ~~property~~ 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
	~~Section 9(2) RMA and associated non-point source discharges pursuant to Section 15 of the RMA~~				
TANK 2 **Use of ~~Production~~ Farm Land**	**The use of farm ~~production~~ 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 ~~on farm properties or farming enterprises that are greater than 10 hectares in the TANK catchments pursuant to~~**	**Controlled**	The activity does not meet the conditions ~~(b)~~ of Rule TANK 1.	1. The ~~freshwater water quality objectives and~~ 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	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
	~~Section 9(2) RMA~~ ~~and associated~~ 20 or more hectares of the farm is a combination of any 2 or more of the land uses described above			~~2. Nature and scale of actual and potential contamination loss from the property in relation to the objectives specified in~~ 3. Timeframes for any alternative mitigation measures 4. Duration of consent 5. Lapsing of consent 6. Review of consent conditions 7. 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~~	
~~TANK 3 Stock Access~~	~~Stock Access to rivers, lakes and wetlands~~	~~Permitted~~	~~The entry into or over the bed of any river lake or wetland by cattle, deer and pigs is a permitted activity provided that;~~ ~~stock are at a stocking rate less than 18su/ha in the paddock adjacent to the river the stock have access to; and~~ ~~The slope over 60% or more of the paddock is greater than 15 degrees of slope.~~ ~~(b) Rivers that are crossed by formed stock races are bridged or culverted by 31 May 2023.~~ ~~(c)~~ The entry into or over the bed of any river, lake or ~~wetland by cattle, deer and pigs **not** permitted by condition is a permitted activity until 31 May 2023.~~ ~~(d) For rivers, conditions (a) to (c) apply only to rivers with an active formed channel.~~		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
~~TANK 4 Stock Access~~	~~Stock Access to rivers lakes and wetlands~~	~~Restricted Discretionary~~	~~The activity does not meet any one of the conditions (a) – (d) of Rule TANK 3.~~	~~An assessment of sources, scale and significance of adverse effects of sediment, phosphorus, nitrogen and bacterial inputs to the waterbody that could be effectively or efficiently reduced by stock exclusion, bridging or culverting~~ ~~Alternative measures to meet water quality outcomes and improve ecosystem health, including by managing bank erosion or reducing sediment losses to water in contributing areas, altering land uses, or providing reticulated water for stock;~~ ~~Whether stock exclusion is practicable in the circumstances including in relation to;~~ ~~total costs of stock exclusion measures compared to expected water quality benefit as assessed in relation to matter 1 and other possible adverse effects including stock welfare~~ ~~technical or practical challenges of any works required for stock exclusion to be effective potential costs and benefits provided by alternative measures compared to stock exclusion~~ ~~Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply~~ ~~Timeframes for any alternative mitigation measures~~ ~~Duration of consent~~ ~~Lapsing of consent~~ ~~Review of consent conditions;~~ ~~The collection, recording, monitoring and provision of information concerning the exercising of the consent~~	

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 c) The 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.		
TANK ~~54~~ 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 ~~The changing of a use of production land on farm properties or farming enterprises that are greater than 10 hectares~~	Controlled	~~a) any change to production land use activity commencing after 2 May 2020 is over more than 10% of the property or farming enterprise area.~~ ~~b) The production land is subject to a catchment Collective Programme meeting the requirements of Schedule 30B by a TANK Catchment Collective which meets the requirements of Schedule 30A~~ ~~c) The Council may require information to be provided about production land use changes (note that the Schedule 30 requires collectives to record land use changes).~~ 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 ~~Overseer, or alternative~~ models approved by Council to demonstrate the change in land use activity will be consistent with the requirements of POL TANK 2~~01~~. 2. Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with POL TANK 59 3. The measures being undertaken by the ~~TANK Landowner~~ Catchment Collective ~~in undertaking measures~~ to meet the 2040 target attribute states ~~water quality objectives,~~ including measures required as a result of the proposed land use change. 4. Measures to be undertaken ~~on the property~~ which contribute to meeting~~, including how the effect of the new land use activity on contributing to~~ the 2040 target attribute states ~~water quality objectives is being collectively addressed~~ including by: a) Efficient use of nutrients and minimisation of nutrient losses b) Wetland management c) Riparian management	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
				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 7. Lapsing of consent 8. Review of consent conditions 9. The collection, recording, monitoring and provision of information including relevant ~~Overseer or alternative~~ model files. ~~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 ~~65~~ 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 ~~45~~. ~~b) Any change to a production land use activity over more than 10ha of the property or enterprise area commencing after 2 May 2020 that results in the annual nitrogen loss increasing by more than the applicable amount shown in Table 2 in Schedule 29.~~	1. Modelling using ~~Overseer, or alternative~~ models approved by Council to demonstrate the change in land use activity will be consistent with the requirements of ~~Policy~~ POL TANK 2~~0~~1~~.~~. 2. Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with POL TANK 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 ~~water quality limits and~~ 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,	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
				movement of soil into waterways, 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 ~~including Overseer or alternative model files~~.	

Water – Take and Use

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK ~~7~~6 **Surface Water take**	**The take and use of surface water in the TANK ~~w~~Water Quantity Areas ~~Management Zones~~ 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: Maraekakaho Water ~~Management Unit~~ Quantity Area~~s~~ Ahuriri Water ~~Management Unit~~ Quantity Area~~s~~ Awanui Stream Water Quantity Area ~~and its tributaries~~ Poukawa Water ~~Management Unit~~ Quantity Area~~s~~ Louisa Stream Water Quantity Area ~~and its tributaries~~ Paritua-Karewarewa Water Quantity Area.[132.21] b) The take ~~does~~ shall not exceed 5 cubic metres per day per ~~any one~~ property except: (i) Lawful ~~T~~takes existing as at 2 May 2020 may continue to take up to 20cubic metres per property per day ~~may continue to take up to 20 cubic metres per property per day and to meet the reasonable needs of animals for drinking water~~ (ii) New ~~T~~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 ~~T~~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 ~~does~~ 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 ~~8~~7 **Groundwater take**	**The take and use of groundwater in the TANK Water Quantity Areas ~~Management Zones~~ 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. ~~Freshwater Management Unit (quantity)~~ b) There is only one point of take per property and the take does not exceed 5 cubic metres per day except: i. Lawful ~~T~~takes existing as at 2 May 2020 may continue to take up to 20 cubic metres per property per day ~~may continue to take up to 20 cubic metres per property per day and to meet the reasonable needs of animals for drinking water~~ ii. New ~~T~~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 ~~T~~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 ~~not restricted~~ 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 ~~9~~8 **Groundwater Take – Heretaunga Plains**	**Replacement of an existing Resource Consent to ~~T~~take ~~of~~ and use water from the Heretaunga Plains Groundwater Quantity Area ~~Management Unit where Section 124 of the RMA applies~~** ~~(applies to existing consents)~~	**Restricted Discretionary**	a) The activity does not comply with the conditions of Rule TANK 7~~8~~. 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 ~~for irrigation~~, other than provided for under d), is the ~~a~~**Actual and rReasonable** amount. d) The quantity taken and used for municipal, community and papakāinga water supply is: i) the quantity specified on the permit being ~~renewed~~ replaced or ii) any lesser quantity applied for. e) ~~Other than as provided in (c) or (d) the quantity taken and used is the least of:~~ ~~the quantity specified on the permit due for renewal or~~	1. The extent to which the need for water has been demonstrated and is ~~a~~Actual and rReasonable 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. ~~2. The extent to which the application was subject to programmed or staged completion of authorised major infrastructure developments over time.~~	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
			~~any lesser quantity applied for~~ ~~the maximum annual water use in any one year within the 10 years preceding 1 August 2017 (including as demonstrated by accurate water meter records).~~ **Stream Flow Maintenance Scheme** f) The take is subject to a stream depletion calculation. ~~The water permit holder either:~~ i. ~~contributes to or develops an applicable stream maintenance and habitat enhancement scheme that complies with the requirements of Schedule 36 at a rate equivalent to the stream flow depletion (in l/sec) which will be calculated using the Stream Depletion Calculator and based on the allocated amount of water.~~ ~~or~~ ii. ~~The water take ceases when the flow in the affected stream fall below the specified trigger level in Schedule 31~~ g) ~~Any take authorised under clause (d) is not subject to conditions (f) in respect of that part of the total allocated amount used for essential human health.~~ **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 ~~45~~ or ~~56~~.	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 for the urban area provided in the HPUDS 2017. c) water demand based on residential and non-residential use including for schools, rest homes, ~~hospitals commercial and~~ industrial demand within the planned reticulation areas	

				d) any Source Protection Zone or extent (as specified in Schedule 345) and i. any proposed changes to provisional protection areas and 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).	

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				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 ~~S~~stream flow maintenance and habitat enhancement scheme, when applicable.	
TANK ~~10~~9 **Surface and groundwater water takes (abstraction at low flows)**	**Replacement of an existing Resource Consent ~~T~~to take and use water ~~where Section 124 applies (applies to existing consents)~~**	**Restricted Discretionary**	a) The take is not from the Heretaunga Plains Groundwater Quantity Areas ~~Management Unit (quantity)~~. b) The taking and use of water from surface or groundwater water bodies does not comply with conditions of Rules TANK 6~~7~~, or TANK 7~~8~~. 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 3~~0~~1, the higher flow will continue to apply. For all other takes, the flows specified in Schedule 3~~0~~1 apply. d) An application is either for the continuation of a water	1. The extent to which the need for water has been demonstrated and is ~~a~~Actual and ~~r~~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	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

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			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 ~~for irrigation~~, other than provided for by f), is the **Aa~~a~~ctual and R~~r~~easonable** amount. f) The quantity taken and used for municipal, community and papakāinga water supply is the quantity specified on the permit being replaced ~~renewed~~ or any lesser quantity applied for. g) ~~Other than as provided in (e) or (f), the quantity taken and used is the least of: the quantity specified on the permit due for renewal; or any lesser quantity applied for; the maximum annual water use in any one year within the 10 years preceding 2 May 2020 (including as demonstrated by accurate water meter records).~~ **Surface Water Quantity Area ~~Management (quantity)~~** h) Any take from groundwater in Zone 1 Groundwater authorised as at 2 May 2020 in any surface Water Quantity Area ~~Management Unit (quantity)~~ is subject to a stream depletion calculation. ~~Either:~~ i. ~~a restriction in water flow when the applicable minimum flow is reached in the relevant zone (as shown in Schedule 31);~~ ii. ~~Or~~ iii. ~~the take complies with conditions (f)~~ i) ~~and (g) of rule TANK 9 where there is an applicable scheme~~ **General Conditions** j) A water meter is installed k) Fish and eels are prevented from entering the reticulation system	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 3~~0~~1. 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: 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 for the urban area provided in the HPUDS 2017. iii) water demand based on residential	95B(10) of the RMA or upon review of a consent.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			l) Back flow of water or contaminants into any 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 45 or 56. **Means of Compliance for Condition (j)** 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.	and non-residential use including for schools, rest homes, ~~hospitals commercial~~ 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	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				the RMA). 15. For takes from Zone 1 Groundwater in the Ngaruroro and Tūtaekurī Water Quantity Areas ~~Management Zones~~ review of permit and new conditions to be imposed in respect of contribution to a Stream flow maintenance and habitat enhancement scheme, when applicable. ~~Contribution to services or works for the maintenance of river flows associated with groundwater abstraction and stream depletion in relation to takes subject to condition (h) provided in respect of the performance of conditions and administration charges (Section 108 of the RMA).~~	
TANK 1~~1~~0 **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~~9 or TANK ~~9~~10 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 ~~in the following Management Units (quantity);~~ ~~i. Ahuriri~~ ~~ii. Poukawa~~ ~~iii. Ngaruroro groundwater~~ ~~iv. Tūtaekurī groundwater~~ ~~v. Heretaunga Plains~~ or ii. The total amount taken, either by itself or in combination with other authorised takes in the same water quantity area ~~management unit~~ does not cause the total	~~Refer also to RRMP Rule 31, which is amended as part of this Plan Change and Rule TANK 18.~~	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			allocation limit in the relevant quantity area ~~management unit~~ as specified in Schedule 3~~0~~1 to be exceeded ~~except this clause does not apply to takes for:~~ except this clause does 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 ~~construction dewatering~~. 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.		
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 11 No application may be made for this activity.		

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
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 activity does not comply with the conditions of RRMP 67 and 68.~~ 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 3~~1~~2 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 3~~1~~2 where applicable.		
TANK 14 **Damming water**	**The erection or placement of any dam or weir or other barrier structure, ~~D~~damming of surface waters and discharge from dams except as prohibited by Rule TANK 1~~8~~7**	**Discretionary**	a) The activity does not comply with the conditions of RRMP 67 or RRMP 68. b) Except as prohibited by Rule TANK 1~~8~~7, the activity either on its own or in combination with other dam or discharge activities in the same water quantity area ~~management zone~~ does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 3~~1~~2.	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~~7. b) ~~The activity either on its own or in combination with other dam or discharge activities in the same water management zone does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 32~~ 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	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
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 1~~6~~7	**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, t~~T~~he activity does not comply with the conditions of Rules TANK 13- 15.		
TANK 1~~7~~8 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 1~~8~~9 Stream Flow Maintenance and Habitat Enhancement Scheme	**Transfer and Discharge of groundwater into surface water in the Heretaunga Plains Water Quantity Area ~~Management unit (quantity)~~**	**Restricted Discretionary**	a) ~~The transfer and discharge of water is managed according to the applicable requirements of Schedule 36~~ 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 POLs 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.	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
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 ~~19~~21 Small scale stormwater diversion and discharge ~~activities~~	The diversion and discharge of stormwater into water, or onto land where it may enter water ~~from any new or existing and lawfully established: any activity with less than 1000 m2 impervious area residential activities; non- industrial or trade premise; industrial or trade premise with less than 1,000 m2 of impervious areas; rural building.~~	Permitted	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 (iii) cause any permanent reduction in the ability of the receiving environment to convey flood flows (iv) contain hazardous substances or, be from a site used for the storage, use or transfer of hazardous substances (v) contain drainage from a stockyard (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 (vii) 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 (viii) cause to occur or contribute to the discharge of microbiological contaminants including sewage, blackwater, greywater or animal effluent. b) ~~The property cannot connect to a current or planned reticulated stormwater network.~~	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			c) The discharge is from a property that contains less than 1000m^2 of impervious area d) 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. e) 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 2~~0~~2 Small scale stormwater diversion and discharge ~~activities~~	**The diversion and discharge of stormwater into water, or onto land where it may enter water. ~~from any new or existing and lawfully established: any activity with less than 1000 m2 impervious area residential activities; non-industrial or trade premise; industrial or trade premise with less than 1,000 m2 of impervious areas; rural building.~~**	**Restricted Discretionary**	a) The activity does not comply with the conditions of Rule TANK 21~~19~~ b) the activity is not from an industrial or trade premise with less than 1000m^2 impervious area.	1. Location of the point of diversion and discharge including its catchment area. 2. Volume, rate, timing and duration of the discharge, in relation to a specified design rainfall event. 3. Effects of the activity on downstream flooding. 4. Contingency measures in the event of pipe capacity exceedance. 5. Actual or likely adverse effects on fisheries, wildlife, habitat or amenity values of any surface water body. 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 of potential effects of the activity on the target attribute states ~~water quality objectives~~ 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). 10. Compliance with any relevant industry codes of practice or guidelines 11. When required, 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. 13. A compliance monitoring programme. 14. Bonds or Administrative charges.

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 2~~1~~3 Stormwater ~~activities~~ 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 hazardous substances or, be from a site used for the storage, use or transfer of hazardous substances~~ v) Contain drainage from a stockyard vi) ~~Contain sewage, blackwater or greywater~~ Contain any direct connection from a sewage, blackwater or greywater system to the stormwater network vii) 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. ~~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 vi. ~~cause or contribute to the discharge of microbiological contaminants~~ exceedance of water quality targets for microbiological contamination	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 ~~water quality objectives~~ 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). ~~including for aquatic ecosystem health, mahinga kai, contact recreation and Māori customary use.~~ 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

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			~~including sewage, blackwater, greywater or animal effluent.~~ b) An application for resource consent must include an Integrated Catchment Management Plan in accordance with Schedule 33. ~~An application for resource consent must include an Integrated Catchment Management plan that includes:~~ ~~(i) A monitoring programme to assess existing stormwater discharge quality and level of impact on receiving water quality standards~~ ~~(ii) Identification of the spatial extent of the stormwater network to which the application for consent relates~~ ~~(iii) Identification of the priority streams or catchments where stormwater discharges currently result in receiving water quality below the standards specified in schedule 26~~ ~~(iv) A programme of mitigation measures including timeframes and milestones of streams identified in (b)(iii),~~ ~~(v) 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 the Hawke's Bay Waterway Guidelines Industrial Stormwater Design),~~ ~~(vi) Identification of sites within catchments that have a high risk of contaminants entering the stormwater network or land where it may enter surface or groundwater, including industrial and trade premises and trade premises and areas subject to new urban development.~~ ~~(vii) For sites identified in (b)(vi), a programme to ensure Urban Site Specific Stormwater Management Plans are prepared and implemented so that stormwater quality risks are managed. (Schedule 34)~~ ~~(viii) Identification of areas at risk of flooding, and where levels of service to protect communities form flooding are not being met~~	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			~~provide information about how this will be managed.~~ ~~(ix) The potential effects of climate change on infrastructure capacity and a description of any planned mitigation measures and including the identification of secondary flow paths and the capacity of the existing environment~~ ~~(x) Identification of measures to demonstrate how discharges shall not cause scouring or erosion of land or any water course beyond the point of discharge~~ ~~(xi) 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 the 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~~ ~~(xii) Descriptions 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 the 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.~~	

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
TANK 2~~2~~4 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 ~~with 1,000 m^2 or more of impervious areas~~**	**Restricted discretionary**	a) An application for resource consent must include a~~n~~ ~~Urban Site Specific~~ Stormwater Management Plan (Schedule 34) b) The diversion and discharge: (i) shall not cause permanent bed scouring or bank erosion of land or alter the natural course of any 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 ~~or for any site where there is the use, storage or transfer of petroleum hydrocarbons, there is an oil interceptor treatment device installed~~ c) 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 d) 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. ~~e) There is no reticulated stormwater network at the property boundary~~	1. The efficacy of the ~~Urban Site Specific~~ Stormwater Management Plan (Schedule 34) 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. 2. Water quality standards in the discharge in relation to any contaminants being used on site and specific methods for treating these. 3. 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 4. The characteristics of the proposed discharge and its effects on the receiving environment 5. Duration of the consent 6. Review of consent conditions 7. Compliance monitoring

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			e~~f~~) 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.	
TANK 2~~3~~5 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~~19~~ to TANK 24~~22~~	~~The Council may at any time, by written notice to the owner or occupier (following a reasonable period of consultation), review a consent in light of new information that has become available or any change in circumstances that has occurred, and vary any condition of consent as a consequence.~~

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 is created for the purpose of accessing underground water, oil or gas, or penetrates a confined aquifer, or in any way causes the release of water from a confined aquifer, or 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 ~~notification requirements to the~~ 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.	

Remove Rule 3 from PPC9 as not being amended.

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 .~~upon request~~**		

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
			i. the clearance of plantation forestry established prior to the date of this Plan becoming operative, or [32a] ii. 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 ~~Environment~~ or Catchment Collective Plan** **ii. where the clearance is necessary for construction of crossings or installation of a reticulated or network service.** **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 ~~Environment~~ 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.

[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.

[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.

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 **I**f 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 Tutaekuri 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 Catchments</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 catchments.** **g.** **10 years after the operative date of PC9, ~~After ten years after 2 May 2020~~ in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, 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
~~New RRMP rule 33A Drainage water~~	~~The diversion and discharge of land drainage water from an existing pumped drainage system (small scale)~~	~~Permitted~~	~~the discharge is in a Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments~~ ~~The pumped drainage system existed at 2 May 2020~~ ~~The land area being serviced by the drainage network is less than 10ha~~ ~~There shall be no increase in flooding on any property owned or occupied by another person, as a result of any discharge from the drainage activity.~~ ~~The discharge shall not cause any scouring or erosion of any land or any watercourse beyond the point of discharge.~~ ~~The activity shall not result in changes to water levels in any connected wetland~~ ~~The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3ºCelcius from normal seasonal water temperature fluctuations, after reasonable mixing.~~ ~~Any discharge of water arising from a drainage system shall be to the same catchment as that to which the water would naturally flow.~~ ~~After ten years after 2 May 2020 in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, 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~~		

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** ~~g. After ten years after 2 May 2020 in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units, dissolved nutrient and sediment concentrations in the discharge water are no more than in the receiving water at the point of discharge as measured by:~~ ~~i. DIN~~ ~~ii. DRP~~ ~~iii. suspended sediment.~~	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 catchments, monitoring water quality to categorise the nature and extent (concentration and loads) of contaminants in the drainage water.** ~~i. measures or methods required for meeting the receiving water quality standards.~~ ~~ii. Monitoring for water quality~~	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		

			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%.

6.6.5 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. <u>The transfer is not in any Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment</u>**	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
~~Insert new RRMP~~ Rule 62A~~a~~ Transfer of permits to take and use water	Permanent or temporary transfer of water in accordance with S136(2)(b)(i) of the RMA	Controlled	~~The transfer is not part of stream flow maintenance provided by Rule TANK 18~~ 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 any person or occupier of the site in respect of which the permit is granted, or~~ ii. To another person on another site iii. 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 ~~for groundwater takes in the Heretaunga Plains Water Management Unit (Quantity). the transfer is to any point downstream of any affected stream~~ and ii. the transfer is within the same Water Quantity Area ~~Freshwater Management Unit (Quantity)~~ d. The transfer of a groundwater take is to an existing bore for which pump tests are available and there is no ~~change to~~ 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 2~~89~~ f. All parties to the transfer shall have metering and reporting at any applicable recording and reporting level ~~except for temporary transfers of less than five days pre annum~~ g. In fully or over-allocated water quantity areas ~~management units~~, the transfer shall only be of that part of the permit for which there is ~~a~~Actual and ~~r~~Reasonable use	~~Insert new RRMP Rule 62a Transfer of permits to take and use water~~ 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.	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			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 subject to conditions and (f) ii. for transfers that enable the operation of a flow enhancement scheme (ref ~~Policy~~ POL TANK 36~~38~~) iii. the transfer enables efficient delivery of water supply to meet the communities' human health needs. Advisory Notes ~~Pursuant to s136(3) of the RMA, the transfer has no effect until written notice of the transfer is received by Hawke's Bay Regional Council. The HBRC will accept transfers via any website being managed for this purpose as satisfying this requirement~~[129.31] • 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~~ ~~and~~ 5~~6~~ or 19~~18~~ may be triggered as a result of a transfer activity.		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
~~Insert new r~~Rule 62B~~b~~ Transfer of permits to take and use water	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 62~~a~~A.		

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~~17~~, t~~T~~he 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. ~~This permitted activity does not apply to the erection of dams on the mainstem of any river where it is prohibited by Rule TANK 17~~	**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** ~~A~~ny 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. ~~**This rule does not apply to rivers in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments (refer Rules TANK 13 – 17)**~~	**Discretionary**			

Duplicate Rule 69 deleted.

Delete RRMP Rule 70 from PPC9 as no amendments have been made.

[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 **except** **that this provision does not apply to rivers** ~~**for riparian vegetation established to provide shade**~~ **in the Karamū catchments.** • 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]	The introduction or planting of any plant including any tree in or on the bed of a river, lake or artificial watercourse or within 6 metres of the bed of any river within the Heretaunga Plains Flood Control and Drainage Scheme.	**Permitted**	a. The planting complies with the planting design, including species, setbacks and density requirements specified in Hawke's Bay Regional Council's Water Way Planting Guide for the Heretaunga Plains Flood Control and Drainage Scheme (date)		

[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~~27
- Schedule ~~29~~28
- Schedule ~~30~~29
- Schedule ~~31~~30
- Schedule ~~32~~31
- Schedule ~~33~~32
- Schedule ~~34~~ 33
- Schedule ~~35~~ 34
- ~~Schedule 36~~

~~*Schedules attached separately.*~~

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 ~~1 August 2017 for groundwater takes in the Heretaunga Plains Water Management Unit or in the preceding ten years preceding the 2 May 2020 as applicable elsewhere~~ 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 ~~Management Unit~~, is not more than the amount irrigated in the ten years preceding 2 May 2020 ~~1 August 2017~~ 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.

~~**Affected stream** is one which the Stream Depletion Calculator identifies the greatest magnitude of stream depletion caused by that take (a take may cause stream depletion in more than one stream). The stream with the largest effect is the "affected stream".~~

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 ~~sum of weekly maximum water permit allocations for a river, or management zone averaged over one month and includes abstraction in Zone 1~~.

Allocation limit for ~~G~~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 ~~Management Unit~~ 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 ~~and abstracted~~ 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.

~~**Applicable stream flow maintenance scheme** is a stream flow maintenance scheme developed to maintain river flows in an affected stream when the trigger flow is reached. If no scheme is feasible, then there is no applicable scheme.~~

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.

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). ~~(Note this is from MfE Guidance being the sum of Drinking 2 l/p/d, Cooking and Food 3 l/p/d, Toilet flushing 80 l/p/d, Bathing and Showering 100l/sec, 23% of washing needs 15 l/p/day, Total 200l/p/d).~~

Freshwater Farm ~~Environment~~ Plan means a plan that has been prepared in accordance with the requirements of Schedule 29~~30C by a person with the professional qualifications necessary to prepare such a plan~~ 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 made under section 217M(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.

~~**Farming Enterprise** – as defined in the RMMP but to include Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments~~.

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 ~~the frequency of floods that are~~ 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~~35.~~

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 ~~can only be~~ 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 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 ~~that~~ have traditionally been sourced ~~used as food, tools, or other resources~~. Mahinga kai provide food for the people of the rohe and the~~se~~ 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 ~~present (intergenerational harvest)~~. 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 ~~aboriginal~~ people of New Zealand ~~that migrated from Hawaiki in successive waves of migration settling throughout the Pacific.~~

Marae ~~A marae is a fenced-in complex of carved buildings and grounds that belongs to a particular iwi (tribe), hapū (sub-tribe) or whānau (family). Māori people see their marae as tūrangawaewae - their place to stand and belong. Marae are places of refuge for Māori and provide facilities to enable Māori to continue with our own way of life within the total structure of their own terms and values. The marae is an institution from classical Māori society that has survived the impact of western civilisation.~~ 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** ~~means cultural knowledge of the natural world.~~

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. ~~is a spiritual value that expresses itself within the natural world in a particular manner.~~ 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 ~~means a~~ groups of three or more houses ~~house~~ usually ~~of three or more,~~ developed on multiple owned Māaori land ~~that has multiple owners~~.

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

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 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~~35~~ (information about the location of SPZs can be found on the Council's webpage).

Source Protection Extent 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~~35~~ (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~~30~~ Section A and which has a Catchment Collective or Industry Programme that has been prepared in accordance with the requirements of Schedule 29~~30~~ Section B by a person with the professional qualifications necessary to prepare such a Programme.

Waka ama ~~is a New Zealand term for~~ the Pacific outrigger canoeing traditional sport ~~used in the Pacific of outrigger canoeing~~.

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
~~**Tutaekuri River upstream of Redclyffe Bridge**~~	~~**50**~~	~~**10**~~
~~**Tutaekuri River between Redclyffe Bridge and SH50**~~	~~**100**~~	~~**25**~~
~~**Tutaekuri 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.

Remove POL 72A from PPC9 and associated footnote #54.

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.

~~54 NOTE 1: Policy 72A applies to the following discharges (including a diffuse discharge by any person or animal):~~

~~(a) a new discharge or~~
~~(b) a change or increase in any discharge –~~

~~of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.~~

~~NOTE 2: Pol 72A(1) does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.~~

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
~~Tutaekuri River~~	~~At Puketapu~~	~~2,000~~	~~928,972~~	~~V21:357812~~
~~Tutaekuri-Waimate~~	~~At Goods Bridge~~	~~1,200~~	~~367,114~~	~~V21:384751~~
Waimaunu Stream	At Duncans	10	15,304	X19:229300

Remove POL 74A from PPC9.

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

Remove RRMP POL 78A from PPC9.

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 blue text with new insertions underlined and with deletions shown as ~~strikethrough~~.

Insert in 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.

Schedule 26:Freshwater Quality Objectives

Schedule~~s~~ 26 ~~and 27 are~~ is re-presented to align with the NOF framework in the NPS-FM.

Replace Schedules 26 and 27 with the following:

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 ~~Map~~ and Schedule 26~~.1 – 26.5 Planning~~ 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, Tutaekuri, Karamu 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 ~~Planning Map~~ Schedule 26~~.1~~ Map 1

Vision
<to be drafted through Kotahi Review process>

Outcomes
~~<~~This sits in the body of the plan. Refer to ~~relevant~~ TANK Objectives 9~~12~~ and 11~~14~~~~>~~

TABLE 26.1.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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)	Default	No/Insufficient data	< 0.05	< 0.05	**Blue:** (≤ 0.05) ~~Very low risk of algal growth.~~ **Green**: (≤ 0.05 and < 0.15) ~~Low risk of algal growth~~. **Yellow**: (≤ 0.15 and < 0.3) ~~*Moderate risk of algal growth*~~. **Red:** (> 0.3) ~~High risk of algal growth~~. **Light Green:** (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning.	Algal growth	• Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			Lawrence Hut	0.016	Maintain	Maintain			
		Main stem (Lower Tūtaekurī)	Default	No/Insufficient data	<0.15	<0.15			• Uu • Waimaori • 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
			u/s Mangaone River	0.182	<0.15	<0.15			
			Brookfields Bridge / Puketapu	0.172	<0.15	<0.15			
		Hill country tributaries	Default	No/Insufficient data	≤0.444 ~~< 0.3~~	≤0.444 ~~< 0.3~~			• Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			Mangatutu Stream	0.45	≤0.444 ~~< 0.3~~	≤0.444 ~~< 0.3~~			
			Mangaone River (Rissington)	0.326	≤0.444 ~~< 0.3~~	≤0.444 ~~< 0.3~~			
Ammonia (mg NH_4-N/L) NOF Table 5	Annual median Annual max Unionised ammonia based on pH at 20°C All flows	Headwaters	Default	No/Insufficient data	Median ≤ 0.03	Median ≤ 0.03	**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	• Waimaori • 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 ≤ 0.05	Max ≤ 0.05			
			Lawrence Hut	Med 0.002 A	Maintain	Maintain			
				Max 0.006 A					
		Main stem	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			u/s Mangaone River	Med 0.007 A	Maintain	Maintain			
				Max 0.017 A					
			Brookfields Bridge / Puketapu	Med 0.012 A					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				Max 0.024 A			Starts approaching acute impact level (that is, risk of death) for sensitive species.		
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Mangatutu Stream	Med 0.005 A	Maintain	Maintain			
				Max 0.043 A					
			Mangaone River (Rissington)	Med 0.006 A					
				Max 0.04 A					
Nitrate (mg NO_3-N/L) NOF Table 6	1. Annual median 2. Annual 95th percentile Hazen method All flows	Headwaters	Default	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A	**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	• Waimaori • 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 ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Lawrence Hut	Med 0.008 A	Maintain	Maintain			
				95th percentile 0.025 A					
		Main stem	Default	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			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					
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			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					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME 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	Default	No/Insufficient data	Median ≤ 0.006 A	Median ≤ 0.006 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 • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses
					95th percentile ≤ 0.21 A	95th percentile ≤ 0.21 A			
			Lawrence Hut	Med 0.004 A	Maintain	Maintain			
				95thpercentile0.006 A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
			u/s Mangaone River	Med 0.014 C	Med ≤ 0.01 B	Med ≤ 0.01 B			
				95thpercentile0.02 B	Maintain	Maintain			
			Brookfields Bridge / Puketapu	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95thpercentile0.031 C	95thpercentile ≤ 0.03 B	95thpercentile ≤ 0.03 B			
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
			Mangatutu Stream	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95thpercentile0.023 B	Maintain	Maintain			
			Mangaone River (Rissington)	Med 0.026 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95thpercentile0.036 C	95thpercentile ≤ 0.03 B	95thpercentile ≤ 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	Default	No/Insufficient data	≥ 5	≥ 5	**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
					<*Kotahi Review*>	<*Kotahi Review*>			
			Lawrence Hut (Class 1)	7.6	Maintain	Maintain			
				6.9 *A*	<*Kotahi Review*>	<*Kotahi Review*>			
		Main stem	Default	No/Insufficient data	≥ 3.75	≥ 3.75		Trout fishery - significant	
					<*Kotahi Review*>	<*Kotahi Review*>			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			u/s Mangaone River (Class 1)	3.4	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.		
				2.54 *A*	*<Kotahi Review>*	*<Kotahi Review>*			
			Brookfields Bridge / Puketapu	3.35	Improving trend	≥ 3.75			
				2 *A*	*<Kotahi Review>*	*<Kotahi Review>*			
		Hill country tributaries	Default	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	*<Kotahi Review>*			
			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>*			
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 26.1.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13					*<Kotahi Review>*				
Macroinvertebrates MCI QMCI NOF Table 14	1. MCI Macroinvertebrate Community Index Average Below median flow	Headwaters	Default	No/Insufficient data	MCI ≥ 130 QMCI ≥ 6.5 ASPM ≥ 0.6	MCI ≥ 130 QMCI ≥ 6.5 ASPM ≥ 0.6	**A band** (blue): (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine	Ecosystem health	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity • Trout

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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		Lawrence Hut	MCI 129 B	MCI ≥ 130 A	MCI ≥ 130 A	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.		
				QMCI 6.7 A	Maintain	Maintain			
				ASPM 0.64 A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
			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			
		Hil country tributaries	Default	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
			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			

TABLE 26.1.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Periphyton (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	Default	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 • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Natural character • Indigenous biodiversity • Abstractive uses including stock drinking
			Lawrence Hut	12 (2012-15)	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	≤ 30	≤ 30			
			u/s Mangaone River	28 (2012-15)	Maintain	Maintain			
			Brookfields Bridge / Puketapu	34 (2012-15)	Improving trend	≤ 30			
		Upland tributaries	Default	No/Insufficient data	≤ 30	≤ 30			
			Mangatutu Stream	14 (2012-15)	Maintain	Maintain			
			Mangaone River (Rissington)	1.7 (2012-15)	Maintain	Maintain			
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.	Ecosystem health	Waimaori Natural character Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Indigenous biodiversity Trout
		Main stem		No/Insufficient data					
		Hill country tributaries		No/Insufficient data					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							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.		
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>*				
Temperature (˚C) 5-day CRI	Cox-Rutherford-Index Continuous measurement Hottest 5 consecutive days All flows	Headwaters		No/Insufficient data	*<Kotahi Review>*	≤ 1⁰ 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 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.		Waimaori Mauri Kaitiakitanga Whakapapa, taonga/tohu species, ahumoana, ahuwhenua, mahinga kai Natural character Indigenous biodiversity Trout
		Main stem		No/Insufficient data	*<Kotahi Review>*	≤ 2⁰ C increment from reference state B			
		Hill country tributaries		No/Insufficient data	*<Kotahi Review>*	≤ 2⁰ C increment from reference state B			
		Lowland tributaries		No/Insufficient data	*<Kotahi Review>*	≤ 2⁰ C increment from reference state B			Waimaori Mauri Kaitiakitanga Whakapapa, taonga/tohu species, ahumoana, ahuwhenua, mahinga kai Natural character Indigenous biodiversity
pH	At all times, 95th percentile				*<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.	Ecosystem health	

TABLE 26.1.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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 • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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	Default	No/Insufficient data	A	A	**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	• Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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
			Lawrence Hut	A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	B	B			
			u/s Mangaone River	B	Maintain	Maintain			
			Brookfields Bridge / Puketapu	B	Maintain	Maintain			
		Hill country tributaries	Default	No/Insufficient data	B	B			
			Mangatutu Stream	D	B	B			
			Mangaone River (Rissington)	D	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 (~~be~~low national bottom line) Estimated risk of *Campylobacter* infection has a >5% occurrence, 95% of the time.	Uu Recreation Human health	• Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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	~~OUTCOME~~ 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 Maori
<Insert through Kotahi process>

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

SCHEDULE 26.2: AHURIRI CATCHMENT

Refer to ~~Planning Map~~ Schedule 26.~~2~~ Map 2

Vision
<to be drafted through Kotahi Review process>

Outcomes
~~<~~This sits in the body of the plan. Refer to ~~relevant~~ TANK Objectives 10 and 14~~>~~

TABLE 26.2.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Lowland	Default	No/Insufficient data	≤ 0.444	≤ 0.444	Light Green: (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning. Orange: (> 0.444) Above ANZECC default guideline value, investigation/ management recommended.	~~Esturay~~ Estuary ecosystem health	Uu Waimaori 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
			Taipo Stream	0.356	Maintain	Maintain			
			Whararangi Stream	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	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A	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	Waimaori 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 ≤ 0.05 A	Max ≤ 0.05 A			
			Taipo Stream	Median 0.016 A	Maintain	Maintain			
				Max 0.119 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
			Whararangi Stream	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	Default	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A	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	Waimaori 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 ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Taipo Stream	Median 0.131 A	Maintain	Maintain			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				95th percentile 0.66 A	Maintain	Maintain	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).		
			Whareranga Stream	No/Insufficient data	Median ≤ 1.0 A 95th percentile ≤ 1.5 A	Median ≤ 1.0 A 95th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Lowland	Default	No/Insufficient data	Maintain or improving trend	Median ≤ 0.018; C ~~≤ 0.010 B~~ 95th percentile ≤ 0.018; C ~~≤ 0.030 B~~	**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 • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
			Taipo Stream	Median 0.25 D 95th percentile 0.59	Improving trend	Median ≤ 0.018 C; ~~≤ 0.010 B~~ 95th percentile ≤ 0.018; C ~~≤ 0.030 B~~			
			Whareranga Stream	No/Insufficient data	Improving trend	Median ≤ 0.018; C ~~≤ 0.010 B~~ 95th percentile ≤ 0.018; C ~~≤ 0.030 B~~			
Suspended fine sediment Visual clarity (m) NOF Table 8	**Recreation/ aesthetics** Visual clarity Median Monthly samples Minimum 5 years	Lowland	Default	No/Insufficient data	> 1.6 <*Kotahi Review*>	> 1.6 <*Kotahi Review*>	**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*>	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
			Taipo Stream (class 2)	0.40	Improving trend	> 1.6			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
	NOF: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)			0.40 D	<*Kotahi Review*>	<*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.		supply, primary production and food production, industrial and commercial use
			Whareranga Stream (class 2) (	No/Insufficient data	> 1.6 <*Kotahi Review*>	> 1.6 <*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	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13				No/Insufficient data	<*Kotahi review*>				
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 where relevant) Quantitative Macroinverte-brate Community Index 3. ASPM Macroinverte-brate average score per metric	Lowland	Default	No/Insufficient data	Maintain or improve	MCI > 90 C QMCI > 4.5 C ASPM > 0.3 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	Ecosystem health	Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning Natural character Indigenous biodiversity
			Taipo Stream	MCI 57.2 D	Improving trend	MCI > 90 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				QMCI 1.8 D	Improving trend	QMCI > 4.5 C	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.		
				ASPM 0.1 D	Improving trend	ASPM > 0.3 C			
			Whararangi Stream	No/Insufficient data	Maintain or impove	MCI > 90 C			
						QMCI > 4.5 C			
						ASPM > 0.3 C			
Macrophytes (max % CAV)	Monthly All year observations	Lowland	Default	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 • Waimaori • 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
			Taipo Stream	No/Insufficient data	≤ 50 %	≤ 50 %			
			Whararangi Stream	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	~~OUTCOME~~ 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	Default	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.	Ecosystem health	• Waimaori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity
			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			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Whararangi 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	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.		
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	• Waimaori • 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 species with loss of ecological integrity.	Ecosystem health	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Indigenous biodiversity • Natural character
pH	At all times, 95th percentile				*<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.	Ecosystem health	

TABLE 26.2.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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	Default	No/Insufficient data	C ~~B~~	C ~~B~~	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	• Waimaori • Mauri • Kaitiakitanga, he aha haere, ahu moana, ahuwhenua mahinga kai, nohoanga, cultural • practices, tauranga waka, maori 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
			Taipo Stream	E	C ~~B~~	C ~~B~~			
			Whararangi Stream	No/Insufficient data	C ~~B~~	C ~~B~~			

TABLE 26.2.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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: Matauranga maori
<Insert through Kotahi process>

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

SCHEDULE 26.3: NGARURORO CATCHMENT

Refer to ~~Planning Map~~ Schedule 26.~~3~~ Map 3

Vision
<to be drafted through Kotahi Review process>

Outcomes
~~<~~This sits in the body of the Plan. Refer to ~~relevant~~ TANK Objectives ~~8~~11 and 11~~14~~>

TABLE 26.3.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Headwaters (Upper Ngaruroro)	Default	No/Insufficient data	< 0.05	< 0.05	**Blue:** (≤ 0.05) ~~Very low risk of algal growth.~~ **Green**: (≤ 0.05 and < 0.15) ~~Low risk of algal growth.~~ **Yellow**: (≤ 0.15 and < 0.3) ~~Moderate risk of algal growth~~. **Red:** (> 0.3) ~~High risk of algal growth.~~ **Light green:** (≤ 0.444) Below ANZECC lowland guideline value, unlikely to be concerning.	Algal growth	• Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water
			Kuripapango	0.01	Maintain	Maintain			
			Whanawhana	0.027	Maintain	Maintain			
		Main stem (Lower Ngaruroro)	Default	No/Insufficient data	< 0.15	< 0.15			• Uu • Waimaori • 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
			d/s HB Dairies	0.086	Maintain	Maintain			
			Fernhill	0.106	Maintain	Maintain			
			Chesterhope	0.08	Maintain	Maintain			
		Hill country tributaries	Default	No/Insufficient data	0.44 ~~< 0.3~~	0.44 ~~< 0.3~~			• Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Estuary ecosystem health • Recreation • Natural character • Abstractive uses • Drinking water
			Ohara Stream	No/Insufficient data	0.44 ~~< 0.3~~	0.44 ~~< 0.3~~			
			Poporangi Stream	0.548	0.44 ~~< 0.3~~	0.44 ~~< 0.3~~			
			Maraekakaho Stream	0.231	Maintain	Maintain			
		Lowland tributaries	Default	No/Insufficient data	≤ 0.444	≤ 0.444	**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 • Waimaori • 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
			Waitio Stream	0.219	Maintain	Maintain			
			Ohiwia Stream	0.468	≤ 0.444	≤ 0.444			
			Tutaekuri-Waimate Stream	0.243	Maintain	Maintain			
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	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A	**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	• Waimaori • 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 ≤ 0.05 A	Max ≤ 0.05 A			
			Kuripapango	Median 0.0025 A	Maintain	Maintain			
				Max 0.005 A					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Whanawhana	Median 0.002 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 0.01 A					
		Main stem	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			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					
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			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					
		Lowland tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Waitio Stream	Median 0.002 A	Maintain	Maintain			
				Max 0.017 A					
			Ohiwia Stream	Median 0.006 A					
				Max 0.034 A					
			Tutaekuri-Waimate Stream	Median 0.008 A					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				Max 0.028 A					
Nitrate (mg NO_3-N/L) NOF Table 6	Annual median Annual 95th percentile Hazen method All flows	Headwaters	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A	**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	• Waimaori • 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 ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Kuripapango	Median 0.0075 A	Maintain	Maintain			
				95th percentile 0.029 A					
			Whanawhana	Med 0.017 A					
				95th percentile 0.106 A					
		Main stem	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			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					
		Hill country tributaries	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A			
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			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					
		Lowland tributaries	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 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	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
					Maintain	Maintain			
			Waitio Stream	Med 0.23 A					
				95th percentile 0.54 A					
			Ohiwia Stream	Med 0.66 A					
				95th percentile 0.92 A					
			Tutaekuri-Waimate Stream	Med 0.25 A					
				95th percentile 0.52 A					
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Headwaters	Default	No/Insufficient data	Med ≤ 0.006 A	Med ≤ 0.006 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 • Waimaori • Mauri • Mahinga kai, taonga/tohu species Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses
					95th percentile ≤ 0.021 A	95th percentile ≤ 0.021 A			
			Kuripapango	Med 0.002 A	Maintain	Med ≤ 0.002 A			
				95thpercentile 0.003 A		95thpercentile ≤ 0.003 A			
			Whanawhana	Med 0.002 A		Med ≤ 0.002 A			
				95thpercentile 0.004 A		95thpercentile ≤ 0.004 A			
		Main stem	Default	No/Insufficient data	Med ≤ 0.01 B	Med ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			
			d/s HB Dairies	Med 0.005 A	Maintain	Med ≤ 0.005 A			
				95thpercentile 0.009 A		95thpercentile ≤ 0.009 A			
			Fernhill	Med 0.008 B	Maintain	Med ≤ 0.008 B			
				95thpercentile 0.020 A	Maintain	95thpercentile ≤ 0.020 A			
			Chesterhope	Med 0.007 B	Maintain	Med ≤ 0.007 B			
				95thpercentile 0.014 A	Maintain	95thpercentile ≤ 0.014 A			
		Hill country tributaries	Default	No/Insufficient data	Med ≤ 0.01 B	Med ≤ 0.01 B			
					95th percentile ≤ 0.03 B	95th percentile ≤ 0.03 B			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Ohara Stream	No/Insufficient data	Maintain or improve	Med ≤ 0.01 B 95th percentile ≤ 0.03 B			
			Poporangi Stream (Big Hill Rd Bridge)	Med 0.026 D 95th percentile 0.035 C	Improving trend	Med ≤ 0.01 B 95th percentile ≤0.03 B			
			Maraekakaho Stream	Med 0.024 D 95th percentile 0.071 D		Med ≤ 0.01 B 95th percentile ≤0.03 B			
		Lowland tributaries	Default	No/Insufficient data	Improving trend	Med ≤ 0.018 C ~~≤ 0.01~~ ~~B~~ 95th percentile ≤0.054 C ~~≤ 0.03~~ ~~B~~		Estuary ecosystem health	• Uu • Waimaori • Mauri • Aquifer recharge • Mahinga kai, taonga/tohu species • Natural character • Abstractive uses
			Waitio Stream	Med 0.024 D 95th percentile 0.081 D		Med ≤ 0.018 ~~≤ 0.01~~ ~~B~~ 95th percentile ≤0.054 C ~~≤ 0.03~~ ~~B~~			
			Ohiwia Stream	Med 0.117 D 95th percentile 0.21 D		Med ≤ 0.018 C ~~≤ 0.01~~ ~~B~~ 95th percentile ≤0.054 C ~~≤ 0.03~~ ~~B~~			
			Tutaekuri-Waimate Stream	Med 0.03 D 95th percentile 0.049 D		Med ≤ 0.018 C ~~≤ 0.01~~ ~~B~~ 95th percentile ≤0.054 C ~~≤ 0.03~~ ~~B~~			
Suspended fine sediment Visual clarity (m) NOF Table 8	**Trout fishery:** Median Below median flow **Recreation/ aesthetics**	Headwaters	Default	No/Insufficient data	≥ 5 <*Kotahi Review*>	≥ 5 <*Kotahi Review*>	**Trout fishery:** **Bright blue** ≥ 5 meets outstanding trout fishery values. **Light green** ≥ 3.75 and < 5 meets significant trout fishery.	Trout fishery - outstanding	• Mauri • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Recreation • Amenity natural character
			Kuripapango (Class 1)	5.7	Maintain	Maintain			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
	Visual clarity Median Monthly samples Minimum 5 years **NOF:** Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)			5.7 A	*<Kotahi Review>*	*<Kotahi Review>*	**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.		• Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Whanawhana (Class 1)	4.5	Improving trend	≥ 5			
				1.94 A	*<Kotahi Review>*	*<Kotahi Review>*			
		Main stem	Default	No/Insufficient data	≥ 3.75	≥ 3.75		Trout fishery - significant	
					<Kotahi Review>	*<Kotahi Review>*			
			d/s HB Dairies (Class 1)	3.31	Improving trend	≥ 3.75			
				0.95 D	*<Kotahi Review>*	*<Kotahi Review>*			
			Fernhill (Class 1)	2.74	Improving trend	≥ 3.75			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				0.65 D	*<Kotahi Review>*	*<Kotahi Review>*	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.		
			Chesterhope (Class 1)	2.1	Improving trend	≥ 3.75			
				1.58 - D	*<Kotahi Review>*	*<Kotahi Review>*			
		Hill country tributaries	Default	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	*<Kotahi Review>*			
			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>*			
		Lowland tributaries	Default	No/Insufficient data	> 1.6	> 1.6		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>*			
			Waitio Stream (Class 2)	4.45	Maintain	Maintain			
					<Kotahi Review>	*<Kotahi Review>*			
			Ohiwia Stream (Class 2)	3.15	Maintain	Maintain			
					<Kotahi Review>	*<Kotahi Review>*			
			Tutaekuri-Waimate Stream (Class 1)	1.58	> 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 • Waimaori • Mauri • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori 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	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13					*<Kotahi Review>*				
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	Default	No/Insufficient data	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	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity • Trout
						QMCI ≥ 6.5 A			
						ASPM ≥ 0.6 A			
			Kuripapango	MCI 117 A	Improving trend	MCI ≥ 130 A			
				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			
		Main stem	Default	No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
						QMCI ≥ 5.5 B			
						ASPM ≥ 0.4 B			
			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			
		Hill country tributaries	Default	No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
						QMCI ≥ 5.5 B			
						ASPM ≥ 0.4 B			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			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			
			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			
		Lowland tributaries	Default	No/Insufficient data	Maintain or improve	MCI ≥ 90 C			• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
						QMCI ≥ 4.5 C			
						ASPM ≥ 0.3 C			
			Waitio Stream	MCI 98.1 C	Maintain or improve	MCI ≥ 98.1 C			
				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			
			Tutaekuri-Waimate Stream	MCI 75.8 D	Improving trend	MCI ≥ 90 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.16 D	Improving trend	ASPM ≥ 0.3 C			
Macrophytes (max % CAV)	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 • Waimaori • 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	~~OUTCOME~~ 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 • Waimaori • Natural character • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Indigenous biodiversity
Periphyton cover (median of annual max %PeriWCC)	Monthly observations All year	Headwaters	Default	No/Insufficient data	≤ 20	≤ 20	**Blue**: (≤ 20) Ecological condition excellent and maintains recreation/aesthetics values. **Green**: (> 20 and ≤ 30)	Ecosystem health	• Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Natural character • Indigenous biodiversity • Abstractive uses including stock drinking
			Kuripapango	No/Insufficient data	≤ 20	≤ 20			
			Whanawhana	27 (2012-2015)	≤ 20	≤ 20			
		Main stem	Default	No/Insufficient data	≤ 30	≤ 30			
			d/s HB Dairies	39 (2012-2015)	≤ 30	≤ 30			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							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.		
			Fernhill	41 (2012-2015)	≤ 30	≤ 30			
			Chesterhope	No/Insufficient data	≤ 30	≤ 30			
		Upland tributaries	Default	No/Insufficient data	≤ 30	≤ 30			
			Ohara Stream	No/Insufficient data	≤ 30	≤ 30			
			Poporangi Stream	No/Insufficient data	≤ 20	≤ 20			
			Maraekakaho Stream	80 (2012-2015)	≤ 30	≤ 30			
		Lowland tributaries	Default (hard bottom streams)	No/Insufficient data	≤ 30	≤ 30			
			Waitio Stream	22 (2012-2015)	≤ 22	≤ 22			
			Ohiwia Stream	49 (2012-2015)	≤ 40	≤ 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	• Waimaori • 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	• Waimaori • 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			• Waimaori • Mauri • Natural character • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Indigenous biodiversity

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
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>*	≤ 1⁰C 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. **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	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Natural character • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data	*<Kotahi review>*	≤ 2⁰ C increment from reference state B			
		Hill country tributaries		No/Insufficient data	*<Kotahi review>*	≤ 2⁰ C increment from reference state B			
		Lowland tributaries		No/Insufficient data	*<Kotahi review>*	≤ 2⁰ C increment from reference state B			• Waimaori • 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.	Ecosystem health	

TABLE 26.3.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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 • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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	Default	No/Insufficient data	A	A	**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	• Waimaori • Mauri • Kaitiakitanga, he aha haere, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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
			Kuripapango	A	Maintain	Maintain			
			Whanawhana	A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	B	B			
			d/s HB Dairies	A	Maintain	Maintain			
			Fernhill	B	Maintain	Maintain			
			Chesterhope	B	Maintain	Maintain			
		Hill country tributaries	Default	No/Insufficient data	B	B			
			Ohara Stream	No/Insufficient data	B	B			
			Poporangi Stream	No/Insufficient data	B	B			
			Maraekakaho Stream	D	B	B			
		Lowland tributaries	Default	No/Insufficient data	B	B			
			Waitio Stream	B	Maintain	Maintain			
			Ohiwia Stream	D	B	B			
			Tutaekuri-Waimate Stream	D	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	• Waimaori • Mauri • Kaitiakitanga, he aha haere, ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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	~~OUTCOME~~ 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 Maori
<Insert through Kotahi process>

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

SCHEDULE 26.4: KARAMŪ CATCHMENT

Refer to ~~Planning Map~~ Schedule 26.~~4~~ Map 4

Vision
<to be drafted through Kotahi Review process>

Outcomes
<This sits in the body of the Plan. Refer to ~~relevant~~ TANK Objectives 10~~13~~ and 11~~14~~>

TABLE 26.4.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Karamū (Lowland)	Default	Insufficient/no data	≤ 0.444	≤ 0.444	**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	• Uu • Waimaori • 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
			Raupare Stream	0.284	Maintain	Maintain			
			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			
Ammonia (mg NH_4-N/L) NOF Table 5	Annual median Annual max Unionised ammonia based on pH at 20°C All flows	Karamū (Lowland)	Default	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A	**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	• Waimaori • 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 ≤ 0.05 A	Max ≤ 0.05 A			
			Raupare Stream	Median 0.009 A	Maintain	Maintain			
				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			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				Max 0.01 A	Maintain	Maintain			
			Herehere Stream	Median 0.008 A	Maintain	Maintain			
				Max 0.053 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			
Nitrate (mg NO_3-N/L) NOF Table 6	1. Annual median 2. Annual 95th percentile Hazen method All flows	Karamū (Lowland)	Default	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A	**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	• Waimaori • 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 ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Raupare Stream	Median 0.255 A	Maintain	Maintain			
				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			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
					95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
			Clive River	Median 0.61 A	Maintain	Maintain			
				95th percentile 1.832 B	95th percentile ≤ 1.5 A	95th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	Median 95th percentile All flows	Karamū (Lowland)	Default	Insufficient/no data	Maintain or improving trend	Median ≤ 0.018; C ~~≤ 0.01~~	**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 • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
			Raupare Stream	Median 0.027 D	Improving trend	Median ≤ 0.018; C ~~≤ 0.01~~ B			
				95th percentile 0.038 C	Improving trend	95th percentile ≤0.054 C ~~≤0.03~~ B			
			Ruahapia Stream	Insufficient/no data	Improving trend	Median ≤ 0.018; C ~~≤ 0.01~~ 95th percentile ≤0.054 C ~~≤ 0.03~~ B			
			Irongate Stream	Insufficient/no data					
			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					

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Suspended fine sediment	**Recreation/ Aesthetics**	Karamū (Lowland)	Default	Insufficient/no data	> 1.6	> 1.6	**Recreation/ aesthetics**	Recreation/ aesthetics	• Uu • Mauri
Visual clarity (m) NOF Table 8	Visual clarity Median Monthly samples Minimum 5 years **NOF**: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)				<*Kotahi Review*>	<*Kotahi Review*>	**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.		• 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
			Raupare Stream (class1)	1.75	Maintain	Maintain			
				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*>			
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 • Waimaori • Mauri • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori 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	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13				*< Kotahi review>*					
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)	Default	MCI Not available	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	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
				QMCI not available	Improving trend	QMCI ≥ 4.5 C			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C			
			Raupare Stream	MCI 62.7 D	Improving trend	MCI ≥90 C			
				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			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
				MCI 52 D	Improving trend	MCI ≥90 C			
			Awanui Stream	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			
			Poukawa Stream	QMCI 3.2 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
				MCI 60.7 D	Improving trend	MCI ≥90 C			
			Herehere Stream	QMCI 2.4 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.12 D	Improving trend	ASPM ≥ 0.3 C			
				MCI Not available	MCI ≥90 C	MCI ≥90 C			
			Mangarau Stream (Te Aute)	QMCI not available	Improving trend	QMCI ≥ 4.5 C			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Clive River	MCI 51.4 D	MCI ≥90 C	MCI ≥90 C			
			Clive River	QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 C			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C			
				Insufficient/no data	≤ 50 %	≤ 50 %			
Macrophytes (max % CAV)	Monthly All year observations	Karamū (Lowland)					**Light Green** ≤ 50 % maintains ecological condition / flow conveyance / recreation values. **Russet** > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	• Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga wak • 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	~~OUTCOME~~ 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	• Waimaori • 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)	Default	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	• Waimaori • 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	• Waimaori • 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)	Ecosystem health	• Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwhenua mahinga kai • Natural character • Indigenous biodiversity

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							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.		
pH	At all times, 95th %ile	Karamū (Lowland)			*<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 ~~TREND TO~~ 2040	~~OUTCOME~~ 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 ~~B~~	C ~~B~~	**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	• Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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 ~~B~~	C ~~B~~			
			Irongate Stream	No/Insufficient data	C ~~B~~	C ~~B~~			
			Karewarewa Stream	E	C ~~B~~	C ~~B~~			
			Awanui Stream	E	C ~~B~~	C ~~B~~			
			Poukawa Stream	B	Maintain	Maintain			
			Herehere Stream	E	C ~~B~~	C ~~B~~			
			Mangarau Stream (Te Aute)	No/Insufficient data	C ~~B~~	C ~~B~~			
			Clive River	D	C ~~B~~	C ~~B~~			
			Other river reaches	E	C ~~B~~	C ~~B~~			
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.	Uu Recreation Human health	• Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahu moana, ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori 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

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE ~~TREND TO~~ 2040	~~OUTCOME~~ LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							Poor >540 (below national bottom line) Estimated risk of *Campylobacter* infection has a >5% occurrence, 95% of the time.		

TABLE 26.4.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	~~OUTCOME~~ 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 Maori
<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 ~~Planning Map~~ Schedule 26.~~5~~ Map 5

Vision
<to be drafted through Kotahi Review process>

Outcomes
<This sits in the body of the Plan. Refer to ~~relevant~~ 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	~~OUTCOME~~ 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>*	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
					<Kotahi Review>	7 day minimum ≥ 6.0			
					<Kotahi Review>	1 day minimum ≥ 5.0			
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	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	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
				95th percentile 0.45					
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	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: 0.41	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: 0.10	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: 0.14	Where nutrient levels exceed trigger values there is an improving trend by 2040	*<Kotahi Review>*			

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET[1] ATTRIBUTE STATE 2040	~~OUTCOME~~ 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 Charater • 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	TARGET[1] ATTRIBUTE STATE 2040	OUTCOME 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	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 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

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET[1] ATTRIBUTE STATE 2040	~~OUTCOME~~ LONG TERM[1] TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
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: Freshwater Quality Objectives~~

[Schedule 27 is deleted]

Schedule 2~~8~~7: Priority Catchments

Refer to Rule TANK 1.

This schedule sets out the thresholds used to determine the ~~list of~~ priority catchments or places. The priority catchments identified using these thresholds are shown in 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 ~~that are where there is~~;

1. Risk of sediment loss in ~~is higher than 500~~t/km²/year (as modelled by SedNet)
2. ~~SOE monitoring shows the freshwater objectives for n~~ Nitrogen concentrations ~~for water quality~~ based on SOE data ~~monitoring~~ and modelling ~~are not being met~~
3. Risk of significant contribution of high nitrogen loads ~~to the estuary~~ ~~Probability that dissolved nutrients do not meet freshwater objectives for nitrogen~~ (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. ~~A~~ Source water areas ~~Protection Zones~~ 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)	>4500 t/km²/year	350 - 4500 t/km²/year	250 - 350 t/km²/year	<250 t/km²/year
~~**TN concentrations (all flows, median)**~~[180.68]	~~> 2 mg/L~~	~~> 1.2 mg/L~~	~~> 1 mg/L~~	~~<1 mg/L~~
TN yield (modelled) (all flows, average per ~~sub~~-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)[180.68]	>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 27 Maps 1 – 4 and Schedule 34 Maps 1 – 2 show~~ing~~ the spatial extent and location of the priority areas. ~~are available as part of this plan change but are not included as planning maps. This is because the thresholds for priority will remain fixed, however the status of catchments will change over time as work is completed within the catchment.~~

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 29: Land Use Change

If the use of production land on farm properties or farming enterprises in the TANK catchments changes over more than 10 hectares per property, information may be requested from the landowner or land manager to demonstrate or model the annual Nitrogen loss (using Overseer or SPASMO or alternative model approved by HBRC) in order to;

1. show compliance with the requirements of Rules TANK 5 and 6
2. enable Policies 18 and 21 to be implemented
3. assist landowners to implement the requirements of Schedule 30

Calculation of changes to the annual nitrogen loss on a whole of property or whole of farming enterprise basis will be based on the data in Table 1 unless more accurate model data specific for the property in question is available.

Table 2 specifies the allowable change in nitrogen load. The loads are calculated according to the following formula. For each column: the value given is the maximum difference between the highest and lowest Nitrogen loss x 10ha.

Where the land use activity involves arable or vegetable cropping including grazing on a rotational basis, including on lease land at variable locations, production land use change does not include a change in the location of an arable and/or vegetable cropping rotation, where the area of the rotation is equivalent, (plus 10 ha) of the maximum rotation area in the 5 years prior to the plan notification.

Table 1: Nitrogen Losses for Production Land

Land Use Type	TN Load (kg/ha/y) (Overseer)	TN Load (kg/ha/y) SPASMO		
		Esk/Omahu/ Pakipaki Soils	Average Other soils	Farndon/Omarunui/Te Awa soils
Beef	20			
Dairy	32			
Scrub or tree cover	3			
Mixed sheep, beef and deer	13			
Kiwifruit		9	13	23
Pipfruit		9	15	24
Summer fruit		9	14	23
Grapes		1	9	18
Winter forage crops				
Arable/vegetable rotation				

Table 2 – Nitrogen Loss Thresholds per Property or Farm Enterprise (ref TANK Rule 5)

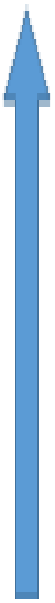
	Annual Nitrogen loss change threshold (kg/y)		
	Esk / Omahu / Pakipaki soil types	Other soils	Farndon / Omaranui / Te Awa soil types
Unirrigated land uses	290		
Irrigated land uses	80	240	430
Change between non-irrigated and irrigated land uses will be subject to a maximum permitted change of 290 (kg/y) using SPASMO to calculate this change.			

Schedule 28: Land Use Change

If the use of production land on farm properties or farming enterprises in the TANK catchments 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 ~~30~~: ~~Landowner~~ Catchment Collective, Industry Programme and Freshwater ~~Environment~~ Farm Plan

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

~~This schedule sets out the requirements for the establishment of a TANK Industry Group or TANK Catchment Collective their operation and their environment plan in order for them to be approved by the Hawke's Bay Regional Council. It also sets out the requirements for Farm Environment Plans. **Heretaunga Plains Water Management Unit**~~

~~In the Heretaunga Plains Water Management Unit, requirements for stream flow enhancement will be imposed through conditions of a water permit. Management of a stream flow enhancement scheme is not required to be done by water permit holders acting collectively, however, an Environmental Management Plan can address collective management of any flow enhancement scheme and also address water quality issues according to Sections A and B at the same time.~~

~~Industry Groups and Catchment Collectives~~

~~A TANK Industry Group or a TANK Catchment Collective must meet the requirements set out in Section A below.~~

~~Industry Programme or Catchment Collective Programme~~

~~Each TANK Industry or TANK Catchment Collective must prepare an **Industry Programme** or **Catchment Collective Programme** that meets the requirements set out in Section B below. This programme must identify the key water quality and water quantity management issues identified in this Plan that are relevant to;~~

- ~~the catchment(s)~~
- ~~the nature of the land and water use activities carried out within that catchment~~
- ~~the scale of the effects on water quality or water quantity from the land and water use activities in that catchment~~

~~The Programme will describe an environmental management strategy relevant to the freshwater water management objectives where the member properties are located. An Industry Programme can be based on existing good agricultural practice industry [52]programmes, and will in addition need to address local water quality and quantity issues.~~

~~A summary of the Programme objectives and outputs will be made publicly available through the Council website.~~

~~Any TANK Programme prepared in accordance with Schedule 30 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.~~

~~Farm Environment Plan~~

~~The requirements of the Farm Environment Plan are set out in Section C below.~~

~~Programme Requirements~~

~~Section A: Industry Groups and Catchment Collectives~~

1. ~~Governance~~ and Management

~~1.1 Each Catchment Collective or Industry Group must undertake to carry out the requirements of Sections A and B and must specify in writing the manner in which it will carry this out. This must address the following:~~

~~Details relating to the governance and management arrangements of the Programme~~ ~~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 Programme by individual land managers (the 'Members' who commit to the Programme), including the circumstances and terms of membership, sanctions or removal from the Collective~~

~~[52] This refers to existing industry programmes such as Hort NZ GAP, Sustainable Winegrowing, Fonterra Clean Stream etc.~~

or Industry Programme 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 Collective or Industry Programme 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: If a membership is lapsed, refused or discontinued, the Council will require the landowner to comply with rule TANK 1

Information and management systems and processes to ensure:

d) Competent and consistent performance in meeting the requirements of this schedule

e) Robust data management, including up-to-date registers of Programme Members.

f) Timely provision of suitable quality data and information required under the following clauses to Hawke's Bay Regional Council

g) Conditions of membership of the Programme by individual land managers (the 'Members') who commit to the Programme including provision of information to enable reporting requirements to be met.

A description of the Programme area including:

h) locations and maps,

i) land uses,

j) 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),

k) activities at particular risk of nutrient loss,

l) property boundaries,

m) up-to-date details about ownership and property managers,

n) up-to-date contact details of individual land managers and landowners within the Programme (the 'Members').

Section B: Catchment Collective Requirements

This section sets out the requirements for the environment plan for each Catchment Collective or Industry Programme

2. Environmental Outcomes

2.1 The Plan must include statements about the;

a) specified water quality outcomes 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 meeting the timeframes specified for relevant water quality objectives and milestones specified in the Plan

2.2 The Plan must address where appropriate;

a) managing contaminant losses (especially sediment, nutrients and bacteria) to waterways including efficient use of nutrients and good practice when carrying out land disturbance activities especially in relation to critical contaminant source areas

b) where water quality does not meet standards 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) in relation to industry specified benchmarks or good practice for nitrogen and phosphorus loss;

(ii) LUC (Land Use Capability) and soil type;

(iii) Olsen P levels in soil;

(iv) Stock management including rates and densities of different classes 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 Policy 11 and maintaining or improving the physical and biological condition of soils in a manner consistent with Policy 20 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;

d) wetland management including to meet the outcomes specified in Policies 14 and 15;

e) management of animal effluent to avoid contamination of ground and surface waters;

f) measures required to reduce risk of contamination of the source water for any Registered Drinking Water Supply;

g) management of stock, including in relation to river or stream crossings and exclusion from waterways in a manner that is consistent with Policy 22 and Rules TANK 1 or 3;

h) **in the Karamū and Lake Poukawa Catchments ;** the identification of opportunities to provide shading of the adjacent waterway or improvements to riparian margin values as specified in Policy 2.

2.3 The Plan must include measures to address **Nutrient Management** in any catchment or programme area where water quality objectives for nitrogen concentrations as detailed in Schedule 26 (or as further detailed for local rivers) are not being met, including;

a) development of an inventory of the nitrogen loss rate (kg/ha/year) for every property as determined by application of Overseer (or an alternative nutrient budget model approved by the Hawke's Bay Regional Council) by a suitably qualified independent practitioner;

b) a description of any mitigation measures identified as necessary to meet water quality objectives on those properties or within the relevant catchment;

c) annual recording and reporting of nutrient input and export data, including annual nitrogen loss rates.

2.4 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 Programme

3. Approval

3.1 The Catchment Collective plan or Industry Programme will be submitted for approval by the HBRC no later than by the end of the relevant year specified for that catchment in Schedule 28. In making decisions to approve the Programme the Council will take into account;

a) whether the requirements of this Schedule are met

b) whether the programme is consistent with the policies, water quality objectives and milestones that are relevant for that Catchment Collective or Industry Programme

c) whether the Programme was appropriately informed by person(s) with the necessary professional qualifications 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 programme

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 or 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) nature and significance of any land use change in accordance with Policy 22 and Rule TANK 5 or 6 and based on land uses at 2 May 2020.

c) the results of any environmental monitoring carried out by the Catchment Collective or Industry Programme;

d) the mitigation measures or practices carried out to reduce contaminant loss (consistent with what is industry agreed good practice) that will be adopted by the property owners or managers and as detailed in clause 2.1;

e) data, which may be aggregated across a catchment, about nitrogen loss and any changes in losses in respect of clause 2.3.

5. Reporting and Review

5.1 A summary report on the implementation of the 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, water quality objectives are being met and there is no land use change exceeding 10ha of the programme area.

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

5.3 The report will include;

a) information collected under section 4;

b) any amendments to the programmed mitigation measures 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 annual report shall 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.

6 Auditing

6.1 The HBRC will;

a) Publicly report on the implementation of TANK Programmes;

b) Undertake audits of TANK Industry or Catchment Collective Programmes 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.

Note 2: that if the conditions of any applicable RRMP Rule 7 for specified activities are not being complied with by a landowner or manager, there must be information as outlined in section B2 above of the Catchment Collective or Industry Programme to show how the relevant contaminant loss risks are to be managed to a similar level of performance.

Section C: Farm Environment Plans

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

1. **Requirements for Farm Environment Plans.**

1.1 A Farm Environment Plan must;

a) be prepared by a person with the professional qualifications necessary to prepare such a plan.

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 supply manager is available on the Council website.*

iv. activities at particular risk of nutrient loss;

v. contaminant discharge activities.

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

2. **Reporting and Review**

2.1 The Farm Environment Plan will be submitted to the HBRC no later than by the end of the relevant year specified in Schedule 28 for the catchment(s) the property is located in.

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

2.3 The report will include:

a) information collected under Clause 4 of Section B

b) any amendments to the programmed mitigation measures 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 provide information about;

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

d) 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 B.

3. **Auditing**

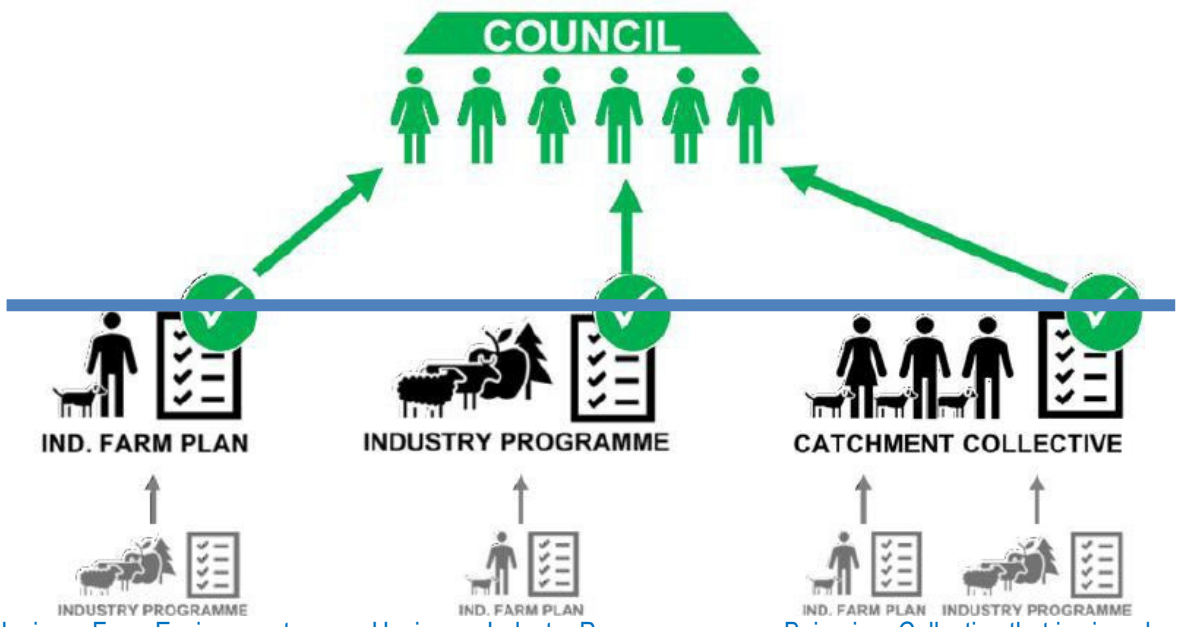
3.1 The HBRC will;

(i) Publicly report on the implementation of TANK Farm Environment Plan requirements

(ii) Undertake audits of properties in relation the Farm Environment Plan implementation of programmed works, adoption of identified good management practices, including nutrient management budgets where required.

~~*Note 3: that if the conditions of any applicable rules for specific activities in Section 6 of this plan are not being specifically complied with, there is information in the Farm Environment Plan to show how the relevant contaminant loss risks are to be managed to a similar level of performance.*~~

~~**Note:** the diagram below shows how the three environmental management approaches provided for in TANK 1 and Schedule 30 inter-relate with each other and their relationship with Council regulations. (The diagram is not part of the Plan Change but is included here for assistance in interpretation.)~~



~~Having a Farm Environment Plan signed off by council does not preclude a producer from being involved in an Industry Programme that is **not** signed off by the Council~~

~~Having an Industry Programme signed off by the Council does not preclude a producer from having their own farm plan that is **not** signed off by Council~~

~~Being in a Collective that is signed off by Council does not preclude a producer from having their own farm plan or Industry Programme that is not signed off by Council. But the Collective is the mechanism by which the producer is held accountable by the Council~~

~~Diagram is from TANK plan change: Barriers and risks to the adoption of proposed mechanisms to co-ordinate management action June 2018 Report by: Justin Connolly Director, Deliberate~~

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 Plans 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 301: Flows, Levels and Allocation Limits

Minimum and Trigger Flows and Allocation Limits

Refer to Rules TANK 9-10 8 - 11. This Schedule specifies the amount of water that may be authorised for abstraction from the specified water quantity areas management units 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.

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 from water taken at times of high flow and stored for later release but otherwise apply all year(refer to Schedule 32).

The location and spatial extent of the water quantity areas are management units is shown on the Planning Maps Schedule 30 Maps 1 - 5 31A – 31E.

Water Management Units (quantity) Quantity Area (and includes any tributaries of the named river)	Water bodies (includes sub area)	Minimum flow/flow maintenance Flow management site	Minimum Flow (litres/second)	Flow maintenance trigger (litres/second)	Allocation limit (litres/second for surface water and zZone 1 Groundwater; and cubic metres[3]/per year for groundwater)
Ahuriri	All surface water	n/a	n/a	n/a	Existing use only[1]
	All groundwater	n/a	n/a	n/a	Existing use only[1]
Karamū/ Clive River	Awanui Kawerawera-Paritua	The Flume	120	120	Total not to exceed 30 l/s
		Pakipaki		75	
	Irongate	Clarks Weir[2]	100	100	
	Louisa Stream	Te Aute Rd	30	30	
	Mangateretere Stream	Napier Rd	100	100	
	Karamū River	Floodgates	1100	1100	
	Raupare Stream	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	Tait Rd	109	n/a	36 l/sec
	Tūtaekurī -Waimate	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]

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

Note 1; Allocation limit is the ~~reflects~~ total amount allocated to ~~existing~~ consents ~~that were~~ granted prior to 2 May 2020 or a lesser amount ~~as relevant~~ where water is allocated subject to ~~a~~Actual and rReasonable use ~~for takes in the Heretaunga Plains Water Management Unit~~.

~~Note 2; The location of the Clarke's Weir monitoring site may be changed to provide better representation of sub-catchment flows.~~

Schedule 312: High Flow Allocation

Refer to Rules TANK 13-18 ~~6~~. 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 Management Site	(C) Flow Trigger	(D) High Flow Allocation	(E) Amount reserved to give effect to Policy 57 ~~for Māori development~~	(F) Limits for Damming
Ngarururo R	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 Ngarururo • the amount specified in column (E).	~~1,600~~ 1,200 litres per second.	Damming on mainstem of Ngarururo 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.		
Ngarururo 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 323: Water Permit Expiry Dates

Refer to ~~Policy~~ POL TANK 46 ~~49~~ and Rules TANK 8 – 11 ~~9-10~~ 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 ~~HPWMU~~)			
2018~~9~~ + 2019~~8~~	Poraiti~~ (Heretaunga Plains WMU)~~	2033	2047~~8~~
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
~~2028?~~	~~Poraiti~~		
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 ~~g~~Groundwater)			
2023	Karamū (and all tribs except Raupare)	2040	2058
2028		2043	2058
2025	Raupare	2040~~4~~	2055~~29~~
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 3~~4~~4A: Stormwater Management ~~Urban Site Specific~~

Section A: Stormwater Management Plan

Refer to Rules TANK 23 – 25 ~~21–23~~. A ~~Site~~ 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:

Name and description of Company and location of site

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

Site activities and stores

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

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.)

Site receiving environments

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

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 environment

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

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.

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 3~~4~~5: Source Protection for Drinking Water Supplies

Refer to ~~Policies~~ POLs 7 – 9 ~~6 – 8~~ and Rules TANK 2 – 25 ~~2 23~~ 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 ~~below~~ 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

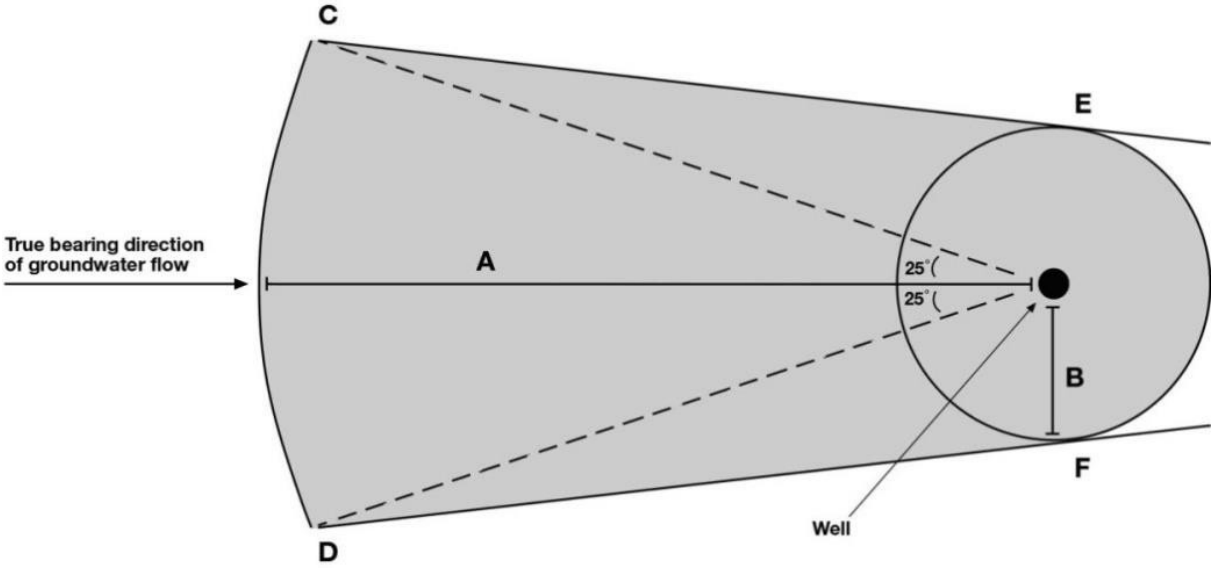
Population served class	Microbial Treatment?	Meets Artesian Head criterion	Method	Uncertainty assessment approach
501-5,000	Yes	Yes	Manual	Sensitivity analysis
	Yes	No	Analytical Element Model	Sensitivity analysis
	No	Yes	Analytical Element Model	Sensitivity analysis
	No	No	Analytical Element Model	Stochastic 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 36: Heretaunga Plains Stream Flow Maintenance And Habitat Enhancement Scheme~~

[Schedule 36 deleted – consequential amendment to recommended changes to POL TANK 37]