

Environmental Protection Authority
Tukituki Catchment Proposal
Private Bag 63002
Wellington 6140
tukituki.proposal@epa.govt.nz

Hawke's Bay Regional Council
Tukituki Catchment Proposal
Private Bag 6006
NAPIER 4142
Helen@hbrc.govt.nz

IN THE MATTER OF

THE TUKITUKI CATCHMENT PROPOSAL

***INCORPORATING PLAN CHANGE 6 TO THE HAWKE'S BAY REGIONAL
RESOURCE MANAGEMENT PLAN, AND***

THE RUATANIWHA WATER STORAGE SCHEME

***A SUBMISSION FROM
NGĀTI KAHUNGUNU IWI INCORPORATED***

Address for Service:

Ngāti Kahungunu Iwi Incorporated
P O Box 2406
HASTINGS
4153

Phone: 06 876 2718

Fax: 06 876 4807

Email: adele@kahungunu.iwi.nz

Introduction:

1. Ngāti Kahungunu Iwi Incorporated (NKII) is a mandated iwi authority with the third largest iwi population (55,946¹) and the second largest tribal rohe in New Zealand. Our coastline extends from Paritu near Te Mahia in the north to Turakirae (Palliser Bay) in the south.

The mission of Ngāti Kahungunu Iwi Incorporated is:

“To enhance the mana and well-being of Ngāti Kahungunu”.

2. The iwi authority maintains an independent position to represent and advocate the interests, rights, values, beliefs, cultural priorities and practices of all Ngāti Kahungunu whanau, hapū and iwi. This includes the responsibility and obligation as kaitiaki to care for and protect the natural environment for future generations. Our rivers are tāonga with iconic status and our hapū hold significant cultural and spiritual connections to the natural environment throughout the Tukituki catchment.
3. Land and Water are two significant natural elements that have guided and characterised Ngāti Kahungunu whānau and hapu. Our marae have always been strategically located near freshwater or waimāori. The very terms ‘tāngata whenua’² and ‘waimaori’³ are terms that demonstrate the importance of land and water to Māori and links to our identity.
4. NKII has held a number of hui throughout our rohe that primarily focused on issues and initiatives associated with water. These hui highlighted the common themes and values amongst tāngata whenua as well as the concerns held for inappropriate management of water resources, which has led to over-allocation, drying up of streams, and increasing incidence of pollution.
5. This submission does not intend to exclude or undermine any other Ngāti Kahungunu responses or submissions to the Tukituki Catchment Proposal. Ngāti Kahungunu Iwi encourages greater involvement of our constituent hapū and their interests in resource management planning around water.
6. The Tukituki Catchment Proposal has the capacity to substantially affect Ngāti Kahungunu taonga, values and interests in land and water within the catchment and extending out into the coastal environment. This will become increasingly apparent if the proposal does not recognise and provide for mātauranga Māori, tikanga Māori, and the rights, values and interests of tāngata whenua within its scope, detailed planning and implementation.
7. The proposal promotes substantial increases in land use intensification without, in our view, sufficient measures to avoid, remedy or mitigate adverse effects from contaminants and nutrients on surface water and ground water. In addition, the cumulative effects of these

¹ 2006 Census of Population and Dwellings, New Zealand Kahungunu population only.

² Local people, hosts, indigenous people of the land – born of the whenua, i.e. of the placenta and of the land where the people’s ancestors have lived and where their placentas are buried. Whenua means both land and placenta.

³ Freshwater, mineral water.

substances and the consequential effects on the coastal marine area are not adequately addressed in the proposal.

8. The suite of resource consent applications does not include an application for the discharge of contaminants to the estuarine and coastal marine area. It is our contention that due to the size of the Tukituki Catchment Proposal, subsequent increase in land use intensification activities and their potential for causing adverse effects on the coastal environment, then a further resource consent should be required.
9. We are not a trade competitor in terms of section 308D of the Resource Management Act, 1991. The Tukituki Catchment Proposal (“the proposal”) and/or its effects have the potential to affect our rights, values, and interests, or those of our constituent members.
10. We would like to receive hard copies of all information, including the draft and final reports.
11. We **oppose the proposal in its current form** as:

- **Ngāti Kahungunu has never relinquished their rights and interests in water.** The governance and commercialization of water adversely affects these rights and effectively places the natural resource into an ownership model that further alienates Maori from their natural resources and creates the potential for further Treaty of Waitangi grievances.
- Tāngata whenua have not and do not have an effective and meaningful role in the governance, management and operations of resource management including the waterways and land as appropriate as an equal party to the Tiriti of Waitangi and local bodies as crown representatives.
- The Tukituki is as significant to tāngata whenua as any awa in the country, this has not been respected. Tāngata whenua cultural considerations, consultation, history, mauri, values, rights and interests have not been adequately catered for. Demonstrating this is the lack of defining and elaborating the very name within the entire, expansive and expensive “Tukituki Catchment Proposal”. That is what does Tukituki mean?

There are two deviations of its name:

- beating of the water to drive fish into back waters to be scooped out (mahinga kai).
- paddling expression, navigable by waka, almost to Takapau, the paddling caller used the kupu – tuki (to continue, to move forward, anga whakamua).

This only highlights a requirement for further understanding and consideration to take place.

- There has been insufficient consultation with the local community, and all appropriate tāngata whenua particularly with Ngāi Te Upokoiri, one of our hapū who have strong customary rights and interests in the areas around the proposed dam;
- Some areas proposed for the water storage reservoir are subject to Treaty claim processes, and

- Restoring and protecting the health and wellbeing of the Tukituki for future generations is paramount to Ngāti Kahungunu and arguably the whole community. In order to achieve this outcome the best interests of the awa must be first and foremost, 'Mana o te Awa'. We consider the dam capacity to be excessive as it has been driven by economics, not by sound environmental or sustainable management principles;
- It may not be financially viable as the Hawke's Bay Regional Investment Company (HBRIC) economic analysis makes several assumptions including optimum uptake of storage water, outside investors buying up local farms, and most farmers operating in a manner akin to the top performing farmers in the country to achieve profit. In addition, the Ruataniwha Water Storage Scheme (RWSS) should be funded by those who stand to directly profit from it (irrigators), not the regional community;
- Other alternatives could be adopted to provide additional irrigation water to Central Hawke's Bay, albeit not on such a large scale;
- We are concerned that such large and long term scheme will adversely affect, deter and disadvantage more sustainable land practices, with longer term benefits, including land management practices that enable greater retention of water within the soil and in turn industry that is more tolerant to draught and climate change forecasts.
- There is the potential for an inappropriate increase in the contamination of surface and ground water within the Tukituki catchment, and the coastal environment, which the Tukituki Catchment Proposal fails to adequately address;
- The notification process is flawed as the large number of reports (72) have not always been accessible (from websites) since the date of notification. Having this data only available from the internet creates undue prejudice as it restricts public participation. In, 2006 only 50% of Ngāti Kahungunu lived in a household with internet access (2006 Census).
- The location for the proposed dam and water storage area is on a major fault line and there has been a substantial increase in the number of medium to large earthquakes in Hawke's Bay over the last 5 years.
- Conflicts of interest are and have been involved in decisions and relationships that associated with the Tukituki Catchment Proposal and favorable outcomes sought by its proponents. There has been a lack of openness and transparency.

PART A – Resource Consents

12. Our submission relates to the following matters, which we **oppose** in the first instance. However if the proposal grants the resource consents to proceed, the relief we seek is itemised following the consent application descriptions below.
13. **Construction, operation and maintenance of Makaroro Dam Structure on the Makaroro River at Wakarara**

NSP 13/02. 002 (HBRC Consent Number: LU120370C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain a dam on the Makaroro River at Wakarara approximately 35km northwest of Waipawa within the areas shown on Plans 1 – 3 in Schedule 2 forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 003 (HBRC Consent Number: WP120371M)	Hawke's Bay Regional Council	Resource consent	Water permit and discharge permit to dam, take, divert, use (for the purposes of electricity generation) and discharge water and water-borne sediment to water associated with the operation of the Makaroro Dam at Wakarara approximately 35km northwest of Waipawa within the areas shown on Plans 1 – 3 in Schedule 2 as part of the operation of the Ruataniwha Water Storage Scheme.

Construction, operation and maintenance of upstream water intake facilities

NSP 13/02. 004 (HBRC Consent Number: LU120372C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain water intake facilities on the true right bank of the Waipawa River near Makaroro Road approximately 4.5km west of State Highway 50 (referred to as the 'Upstream Water Intake Structure') within the area shown on Plan 4 in Schedule 2 forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 005 (HBRC Consent Number: WP120373T)	Hawke's Bay Regional Council	Resource consent	Water permit to divert water and to take up to 11.1 m ³ /s of water from the Waipawa River near Makaroro Road approximately 4.5km west of State Highway 50, within the areas shown on Plans 1 and 4 in Schedule 2, and to subsequently take the same water from the water distribution network and to use that water for water supply and for irrigation purposes on production land, as part of the operation of the Ruataniwha Water Storage Scheme, within: The areas located on the Ruataniwha Plains identified as Zones A – D to the west of Waipawa and Waipukurau shown on Plan 8 in Schedule 2 (being properties which are the subject of a Land Use Consent Application for the Use of Production Land to the Hawke's Bay Regional Council); and Other properties beyond the Consent Application Areas for the Use of Production Land (shown on Plans 8 and 9) which are the subject of an existing Water Permit as shown on Plan 10 in Schedule 2 and as set out in the list of 'Existing Water Permit Holders beyond the Land Use Consent Application Area for the Use of Production Land' in Schedule 3.

Construction, operation and maintenance of downstream water intake facilities

NSP 13/02. 006 (HBRC Consent Number: LU120374C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain water intake facilities on the true left bank of the Waipawa River near the southern end of Walker Road approximately 1km upstream of the confluence with the Tukituki River (referred to as the 'Downstream Water Intake Structure') within the area shown on Plan 5 in Schedule 2 forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 007 (HBRC Consent Number: WP120375T)	Hawke's Bay Regional Council	Resource consent	Water permit to divert water and to take up to 1.82 m ³ /s of water from the Waipawa River near the southern end of Walker Road approximately 1km upstream of the confluence with the Tukituki River, within the areas shown on Plans 1 and 5 in Schedule 2, and to discharge that water into a primary distribution system (being the old Waipawa River bed/Papanui Stream) and to subsequently take the same water from the Zone M Primary Distribution headrace and to use that water for water supply and for irrigation purposes on production land within the area located on the Ruataniwha Plains identified as Zone M to the east of Waipawa as shown on Plan 9 in Schedule 2 (being properties which are the subject of a Land Use Consent Application for the Use of Production Land to the Hawke's Bay Regional Council), forming part of the operation of the Ruataniwha Water Storage Scheme.

Construction, operation and maintenance of the water distribution network

NSP 13/02. 008 (HBRC Consent Number: LU120376C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain siphons, pipelines and/or culverts associated with a water distribution network in, on, under, and over (and within 6m of) the beds of the following rivers and streams: <ul style="list-style-type: none"> – Waipawa River; – Mangaoho Stream; – Kahahakuri Stream; – Ongaonga Stream; – Tukituki River; – Tukipo River; – Makaretu River; – Porangahau Stream; and – Various tributaries to the above rivers and streams, and including the un-named streams at the locations shown on Plan 11 in Schedule 2, forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 009 (HBRC Consent Number:	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain the primary headrace canals and pipelines within, and within 6m of, the beds of rivers and streams and emergency overflow/spillway discharges to land and surface water from the primary

LU120377C)			headrace and pipelines shown on Plan 1 in Schedule 2, forming part of the Ruataniwha Water Storage Scheme.
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Construction, operation and maintenance of water outfall structures

NSP 13/02. 010 (HBRC Consent Number: LU120378C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain a water outfall structure on a tributary to the Mangaonuku Stream near Tikokino Road approximately 2km upstream of the confluence with the Waipawa River, within the area shown on Plan 6 in Schedule 2, forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 011 (HBRC Consent Number: DP120379W)	Hawke's Bay Regional Council	Resource consent	Discharge permit to discharge up to 3 m ³ /s of water and any associated contaminants to a tributary to the Mangaonuku Stream via a water outfall structure adjacent to Tikokino Road approximately 2km upstream of the confluence with the Waipawa River, within the area shown on Plan 6 in Schedule 2, forming part of the operation of the Ruataniwha Water Storage Scheme.
NSP 13/02. 012 (HBRC Consent Number: LU120380C)	Hawke's Bay Regional Council	Resource consent	Land use consent, water permit, and discharge permit to construct, operate and maintain a water outfall structure on a farm watercourse/drain connecting to the Kahahakuri Stream approximately 2km upstream of the confluence with the Tukituki River, within the area shown on Plan 7 in Schedule 2 forming part of the Ruataniwha Water Storage Scheme.
NSP 13/02. 013 (HBRC Consent Number: DP120381W)	Hawke's Bay Regional Council	Resource consent	Discharge permit to discharge up to 0.35 m ³ /s of water and any associated contaminants to a farm watercourse/drain connecting to the Kahahakuri Stream via a water outfall structure approximately 2km upstream of the confluence with the Tukituki River, within the areas shown on Plan 7 in Schedule 2, forming part of the operation of the Ruataniwha Water Storage Scheme.

Hawke's Bay Regional Resource Management Plan	Proposed Plan Change 6
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Relief Sought

- 14.1 That the storage capacity of the dam is restricted to 60 million cubic metres with a consequential reduction in the height of the dam;
- 14.2 Structures to ensure fish passages are provided for around the dam wall and all resultant and associated water augmentation;
- 14.3 Prior to construction commencing, a cultural assessment of indigenous biodiversity is commissioned by HBRIC and undertaken by persons selected by all relevant tāngata whenua

- to assess cultural and tikanga Māori values associated with the land that will be covered by the dam and reservoir;
- 14.4 Lease agreements for occupation of the riverbed and margins are agreed between appropriate tāngata whenua entities and Hawke's Bay Regional Investment Company and / or its partners / successors;
 - 14.5 Lease agreements for the occupation of privately owned lands where different components of the dam infrastructure and distribution network are agreed to with landowners, prior to any construction commencing;
 - 14.6 We support the Accidental Discovery Document developed by the Mana Whenua Working group and would like the further provisions made. Ensuring that during earthworks and land disturbance, a cultural observer and a matakite is employed to ensure that in the event of cultural artifacts/taonga being disturbed or uncovered, work is halted, hapū representatives and the Historic Places Trust are informed and work is restarted only after appropriate protocols and practices have been observed / undertaken;
 - 14.7 Ensure fish screen devices and barriers are constructed and utilised to prevent or minimise entrainment and/or harmful effects to aquatic species through electricity generation, flow augmentation and river flushing processes, or water intake, outfall, water diversion or water abstraction activities;
 - 14.8 That sediment traps are employed and maintained and sediment removal is carried out periodically to substantially reduce adverse effects on instream ecology caused or exacerbated by the operation or maintenance of the RWSS and associated infrastructure, particularly adverse effects on aquatic species between the dam and the confluence with the Waipawa River, and for the distribution network;
 - 14.9 Construction, governance, management and operation of the dam and associated infrastructure is such that it does not create further Treaty grievance, and consents if granted, take into account Schedule 1 of the Regional Resource Management Plan;
 - 14.10 That soft start-up and shut-down processes are used for outfalls and discharges to water distribution infrastructure to reduce and mitigate adverse effects from the operation of these consents;
 - 14.11 The sustainable management of diverted water so as to minimise adverse effects of dissolved nutrients and other contaminants on in-stream health and ecology, and ground water and aquifer quality;
 - 14.12 Ensure that the concentration of contaminants and nutrients are kept below a specified limit prior to water diversion, and monitoring of water contaminants is carried out at the sub-catchment level;
 - 14.13 Disturbance of stream beds and their margins is kept to a minimum;

- 14.14 No sealing of river or stream beds, such that it impedes or restricts ground water recharge or has adverse effects on ground water abstractions;
- 14.15 Establish wetlands along the Makaroro River between the dam site and the Waipawa River confluence with the Mangaonuku, and include consent conditions for their maintenance and enhancement;
- 14.16 Management of water quality such that it does not cause adverse effects on the receiving environment, on Māori cultural values, aquatic ecosystem values, or the quality of water taken for domestic use or for stock water provision;
- 14.17 Management of water in the Tukituki catchment such that it does not cause water quality limits to be exceeded or existing water quality in the Ruataniwha aquifer system to decline;
- 14.18 Augmentation of the Waipawa River or its tributaries to ensure constant flow between Highway 50 and the confluence with the Mangaonuku Stream;
- 14.19 Provision for tāngata whenua involvement in detailed planning for the Ruataniwha Water Storage Scheme;
- 14.20 Ensure that State of the Takiwa cultural monitoring and assessment is commissioned and completed for the Makaroro and Waipawa Rivers, the Papanui Stream and the Lower Tukituki River prior to any construction works commencing;
- 14.21 HBRIC should also be applying for a consent to discharge nutrients and contaminants to the coastal marine area due to the potential for sediment and contaminant loadings caused by RWSS activities;
- 14.22 Provision for 8 flushing events on each of the Waipawa River, the Kahahakuri Stream, the Mangaonuku Stream and the Papanui Stream during the irrigation season (1st October to April 30th), such events triggered by periphyton biomass, nutrient concentrations or water temperatures, or low flow levels in these water bodies; In the Waipawa River as measured above the confluence with the Mangaonuku, the Kahahakuri at Onga Onga Road Bridge, or the Mangaonuku above the confluence with the Waipawa River (Argyll Road bridge);
- 14.23 Restrict the total instantaneous rate of take from surface water bodies in the Tukituki catchment (as identified in Table 5.9.4) to 2,550 litres per second until such time as the dam is operational;
- 14.24 Greater consideration for the interaction between surface water and groundwater than is currently acknowledged in provisions in proposed Plan Change 6, particularly in relation to ground water recharge, influence of ground water abstractions on surface water flows where they exit the Ruataniwha Plains and the actual and potential effects of cross-transfer of contaminants between separate layers of aquifer, and between separate aquifer systems;

- 14.25 Setting of restrictions to ensure no further degradation of ground water quality within the Ruataniwha and Papanui aquifer system;
- 14.26 The taking into account of recommendations from the WAI 262 report in terms of taonga species, rivers and their relevance to Māori, and the need to arrest species loss or decline;
- 14.27 The provision of flushing flows for the Kahahakuri, Mangaonuku and Papanui Streams and an increase in total volumes for flushing events from 2 Million cubic metres to 4 Million cubic metres;
- 14.28 Ensure the creation of 110 hectares of additional indigenous forest habitat as public reserve within the Makaroro sub-catchment to replace terrestrial habitat loss caused by dam construction and filling of the dam reservoir;
- 14.29 Commission and ensure that State of the Takiwa monitoring and assessment is carried out on the area proposed for the dam reservoir prior and post construction;
- 14.30 The use of medians and averages from over the irrigation season (1st October to 30th April) to model and help determine adverse effects on water quality and water quantity, set sustainable limits on a range of parameters, and to assess likely effects on aquatic fauna and flora;
- 14.31 The setting of restrictions for irrigation and agricultural discharges over land with shallow soils underlain by shingle or sand;
- 14.32 The presumption that rainfall is likely to increase over summer-autumn periods (AEE Part C p46) is not backed up by sound data or historical reality given the increasing prevalence of drought events since 1997;
- 14.33 Restrictions on the duration of abstraction periods for consents to 22 hours per day;
- 14.34 Allowance for a constant 1.5 cubic metres per second residual flow from the reservoir;
- 14.35 Allowance of water volume of 30 litres per second and associated infrastructure for Lake Whatuma (Hatuma) to enhance water quality and water quantity in the lake;
- 14.36 Ensure monitoring of water quality variables at the sub-catchment level, using water quality sonde recorders to capture changes in environmental state over time. Include in this suite of data – diurnal fluctuations for dissolved oxygen saturation;
- 14.37 The construction of aeration devices within the distribution network and outfall structure to facilitate oxygenation of water;
- 14.38 That following completion of the dam and infrastructure, on 3 occasions during the irrigation season and while normal abstraction is occurring, HBRIC is required to undertake trials and flow gauging on the Mangaonuku, Kahahakuri and Papanui Streams and the Makaroro,

Waipawa and Tukituki Rivers to assess likely flow losses to ground water through stream and river beds, and the effects of this on flow augmentation scenarios;

- 14.39 Include a non-irrigation period from April 30 to August 30 each year to facilitate ground water recovery and rejuvenate spring flows;
- 14.40 Include conditions on irrigation consents from RWSS storage that restrict irrigation to soil water holding capacity, crop water requirements, and a maximum of 20 hours per day;
- 14.41 Construct braided river habitat (through river works and engineering) sufficient to compensate for the amount lost on the Makaroro River;
- 14.42 That contractors utilise gravel from the Waipawa River above the confluence with the Mangaonuku Stream for dam construction, thus enabling fish passage and better connectivity within this part of the catchment;
 - 1. 14.43 Off-sets are proposed for phosphorus mitigation but there are no parallel off-sets for nitrogen. We ask that nitrogen off-sets be developed;
- 14.44 Apart from actual dam construction, a condition is imposed restricting earthworks to the period between September 1st and May 30th each year;
- 14.45 The applications for water permits and their descriptions (AEE Part C p83) do not include the parameter “for environmental enhancement” or “environmental mitigation” purposes (flushing flows, wetland development, off-sets etc.) Ensure that water permits for environmental parameters are applied for.
- 14.46 Restrict or manage contaminant levels and concentrations in the dam reservoir so that adverse effects on fish including their various life stages are avoided, and when released, water does not cause adverse effects aquatic life, oar on surface or ground water quality downstream, particularly in other sub-catchments;
- 14.47 That construction is delayed until all other relevant consents are granted;
- 14.48 Ensure “natural state” classification for the Makaroro catchment above the proposed reservoir and for the Ruahine Forest Park;

15. Use of production land and planting and associated works in Flood Control Scheme area

NSP 13/02. 014 (HBRC Consent Number: LU120382L)	Hawke’s Bay Regional Council	Resource consent	Land use consent for the use of production land pursuant to section 9(2) of the Resource Management Act 1991 within the Tukituki River catchment facilitated within the Ruataniwha Water Storage Scheme (a Community Irrigation Scheme) Area identified as Zones A – D to the west of Waipawa and Waipukurau and as Zone M to the
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			east of Waipawa on Plans 1, 8 and 9 in Schedule 2.
NSP 13/02. 015 (HBRC Consent Number: LU120388P)	Hawke's Bay Regional Council	Resource consent	Land use consent for plantings and associated works within the Upper Tukituki Flood Control Scheme area as proposed in the report: ' <i>Ruataniwha Water Storage Project: Proposed Integrated Mitigation and Offset Approach</i> ' forming part of Part C – <i>Assessment of Environmental Effects of the Ruataniwha Water Storage Scheme Resource Consent Application Suite</i> .

a) *Consent LU120382L should also be subject to RMA section 15 (1) due to the actual and potential effects of the use of production land on ground and surface water quality;*

b) *The construction of wetlands along the Makaroro and Waipawa Rivers downstream of the proposed dam as partial biodiversity off-set*

PART B

16. Proposed Plan Change 6 to the Hawke's Bay Regional Resource Management Plan

NSP 13/02. 001	Hawke's Bay Regional Council	Plan Change	Inserts new sections in Chapters 5 (5.9) and 6 (6.9) of the Hawke's Bay Regional Resource Management Plan specifically relating to the Tukituki River Catchment; and Makes a number of consequent amendments to existing provisions in the Hawke's Bay Regional Resource Management Plan.
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In terms of proposed Tukituki Plan Change 6 and the provisions therein, Ngāti Kahungunu Iwi Incorporated seeks the following relief: -

- 16.1 Inclusion of the following phrase as an objective "Restoring and protecting the health and wellbeing of the Tukituki for future generations".

This is paramount to Ngāti Kahungunu and arguably the whole community. In order to achieve this outcome the best interests of the awa must be first and foremost, 'Mana o te Awa'.

The maintenance or enhancement of ground water and surface water quality within the Tukituki Catchment;

- 16.2 The maintenance or enhancement of the life-supporting capacity within the Tukituki River, the Waipawa River and their tributaries;

- 16.3 Greater protection of the Ruataniwha aquifer system from landuse effects, particularly within aquifer recharge zones, and addition of further parameters to water quality tables including soluble inorganic nitrogen, and the retention of faecal and suspended solids parameters, but as standards;
- 16.4 Better recognition of and provision for the relationships of Māori with their taonga within the Tukituki catchment, than is currently provided for in proposed Plan Change 6 and greater consideration for Taonga, Tikanga and Kaitiakitanga values;
- 16.5 Substantial reductions in nitrogen leaching quantities (where these are categorised as limits or targets, and the changing of “limits” to “standards”. In addition the inclusion of soluble inorganic nitrogen standards to prevent adverse effects on instream health, and the addition of soluble inorganic nitrogen, soluble reactive phosphorus, suspended solids, temperature, and periphyton standards at the sub-catchment (as defined by Schedule XIV) level;.

In this manner, it will be easier to correlate cause and effect relationships between pollutant sources and instream health, when monitoring catchment health, and help to facilitate more accurate source apportionment modeling for the setting of maximum allowable nutrient/contaminant loads, while remaining cognisant of the underlying purpose of the Resource Management Act, 1991.

- 16.6 Require charges/levies in the Tukituki catchment for all additional nitrogen leaching above 4 kilograms per hectare per year, such fees to be used for monitoring, research and environmental mitigation purposes.

In the proposed plan there is an assumption that what occurs in terms of water pollution from landuse activities is acceptable. What is actually happening is that private commercial activities are achieving economic benefits at the expense of the environment, Māori cultural imperatives and public amenity values associated with the Ruataniwha aquifer system, the Tukituki River and its many tributaries. More than 4,000 tonnes of nitrogen are estimated to leach into the Tukituki catchment per annum (Lynch 2013). Leached nitrogen is therefore a waste product from landuse activity. At \$745 per tonne, farmers in the catchment are collectively wasting the equivalent of \$2,980,000 per year. The effects of this on the coastal environment in Hawke’s Bay have not yet been quantified.

- 16.7 Management of landuse at the sub-catchment level (as defined in proposed Schedule XIV) requiring properties calculated to be leaching more than 4 kilograms nitrogen and less than 7 kilograms per hectare per year to obtain controlled activity resource consents. Where calculations/modeling indicates more than 7 kilograms per hectare using a modeling process approved by HBRC, the requirement for a resource consent for a restricted discretionary activity;
- 16.8 Vastly improved management of the Tukituki headwaters sensitive catchment in terms of nutrient discharges, discharges of other contaminants, aquifer recharge and irrigation;

- 16.9 Plan provisions requiring all landuse on properties larger than 4 hectares within the Tukituki sensitive catchment (as defined by RRMP Schedule VI b) to have nutrient budgets and/or Farm Environmental Management Plans by 2016.

Make consequential amendments to the schedules in the proposed plan wherein Nutrient Budgets and Farm Environmental Management Plans are prescribed so that ground and surface water quality are accorded better protection, to enable them to assist in compliance with a broad range of environmental, cultural, economic, and amenity values. The current schedules as proposed (Schedules XIX, XXI and XXI) need to include additional parameters to help maintain or enhance water quality to achieve a set suite of standards, and steer towards alignment with Objective 5 of the NPS for Freshwater, inter alia: -

“To control the effects of Land-use Development and discharges of contaminants to avoid further degradation of Freshwater Resources”

- 16.10 Change the MAZL classification to cater for sub- catchments, i.e. Maximum allowable sub-catchment loads (MASCL's) with total allowable quota for Nitrogen and Phosphorus discharges to land and water, citing maximum limits per hectare (in kilograms/hectare/year), and maximum tonnes per sub-catchment for these substances, particularly where they leach to ground water or surface water.

In this manner, Hawke's Bay Regional Council will be better able to discern which sub-catchments are improving and where local problems and excessive nutrient contributions are occurring, thus enabling better management of nutrients / contaminants. The discrediting and cessation of Enviro-N and other nitrogen inhibitor use, means that potential mitigation practices are no longer being used.

- 16.11 Imposition of a \$0.05 per cubic metre charge on all water abstraction from within the Tukituki catchment where the water is used for irrigation, such monies to be used for iwi/hapū cultural monitoring and kaitiakitanga purposes, including environmental mitigation and enhancement.

Constant over-abstraction (in terms of the operative plan), the more frequent drying up of rivers and streams and the decline of water quality and habitat has sidelined tāngata whenua interests, involvement with, and use of our awa and their natural resources. The reports and recommendations from the Land and Water forum support greater levels of engagement and inclusion of Māori in decision-making around water, and the NPS for freshwater Management stipulates that tāngata whenua values and interests are identified and reflected in the management of freshwater. These arrangements should be planned and discussed upfront by all relevant tāngata whenua parties and not prescribed by central or local government, to ensure robust and enduring outcomes and with respect to Te Tiriti o Waitangi. Some Māori values are included in the Regional Policy Statement (RPS) but there is no linkage between these values and what is proposed in Plan Change 6. We therefore ask

that cross-references are made between the rules and policies in Plan Change 6 and the Māori values and provisions in the RPS and the regional plan, including those in Plan Change 5 and Schedule 1.

Consequential to the above, a more detailed definition of Mauri is required as the current definition in the regional plan does not encompass tāngata whenua concepts or interpretations of what Mauri means.

- 16.12 Include provisions that maintain or enhance fish passage within the Tukituki, Waipawa and Makaroro, Makaretu and Tukipo Rivers, and the Maharakeke, Mangaonuku and Porangahau Streams. No further fish passage obstructions are allowed within the Tukituki catchment.
- 16.13 Create another Schedule or Table and accompanying Index (hereinafter referred to as Table X) similar to Schedule AB in the Horizons OnePlan as amended by Environment Court decisions, specifying the core values to be managed for within the Tukituki catchment, and drafted with reference to the sub catchments defined in proposed Schedule XIV and Lake Hatuma.

We ask that this Table identify surface and ground water bodies in the Tukituki catchment, aquifers, wetlands, lakes and river reaches, and at a minimum, that the Schedule include the parameters – Life-supporting capacity, Aquatic ecosystem, Contact recreation, Mauri, Irrigation, Natural State, Sites of significance – Aquatic, Sites of significance – Cultural, Fish migration, Mahinga kai, Taonga, Kaitiakitanga, Tikanga, Trout spawning, Trout fishery, Inanga spawning, Whitebait migration, Water supply, Aquifer recharge and Aesthetic; with such water bodies being managed to ensure these values are maintained or enhanced.

Attached to this we also seek addition of a Table with the numeric's and limits for Soluble Reactive Phosphorus; pH; Temperature range; Dissolved Oxygen levels; Biological Oxygen Demand⁵; Periphyton (mg/m³); Dissolved Reactive Phosphorus; Soluble Inorganic Nitrogen; Sediment Cover; Ammoniacal Nitrogen and levels of protection for toxicity.

- 16.14 The use of Soluble Inorganic Nitrogen and Dissolved Reactive Phosphorus, as determinants for monitoring and assessing instream health and water quality in the sub-catchments, tributaries and river reaches within the Tukituki catchment. This can then be extrapolated out to the water management zones to help achieve integrated management of water resources, and concentration levels used as indicators for source apportionment modeling;
- 16.15 Retention of the minimum flow sites and Stream Management Zones for the Tukituki catchment as per the operative Regional Resource Management Plan, August, 2006, and addition of another minimum flow site for the Tukituki River at Onga Onga Road Bridge. Include these sites and appropriate flow minima in Table 5.9.3 and Schedule XVI;
- 16.16 When assessing and making decisions on resource consent applications for water abstraction from within the Tukituki catchment, Hawke's Bay Regional Council will require that where such consents are renewed, weekly volumes that have not been fully utilised will be reduced

to the maximum weekly volume of abstraction (actual) over the term of the previous consent, where such abstraction is consistent with that consent's conditions.

- 16.17 Where stock water use is for a commercial operation on irrigated land, we ask that such water use is assessed as a restricted discretionary activity and part of a stream, river or water management zone's total allocation volume. Within the duration of the current regional plan, stock water races were categorised as consented activities and as such, subject to minimum flow restrictions. Since these water race volumes have been transferred to irrigation, the total amount of abstraction has risen, along with the water volumes required for stock use. Resource consents are required for small irrigation consents of 400 cubic metres per week, but proposed Plan Change 6 has deemed stock water use a permitted activity, when large operations which use more than 400 cubic metres per week for stock water may cause more significant adverse effects than small irrigation takes, particularly during flow recession or periods of low aquifer pressure. The premise that section 14 (3) (b) of the Act enables stock water use as a permitted activity has disregarded the proviso's in section 14, i.e.: -

"... used for

(i) an individual's domestic needs; or

(ii) the reasonable needs of an individual's animals for drinking water, -

and the taking or use does not or is not likely to have an adverse effect on the environment."

- 16.18 The downward adjustment of the weekly allocation volumes for surface water abstraction in proposed Table 20, so that total abstraction volumes and total abstraction rates do not exceed current volumes and rates within the Tukituki catchment until such time as a community irrigation scheme is built and supplements instream flows;
- 16.19 For surface water, seasonal restrictions on abstractions and implementation of consent conditions so volumes equate to actual crop need, crop growing seasons and when utilised, irrigation is restricted by soil moisture content, and subject to minimum flow restrictions;
- 16.20 Staged reductions in water abstraction consents when flow is at 2 x minimum flow and 1.5 x minimum flow for main stems of the Tukituki and Waipawa Rivers, and 3 x minimum flow and 2 x minimum flow for tributaries; such restrictions to apply to surface water and ground water takes with stream depletion effects;
- 16.21 As there are alternative methods for frost protection, make water takes for frost protection subject to minimum flows, the exception being ground water takes for frost protection without stream depletion effects;
- 16.22 Enabling of cultural monitoring and assessment of rivers and streams within the Tukituki catchment as part of State of the Environment monitoring, assessment and reporting; including baseline surveys before any 'changes', during and after.

- 16.23 Imposing minimum flow provisions for the Waipawa River at State Highway 50 and the Tukituki River at the Onga Onga - Waipukurau Road Bridge;
- 16.24 Delete the Morgan seasonal estimates from Table 1 - Groundwater Takes in the Allocation Zones Identified by Schedule XVII, as they are not relevant in an over-allocated catchment;
- 16.25 Include consideration for Policy 16 and Policy 20 of the Regional Policy Statement in proposed Plan Change 6 provisions relating to water management and land management within the Tukituki catchment and Tukituki headwaters;
- 16.26 Amend the proposed plan so that where a resource consent is sought for abstraction of groundwater from outside of specified ground water zones, they will be considered at the sub-catchment level, and their effects on sub-catchment stream health, contribution to main-stem water quantity and quality, and effects on other users will form part of the assessment criteria;
- 16.27 Include seasonal restrictions for all irrigation consents that utilise water from surface or ground water, but exclude water takes from water storage dams;
- 16.28 Change water quality limits to standards throughout the proposed plan; more monitoring in terms of scale and methodologies for water quality and adverse effects on flora and fauna in the Tukituki catchment and receiving estuarine and marine environment
- 16.29 Establish a charging regime whereby nitrogen leaching above 7 kilograms per hectare attracts a levy to be used for water quality monitoring and environmental mitigation or enhancement purposes;
- 16.30 Amend Rule TT1 so that Policies 16 and 20 are referred to; RMA section 15 is included in the Activity column; the rule becomes a controlled activity, and the conditions, standards terms are reworded to apply to the Matters for control/discretion column. Also include reference to a Table (X) that contains all relevant values for the sub-catchments where the activity is to occur, and make this rule applicable to activities that leach more than 4 kgs/ha/year of nitrogen;
- 16.31 Include weekly maxima for total abstraction volumes within each sub-catchment within the Tukituki catchment, these to be derived from total Zone allocations and seasonal allocation limits in Table 5.9.4;
- 16.32 Enable sufficient flow augmentation of the Tukituki main stem to supplement lake levels in Lake Hatuma (Whatuma);
- 16.33 Retain reference to the Ruataniwha Plains aquifer system in Table 10;

- 16.34 Appropriately mitigate the loss of habitat for and population loss of rare and endangered terrestrial and aquatic species.
- 16.35 Make a consequential change to Schedule VIb to include reference to nitrogen, nutrient and fertiliser use.
- 16.2.1 The maintenance and enhancement of the life-supporting capacity within Tukituki catchment groundwater and aquifer, including protecting and enhancing the mauri and ecosystems of groundwater, aquifers and springs.

They contain invertebrates and living ecosystems with biochemical and ecological functions. Knowledge of groundwater fauna is poor worldwide – NZ is further behind the rest of the world in terms of community appreciation of their existence and describing local species or their ecology (Dr M. Scarsbrook NIWA). There is little knowledge regarding their extent and distribution, including the insects, molluscs, crustacean and worms in NZ aquifers. Most of the inverts are scavengers that graze on organic matter. Inverts are potentially important bio-indicators of aquifer water quality and indirectly the impacts of overlaying land-uses. Bio-remediators, feeding on waste that could potentially harm human health and clog aquifer pores, which would in turn slow groundwater flow. Recharge and discharge have different fauna, their community structure can describe water bodies and their hydrological connections with groundwater and surface water. It is vital to understand the human impact on groundwater quality.

17. Consequential changes

- 17.1 Amend the definition for “Mauri” in the glossary of the regional plan to encompass the full meaning and significance of Mauri to tāngata whenua as consultation with hapu has highlighted their concerns around Mauri, yet the (operative) definition restricts consideration for the rights and interests of tāngata whenua;
- 17.2 Amend the Objectives, Policies, Rules, Schedules and Tables within the proposed plan to avoid, remedy or mitigate adverse effects of the proposed plan change on the coastal environment near the Tukituki Estuary; and
- 17.3 Make any consequential amendments to other parts of the proposed plan to make it consistent and coherent.

18. Reasons:

- 18.1 HBRC did not fulfill all of its statutory obligations during the preparation and drafting of Plan Change 6.

- 18.2 The proposed plan fails to promote the sustainable management of natural and physical resources as prescribed in the Resource Management Act, 1991.
- 18.3 The proposed plan is inconsistent with parts of the Hawke's Bay Land and Water Strategy, and does not give effect to the Regional Policy Statement or the National Policy Statement on Freshwater insofar as providing for the values and interests of Māori, and the sustainable management of fresh water.
- 18.4 The section 32 analysis failed to address all relevant matters and the resultant plan change lacks cohesion and appropriate consideration for water quality, water quantity and tāngata whenua values and interests.
- 18.5 Water abstractors in this catchment have not utilised their full allocations of water despite several recent drought events, so their unused volumes should be clawed back as the catchment is over-allocated, in terms of appropriate habitat values and ecological protection.
- 18.6 The proposed plan assumes that the Ruataniwha Water Storage project will be completed by 2018 when no major dams within New Zealand have been completed within their original time frame projections or cost estimates. If the Ruataniwha Dam is not completed by 2018, several key parts of the proposed dam, reservoir and distribution network will be affected and a further expensive and time-consuming plan variation process will need to be undertaken.
- 18.7 Sustainable management is a consistent and ongoing responsibility and the core purpose of the Resource Management Act, 1991. It needs to be achieved constantly, not put off until sometime in the future.
- 18.8 Non-point source losses of nutrients and contaminants to ground and surface water remains largely unregulated despite being identified as responsible for the major percentage of fresh water pollution in New Zealand
-

19. Amendments sought for Proposed Tukituki Plan Change 6, verbatim:

For the relief sought via this part of our submission, the following applies:

- i) Where underlined text refers to a specific provision in proposed PC6, add the text.
- ii) Where a part of proposed PC6 is ~~struck through~~, delete this from the proposed plan.
- iii) Make consequential changes to other parts of the Regional Resource Management Plan to make them coherent and/or consistent with the relief sought.

- iv) Make other minor amendments provided the nature and intent of the relief sought through this submission is maintained.
- v) Substantially retain the rest of Tukituki Plan Change 6 as proposed.

5.9.1 Fresh Water Objectives

TT1 To sustainably manage the use and development of land, the discharge of nutrients and contaminants, and the taking, using, damming, or diverting of fresh water in the Tukituki River catchment so that:

- (a) River flows and water quality maintain or enhance the habitat and health of macroinvertebrates, native fish and trout;
- (b) Water quality enables safe contact recreation;
- (c) ~~There are fewer occurrences of e~~Excessive periphyton growths that adversely affect recreational use, tikanga Māori values and interests, and public amenity values are restricted;
- (d) The significant values of ~~natural~~ wetlands are protected;
- (e) The mauri of surface water bodies and groundwater is recognised and provided for, and adverse effects on aspects of water quality and quantity that contribute to healthy mauri are avoided, remedied or mitigated; and~~;~~
- (f) The life supporting capacity of water bodies in the Tukituki catchment is maintained or enhanced

TT2 Where the quality of fresh water has been degraded by human activities to such an extent that Objective TT1 is not being achieved, to improve its quality over time.

TT3 To ensure that:

- (a) As a first priority land use activities and discharges to land do not cause groundwater quality to degrade, ~~to the extent that it is unsuitable for domestic and stock water drinking purposes, or~~
- (b) Alternatively if such degradation does occur, the water supplies of the affected people and communities are treated by those responsible for such degradation, to an appropriate standard for the uses being made of the water or alternative potable water supplies that are fit for purpose are provided.

TT4 In recognition that the security of supply for existing surface water irrigation takes is low, to avoid any ~~further~~ additional allocation of surface water and groundwater to individual consented abstractors and not reallocate water that is freed up through the surrender or non-renewal of individuals' existing surface water and groundwater take consents.¹

TT5 Subject to Objectives TT1 to TT3, to enable the development of on-farm storage^{1A}, Community Irrigation Schemes² that improve the sustainable management, and maximise the efficient allocation and efficient use of water.

¹ This does not preclude the transfer of existing takes

^{1A} Means on-farm water storage that is filled via abstraction using a high-flow allocation methodology when the flow in a river or stream is above Mean Annual Flow

2 References to Community Irrigation Scheme in chapter 5.9 of the RRMP means a water supply system that is capable of supplying irrigation water to at least 5,000 hectares of land.

5.9.2 Water Quality Policies

POL TT1 SURFACE WATER QUALITY ~~LIMIT~~STANDARDS, TARGETS AND STATE INDICATORS

1. In surface water bodies³ in Water Management Zones 1, 2, 3, 4 and 5 Hawke's Bay Regional Council will (in Table 5.9.1B):

(a) Set instream water quality concentration ~~limit~~standards^{4A} ~~and targets~~⁴ for nitrate-nitrogen (NO³-N), and soluble inorganic nitrogen (ammonium NH⁴⁺-N plus nitrate NO³-N plus nitrite NO²-N) to avoid toxicity effects, reduced dissolved oxygen effects, objectionable periphyton growth and other adverse effects on aquatic fauna and flora;

(b) Set instream water quality concentration ~~limit~~standards^{4A} ~~and targets~~⁴ for dissolved reactive phosphorus (DRP), soluble inorganic nitrogen (SIN), and instream targets for periphyton biomass and cover ~~(with the targets to be met by 1 July 2018/30).~~

2. In surface water bodies in Water Management Zone 4 Hawke's Bay Regional Council will (in Table 5.9.1B) set soluble inorganic nitrogen and dissolved reactive phosphorus limits that reflect existing⁵ instream water quality concentrations in recognition that the existing level of periphyton biomass and cover is currently acceptable and it should not be permitted to increase due to that Zone's existing high cultural, public amenity and biodiversity values.

3. In surface water bodies⁶ in all Water Management Zones Hawke's Bay Regional Council will:

(a) Set (in Tables 5.9.1A) instream water quality limits for Temperature, and instream water quality limits for Dissolved Oxygen, *Escherichia coli* (*E. coli*), Total Ammoniacal Nitrogen, dissolved reactive phosphorus, soluble inorganic nitrogen, cyanobacteria, dicyandiamide and Other ToxicantContaminants;

(b) Set (in Table 5.9.1B) environmental state indicators⁷ for the Macroinvertebrate Community Index (MCI), Visual Water Clarity and Deposited Sediment.

(c) Enable the cultural monitoring of water bodies to assess and report on their cultural health state from a tikanga Māori perspective.

4. Manage point source discharges, discharges to land and to water, and the use of production land upstream of any registered drinking water supply takes to prevent adverse effects on water bodies, and ensure compliance with the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007, and the Drinking-Water Standards for New Zealand).

POL TT2 GROUNDWATER QUALITY LIMITS

1. For groundwater Hawke's Bay Regional Council will:

(a) Subject to OBJ TT3, manage activities likely to adversely affect the quality of groundwater located 10m or more below ground level in accordance with the limits for aesthetic, organic and inorganic

determinands; *Escherichia coli*, and nitrate-nitrogen, soluble inorganic nitrogen, and faecal coliforms set in Table 5.9.2;

(b) Manage point source discharges, discharges to land and water, and the use of production land upstream of any registered drinking water supply takes to prevent or mitigate adverse effects on surface water, and ensure compliance with the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 and the Drinking-Water Standards for New Zealand.

³ ~~Excluding Lake Hatuma.~~

⁴ “~~Limit Standards~~” apply where the existing water quality is better than the desired numerical value and “~~targets~~” apply where the existing water quality is worse than the desired numerical value.

⁵ In POL TT1 to TT15 and Rules TT1 to TT5 “existing” means as at [date of PC notification].

⁶ ~~Excluding Lake Hatuma.~~

⁷ “Indicators” define what the state of certain water quality parameters should be in order to safeguard the life supporting capacity of the water body but they are not “limits” or “targets”. The “indicators” stated will be used by Hawke’s Bay Regional Council to monitor the effectiveness of the RRMP in achieving the purpose of the RMA in the Tukituki River catchment.

POL TT3 RECEIVING ENVIRONMENT ~~LIMIT~~STANDARDS FOR POINT SOURCE DISCHARGES

1. In surface water bodies⁸ in all Water Management Zones Hawke’s Bay Regional Council will manage point source discharges so that after reasonable mixing, contaminants discharged (either by themselves or in combination with the same, similar, or other contaminants), do not cause the following receiving environment limits to be exceeded at any time⁹ all year round:

(a) The percentage reduction to the Quantitative Macroinvertebrate Community Index (QMCI) score relative to the QMCI upstream of the discharge should not exceed ~~±~~10% at all flows;

(b) The daily average of the five days filtered / soluble carbonaceous biochemical oxygen demand (ScBOD⁵) shall not exceed 2 mg/L at flows less than the median flow;

(c) The average particulate organic matter (POM) shall not exceed ~~5~~3mg/L at flows less than the median flow;

(d) The concentration of Total Ammoniacal Nitrogen (TNH₃-N) (at pH=8.0, Temp=20°C) shall not exceed 42.2 mg/L at all flows (to avoid ~~acute~~ toxicity effects)¹⁰;

(e) The percentage reduction to the water clarity relative to the water clarity upstream of the discharge should not exceed:

(i) ~~±~~10% at flows less than the median flow in all rivers in Water Management Zone 4, ~~±~~10% at flows less than the median flow in the mainstem of the Tukituki River in Water Management Zones 1 and 3 and the mainstem of the Waipawa River in Water Management Zone 2;

(ii) ~~±~~15% at flows less than the median flow in all other rivers in the Tukituki catchment.

2. The implementation of POL TT3 (1) shall take into account the need to accommodate:

(a) measurement uncertainties associated with variables such as location, flows, seasonal variation and climatic events;

(b) in relation to discharges, the degree to which a discharge is of a temporary nature, or is associated with necessary maintenance work.

POL TT4 IMPLEMENTING THE TABLE 5.9.1B NITRATE-NITROGEN STANDARD LIMITS

1. To ensure that the Table 5.9.1B ~~nitrate-nitrogen~~ surface water quality ~~standard~~ limits are not exceeded ~~after 1 July 2016~~, Hawke's Bay Regional Council will:

(a) From 1 July 2013 onwards, require properties exceeding 4 hectares in area to keep the records specified in Schedule XXI so that Nutrient Budgets can be calculated using Overseer¹¹ (or an alternative model approved by Hawke's Bay Regional Council¹²) ~~if required prior to 1 July 2018~~;

(b) Require industry good practices (including nitrogen conversion efficiencies and/or nutrient reduction) to be implemented on farms in order to minimise nitrogen losses;

(ba) Manage all nutrient sources and inputs in a manner that restricts nutrient leaching to a level that prevents sub-catchment water quality standards being breached;

~~(c) Recognise that the Tukituki River catchment is generally in a state of under-allocation with respect to instream nitrate-nitrogen limits therefore:~~

(i) Allow a reasonable time (by 1 July 2016~~7~~) for the primary industry sector to develop industry good practice nitrogen leaching rates and nitrogen conversion efficiencies for different land use, soil type and climate, and to provide industry support to farmers to prepare on-farm Nutrient Budgets;

(ii) Where it will contribute to achieving Objectives TT1, TT2, and TT3, require owners or managers of properties of more than 4 hectares to include industry good practice nitrogen leaching rates and nitrogen conversion efficiencies in Nutrient Budgets and Farm Environmental Management Plan~~the~~ the Regional Resource Management Plan via a plan change prior to 1 July 2018;

~~8~~ Excluding Lake Hatuma.

~~9~~ "At any time" means for any single occasion that the water quality immediately downstream of the end of the reasonable mixing zone is sampled.

10 Refer to Schedule XXIII for total ammoniacal nitrogen concentrations at other pHs and temperatures.

11 Overseer is a nutrient budget model that calculates and estimates the nutrient flows in a productive farming system. It is owned and administered by the Ministry of Primary Industry, Fertiliser Association of New Zealand and AgResearch. The Overseer model is available at <http://www.overseer.org.nz/Home.aspx>

12 To be approved by Hawke's Bay Regional Council any alternative nitrogen loss model would need to be fit for purpose for the land use, have a demonstrable repeatability of results, be field tested, reduce nitrogen losses to acceptable levels and be validated to accepted scientific standards.

~~(iii) Provide until 1 July 2016~~8~~ for the managers of existing farming operations to model nitrogen leaching rates through the preparation of Nutrient Budgets¹³ which must be updated at least three yearly and provided to Hawke's Bay Regional Council;~~

~~(iv) Provide until 1 July 2020 for farms to implement any necessary changes to their farming systems to achieve industry good practice nitrogen leaching rates and nitrogen conversion efficiencies;~~

(d) Require the use of production land in those catchments where there are localised exceedences of Table 5.9.1B (surface water) and Table 5.9.2 (groundwater) nitrate-nitrogen ~~target~~ standards¹⁴ to be subject to a land use consent under Rule TT2 if the ~~target~~ standards are still exceeded ~~or become exceeded~~ after 1 July 2016~~8~~;

(e) Manage more than minor increases¹⁵ in existing nitrogen and phosphorus leaching rates through a resource consent process under Rule TT2. Any increase in nitrogen or phosphorus leaching shall generally be determined relative to the greater of the following benchmarks:

(i) A whole of farm leaching rate of ~~15~~ 7 kg/ha/year as determined by a Nutrient Budget; or

(ii) ~~For dairying, sheep and beef, and permanent horticultural crops –~~ The average leaching rate for the whole farm property as modelled by Overseer (or an alternative model approved by Hawke’s Bay Regional Council) over a two year period; or

(iii) ~~For arable farming and cropping –~~ the average leaching rate for the whole farm as modelled by Overseer (or an alternative model approved by Hawke’s Bay Regional Council) over a seven year period;

(iv) Where records are not available to model average leaching rates for a property farm, the methodology described in Schedule XXI shall be used.

(f) Categorise any use of production land as a Restricted Discretionary Activity where the ~~increase in~~ nitrogen leaching as modelled by Overseer (or an alternative model approved by Hawke’s Bay Regional Council) exceeds 107 kgs per hectare per year, the lesser of:

1. An increase of 10 % or more in leaching rate relative to the relevant Policy TT4(1)(e) benchmark; or

2. An absolute increase in leaching rate that equals or exceeds 5 kg/ha/yr.

(g) Require production land that requires a resource consent under POLTT4 (1) (f) or which is located within a sensitive catchment as defined by Schedule VIb to prepare a Farm Environmental Management Plan prepared in accordance with Schedule XXII.

2. To assist with monitoring the effectiveness of POL TT4 (1) the Hawke’s Bay Regional Council will:

(a) Determine maximum allowable ~~water management~~ sub-catchment zone loads¹⁶ (MASCZL) for nitrogen and estimate the actual farm scale nitrogen losses in each zone using the methodology described in Schedule XIX; and

(b) Compare the farm scale nitrogen losses at a ~~water management zone~~ sub-catchment level with the MASCZLs and use this information when assessing resource consent applications for the use of production land and incorporate that information in its regular state of the environment reporting.

13 A Nutrient Budget means either:

(a) a budget prepared in accordance with the “Code of Practice for Nutrient Management (with Emphasis on Fertiliser Use), 2007” published by the Fertiliser Association of New Zealand, and which is prepared or approved by a person who is a Certified Nutrient Management Advisor or who has completed both the “Intermediate” and the “Advanced” courses in “Sustainable Nutrient Management in New Zealand Agriculture” conducted by Massey University. The information requested by the Hawke’s Bay Regional Council shall be provided in an electronic format compatible with HBRC’s information systems and may include but shall not be limited to the following reports from Overseer or their equivalent if an alternative model is used: Nutrient Budget, Nitrogen, Phosphorus, Summary, Nitrogen Overview; or

(b) an auditable sector specific default nitrogen leaching rate derived from industry specific, statistically representative data for nitrogen leaching rates less than ~~15.7~~ kg N/ha/year.

14 At the time of Plan Change notification, there were localised exceedences in the Kahahakuri and Mangapohio tributaries.

15 An increase includes a single increase ~~and~~ or cumulative increases over time.

16 The MASCZL relate to nitrogen leaching losses from the root zone of the soils farmed.

POL TT5 IMPLEMENTING THE PHOSPHORUS AND SOLUBLE INORGANIC NITROGEN LIMIT STANDARDS AND TARGETS

1. To ensure that the Table 5.9.1B dissolved reactive phosphorus (DRP) and soluble inorganic nitrogen (SIN) surface water quality ~~limit~~standards are not exceeded and to attain the Table 5.9.1B DRP and SIN targetstandards¹⁷ by 1 July 2018~~30~~ Hawke's Bay Regional Council will:

(a) In areas where the Table 5.9.1B DRP and SIN targetstandards are exceeded:

(i) Ensure existing point source discharges and cumulative effects of non-point source discharges do not contribute any ~~additional~~ phosphorus or nitrogen load to the Tukituki River or its tributaries, or to ground water that interacts with surface water, and through consent processes seek to reduce existing loads where necessary to progress towards phasing out the exceedence;

(ii) Ensure any new point source discharges will not increase existing DRP or SIN concentrations in the Tukituki River or its tributaries, or to ground water after reasonable mixing;

(b) In areas where the Table 5.9.1B DRP and SIN limitstandards are not exceeded, ensure that any new point source discharges and cumulative effects of non-point source discharges will not cause those ~~limit~~standards to be exceeded in the Tukituki River or its tributaries after reasonable mixing;

(c) Require any application for a resource consent for the use of production land to demonstrate:

(i) In areas where the Table 5.9.1B DRP or SIN limitstandards are not exceeded that the proposed activity will not lead to an exceedence of the ~~limit~~standards in the Tukituki River or its tributaries, or in ground water;

(ii) In areas where the Table 5.9.1B DRP or SIN targets are exceeded that the proposed activity will as a minimum not increase existing DRP or SIN concentrations in the Tukituki River or its tributaries, or in ground water;

(d) Recognise that the middle and lower Tukituki River catchment is generally in a state of over-allocation with respect to instream DRP limits and SIN concentrations, therefore through the implementation of land use rules:

(i) On land that is less than 15 degrees in slope; require livestock to be excluded from lakes, wetlands and permanently flowing rivers and their margins by 31 December 2016~~7~~ and intermittently flowing rivers¹⁸ and their margins by 31 December 2020~~2~~;

(ii) On land that is greater than 15 degrees in slope and where the stocking rate exceeds 18 stock units per hectare; require livestock (except sheep) to be excluded from lakes, wetlands and permanently flowing rivers and their margins by 31 December 2016~~7~~ and intermittently flowing rivers and their margins by 31 December 2018~~22~~.

(iii) Require stock races crossing rivers and streams to be bridged or culverted by 30 June 2016~~7~~;

(iv) For individual properties exceeding 4 hectares in size require a Phosphorus Management Plan¹⁹ and Nutrient Budget;

1. in the Papanui and the Porangahau catchments by 1 July 2016~~7~~;

2. in the Maharakeke catchment by 1 July 2016~~8~~;

3. in the Tukipo, Kahahakuri and Upper Tukituki Corridor catchments by 1 July 2016~~20~~;

(e) Provide land advisory services and incentives, in collaboration with the primary industry sector and the community, prioritising efforts on tributary catchments which significantly exceed the DRP and SIN limitstandards or targets. In particular Hawke's Bay Regional Council will:

(i) Develop a catchment strategy and implementation plan to identify critical source areas for phosphorus and nitrogen, and eliminate or reduce phosphorus and nitrogen losses;

(ii) Encourage industry good practices to be implemented on farms in order to reduce phosphorus and nitrogen losses;

(iii) Encourage riparian planting in conjunction with permanent stock exclusion fencing;

17 The numerical values in Tables 5.9.1A and 5.9.1B are to be treated as “~~limit~~standards” at locations where the existing water quality is better than the relevant numerical value and as “targets” at locations where the existing water quality is worse than the relevant numerical value. At the time of Plan Change notification, only the Waipawa River and Tukituki River catchments upstream of SH50 and the Makaretu River were complying with the ~~limit~~standards.

18 An intermittent river does not flow continuously but has a bed that is predominantly unvegetated and comprises sand, gravel, boulders or similar material.

19 A Phosphorus Management Plan means a plan prepared generally in accordance with industry codes of practice which identifies the inherent environmental risks on the property associated with phosphorus and sediment loss, the significance of those risks, and identifies management practices to be implemented to avoid or reduce the risks. The Phosphorus Management Plan includes a basic nutrient budget as described for Beef and Lamb New Zealand’s Level 2 Land Environment Plan.

(iv) In the Water Management Zone 5 (Papanui), encourage riparian planting which provides shading for rivers and streams in order to reduce macrophyte growth and improve life-supporting capacity of the stream;

(v) Encourage surface runoff from stock races, stock yards, bridges and culverts to be diverted away from rivers and streams and discharged to land;

(vi) Encourage the preparation of Phosphorus Management Plans and Nutrient Budgets in catchments not listed in POL TT5(d)(iv) as a means of identifying critical source areas for phosphorus and nitrogen, and developing site specific actions to eliminate or reduce the risk from those areas.

2. To assist with monitoring the effectiveness of POL TT5 (1) the Hawke’s Bay Regional Council will:

(a) Determine maximum allowable ~~sub-catchment~~ ~~instream water management zone~~ loads²⁰ (MASCZL) for phosphorus and nitrogen using the methodology described in Schedule XIX;

(b) Determine the actual instream water management zone loads for phosphorus and nitrogen based on water quality and river flow monitoring data for comparison with the MASCZLs and incorporate that information in its regular state of the environment reporting;

(c) In ~~2016/20~~ and ~~2020~~5, review the need for an increased regulatory approach taking into account whether:

(i) instream DRP and SIN concentration trends indicate that the Table 5.9.1B DRP and SIN ~~target~~standards are likely to be being met; and

(ii) the indicators set out in the Monitoring, Evaluation, Reporting and Improvement Plan²¹ are being met.

POL TT6 DECISION-MAKING CRITERIA – USE OF PRODUCTION LAND

Land not Associated with the Operation of a Community Irrigation Scheme

1. When considering an application for a land use consent to authorise the use of production land not associated with the operation of a Community Irrigation Scheme, the consent authority must have regard to the following matters:

(a) Whether the applicant has supplied a Farm Environmental Management Plan prepared in accordance with Schedule XXII and that:

(i) Adequately describes the property (including soils, climate, topography and environmental risks) and the proposed land use on the property;

- (ii) Contains a Nutrient Budget²² for the property, including an assessment of the fertiliser inputs, nitrogen conversion efficiency and nitrogen and phosphorus losses;
 - (iii) Describes how industry good practices will be implemented to minimise nutrient (nitrogen and phosphorus) losses, sediment losses and faecal bacteria discharges from the property and achieve a nitrogen conversion efficiency appropriate to the land use, ~~and~~ land type and soil type;
 - (vii) Where the property is in Water Management Zone 5 or a sensitive catchment, ensures appropriate riparian management measures are implemented to minimise nutrient losses and reduce macrophyte growth in order to improve the life-supporting capacity of the river or stream;
- (b) Whether conditions on the land use consent will ensure that the Farm Environmental Management Plan supplied under (a) is maintained, submitted to Hawke's Bay Regional Council as may be required by the Council, and is implemented by the property owner.

20 In this case the MASCZL relates to the annual phosphorus load as measured in the river (note this differs from the MASCZL for nitrogen which relates to a leaching loss at the farm paddock (or root zone) and its relationship to instream SIN concentrations).

21 The Monitoring Evaluation, Reporting and Improvement Plan (MERI) is one of the key programmes of the Tukituki Catchment Implementation Plan which outlines how the non-regulatory approaches in Change 6 will be implemented.

22 As defined in POL TT4.

Land Associated with the Operation of a Community Irrigation Scheme

2. When considering an application for a land use consent to authorise use of production land on multiple properties associated with the operation of a Community Irrigation Scheme, the consent authority must have regard to the extent to which the management plan and/or contractual mechanisms governing the Scheme's operation ensure that:

(a) In each respective Water Management Zone and sub-catchment, the properties serviced by the Scheme will not collectively leach an amount of nitrogen that, in combination with nitrogen leached from non-Scheme properties as a result of production land use activities permitted or regulated by this Plan or authorised by consents already granted, cause the nitrate-nitrogen or SIN standard ~~limits~~ in Table 5.9.1B to be exceeded;

(b) Where the property is in Water Management Zone 5, appropriate riparian management and wetland enhancement measures are implemented to minimise nutrient losses and reduce macrophyte growth in order to improve the life-supporting capacity of the river or stream

(c) In each respective Water Management Zone, the properties serviced by the Scheme will collectively:

(i) In Water Management Zones where the Table 5.9.1B DRP or SIN concentration standards or targets are exceeded, not cause DRP or SIN concentrations in the Tukituki River or its tributaries to increase compared with a baseline measured or modelled at the time of plan notification ~~any resource consent application~~;

(ii) In Water Management Zones where the Table 5.9.1B DRP or SIN concentration limit standards are not exceeded, not cause those ~~limit standards~~ to be exceeded;

- (d) Any property serviced by the Scheme prepares and maintains a Farm Environmental Management Plan prepared in accordance with Schedule XXII and that:
- (i) Adequately describes the property (including soils, climate, topography and environmental risks) and the proposed land use on the property;
 - (ii) Contains a Nutrient Budget for the property, including an assessment of the nitrogen conversion efficiency;
 - (iii) Describes how industry good practices will be implemented to minimise nutrient (nitrogen and phosphorus) losses, sediment losses and faecal bacteria discharges from the property and achieve a nitrogen conversion efficiency appropriate to the land use and land type;
 - (iv) Ensures that the in-stream values and attributes in Table X continue to be achieved or provided for.
- (e) Any property serviced by the Scheme is operated in accordance with its Farm Environmental Management Plan;
- (f) Scheme-wide nutrient loss compliance modeling, auditing and enforcement procedures are implemented for nitrogen and phosphorus.

Land Use Consent Duration

3 From 4 May 2013 any land use consents granted under Rule TT2 to the landowner or occupier shall have the same expiry date as any section 14 water take irrigation consents for the land. If there are no irrigation consents for the land then the maximum duration imposed shall not exceed 35 years.

Table 5.9.1A: Surface Water Quality ~~Limit Standards and Targets~~²³ for the Tukituki River Catchment –Catchment Wide

Parameter	Limit Standard or Target
Temperature	The temperature of the water shall be suitable for sustaining the aquatic habitat and the values in Table X.
Dissolved Oxygen	The concentration of dissolved oxygen shall exceed 80% of the saturation concentration, <u>including during diurnal fluctuations</u> , except where lower concentrations occur under natural conditions (e.g. in areas of groundwater upwelling including the Porangahau, Maharakeke, Kahahakuri, Mangaonuku, Papanui sub-catchments).
<i>E.coli</i>	2600 <i>Escherichia coli</i> per 100 millilitres for the 1 November to 30 April bathing season (for flows below the median flow). 5500 <i>Escherichia coli</i> per 100 millilitres for the 1 November to 30 April bathing season (for flows between the median flow and three times the median flow in the main stems, and the median flow and four times the median flow in tributaries). <u>550 <i>Escherichia coli</i> per 100 millilitres for the rest of the year (for flows below three times the median flow).</u>
Total Ammoniacal Nitrogen (TNH3-N)	The average concentration of Total Ammoniacal Nitrogen (TNH3-N) (at pH=8.0, Temp=20°C) shall not exceed 0.32 mg/L (to avoid chronic toxicity effects on freshwater clams (<i>Sphaerium</i> sp).²⁴ Concentration limits at other pHs and Temperatures are contained in Schedule XXIII.

<u>Dissolved Reactive Phosphorus (DRP) in sensitive catchments</u>	<u>The average concentration of Dissolved Reactive Phosphorus shall not exceed 0.006 mg/L in sensitive catchments as defined in Schedule VIb,</u>
<u>Dissolved Reactive Phosphorus</u>	<u>Throughout the remainder of the Tukituki catchment (except for the Papanui), the average concentration of Dissolved Reactive Phosphorus shall not exceed 0.010 mg/L</u>
<u>Soluble inorganic nitrogen (SIN) in sensitive catchments</u>	<u>The average concentration of Soluble inorganic nitrogen shall not exceed 0.110 mg/L within sensitive catchments as defined in Schedule VIb, within aquifer recharge areas, or above the unconfined Ruataniwha aquifers</u>
<u>Soluble inorganic nitrogen (SIN)</u>	<u>Throughout the remainder of the Tukituki catchment, the average concentration of Soluble inorganic nitrogen shall not exceed 0.444 mg/L</u>
<u>Other Toxicants</u>	<u>95% species protection levels for toxicants as stipulated in the most recent version of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (the ANZECC guidelines).</u>

Table 5.9.1B: Surface Water Quality Limit Standards and Targets²⁵ for the Tukituki River Catchment – Zone Specific.

The Water Management Zones referred to in Table 5.9.1B are mapped in Schedule XV. The key to Table 5.9.1B is provided below the table (page 11).

Water Management Zone	Mainstem s/ Tributaries 26	Periphyton <u>Limit Standards and Targets</u>			DRP <u>Limit Standards and Targets</u> mg/L	Nitrate-nitrogen <u>Limit Standards and Targets</u> mg/L		SIN <u>Limits Standards and Targets</u> mg/L	Indicators		
		(a)	(b)	(c)		(a)	(b)		Water Clarity	MC I	% Sediment Cover
Zone 1 Lower Tukituki and Waipawa Rivers and Tributaries (excluding Papanui Stream catchment)	Mainstems	120	30	60	0.010	2.4 0.4	3.5 1.2	n/a 0.444	2.8	100	10
	Tributaries				0.010 ⁵				1.6	100	n/a
Zone 2 Middle Waipawa River and Tributaries above SH2	Mainstems	120	30	60	0.010	3.8 0.4	5.6 1.2	n/a 0.444	3.0	120	10
	Tributaries				0.010 ⁵				1.6	100	n/a

Water	Mainstems	Periphyton	DRP	Nitrate-	SIN Limits	Indicators
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Management Zone	/ Tributaries	Limit Standards and Targets			Limit Standards and Targets	nitrogen Limit Standards and Targets mg/L		Standards and Targets mg/L	Water Clarity	MC l	% Sediment Cover
		(a)	(b)	(c)		(a)	(b)				
Zone 3 Middle Tukituki River and Tributaries above Tapairu Road	Mainstems	120	30	60	0.010	3.8 0.4	5.6	n/a 0.444	3.0	120	10
	Tributaries				0.0105				1.6 3.0	100	n/a 10
Zone 4 Upper Tukituki and Waipawa Rivers	All	50	30	60	0.004	n/a 0.170	1.5	0.150 0.444	3.3	120	10
Zone 5 Papanui Stream	All	120	30	60	0.015			n/a 0.6	1.6	100	n/a

Key to the Table 5.9.1B limits, targets and indicators:

Periphyton:

- (a) Maximum algal biomass on the river bed in milligrams of chlorophyll a per square metre not to be exceeded within a 30 day accrual period.
- (b) Maximum cover (%) of visible river bed by periphyton as filamentous algae more than 2 centimetres long within a 30 day accrual period..
- (c) Maximum cover (%) of visible river bed by periphyton as diatoms or cyanobacteria mats more than 0.3 centimetres thick within a 30 day accrual period.

Phosphorus:

Maximum annual average concentration of dissolved reactive phosphorus (DRP) when the river flow is at or below 3 times the median flow (mg DRP/L). The annual average concentration of DRP shall be calculated as the average of monthly monitoring results obtained over a period of 5 consecutive years.

Nitrogen:

- (a) Maximum annual median concentration of nitrate-nitrogen (mgs NO3-N /L). The annual average concentration of nitrate-nitrogen shall be calculated as the average of monthly monitoring results obtained over a period of 5 consecutive years.
- (b) Maximum 95th percentile concentration of nitrate-nitrogen (mg NO3-N /L). The 95th percentile concentration of nitrate-nitrogen shall be calculated as the 95th percentile of monthly monitoring results obtained over a period of 2 consecutive years.

Soluble inorganic nitrogen:

Maximum concentration of soluble inorganic nitrogen (mg SIN /L) when the river flow is at or below twice the median flow.

Water Clarity Indicator:

Minimum median visual water clarity at or below median flow (m), measured as the horizontal sighting range of a black disc.

MCI indicator: Minimum average macro-invertebrate community index

% Sediment Cover indicator: Maximum average % fine sediment cover where 'fine' is defined as particles less than 2 mm in diameter (excludes naturally soft bottom streams)

Table 5.9.2: Groundwater Water Quality Limit Standards Applicable 10m or More Below Ground Level in Productive Aquifer Systems

Aesthetic determinands	<i>E.coli</i>	Nitrate-nitrogen	Nitrate-nitrogen	<u>Soluble inorganic nitrogen</u>	All other determinants
Guideline value for any aesthetic determinand [Drinking-Water Standards for New Zealand (DWSNZ)]	Maximum concentration of Escherichia coli per 100 millilitres	Maximum <u>95th percentile concentration of nitrate-nitrogen (mg NO3-N /L)</u>	Maximum annual <u>average</u> concentration of nitrate-nitrogen (mg NO3-N /L)	<u>Maximum concentration of soluble inorganic nitrogen (mg SIN /L)</u>	All other inorganic or organic determinands of health significance [DWSNZ]
Within guideline	<1.0	11.3	5.65-1.7	<u>0.444</u>	Maximum acceptable value (MAV)

5.9.3 Water Quantity Policies

POL TT7 MINIMUM FLOW LIMITS

1. In Surface Water Allocation Zones 1, 2 and 3:

(a) The minimum flow limits in Table 5.9.3 shall apply to consented takes; including consented groundwater takes with High Stream Depletion Classification as described in POL TT11, but excluding Community Irrigation Schemes²⁸ which involve storage of water behind an instream dam and High Flow Allocation takes as described in POL TT10;

~~(b) Transition periods shall be provided to implement increased minimum flows as shown in Table 5.9.3, to provide existing water users a reasonable time to adapt to the reduced security of supply or find alternative sources of water;~~

(c) Subject to (d) below, consented takes from the mainstems of the Tukituki and Waipawa Rivers shall be subject to the downstream minimum flows for the mainstems set in Table 5.9.3. Takes from tributaries shall be subject to both the mainstem minimum flow and the relevant tributary minimum flow set in Table 5.9.3.

(d) Consented takes downstream of the Red Bridge flow management site (Waimarama Rd) shall be subject to the minimum flow limit at the Red Bridge flow management site except for consented takes below Black Bridge (Mill Rd) which shall not be subject to minimum flow restrictions set in Table 5.9.3;

(e) Where a Community Irrigation Scheme stores water and subsequently releases it into a river for use by members of the Scheme, other (non-Scheme) takes from that river will be managed by using a river flow (for the purpose of comparing to the allowable Table 5.9.3 minimum flow) calculated or modelled by Hawke’s Bay Regional Council to be that which would have occurred in the absence of the Scheme. Such modeling will take into account flow losses to ground water and aquifer recharge zones. This will ensure that water stored and released by the Scheme helps to replenish ground water to sustainable levels, or is used by Scheme participant and is not taken by other users.

POL TT8 ALLOCATION LIMITS

1. To manage the taking of surface water and groundwater in the Tukituki River catchment by:

(a) Recognising that ~~although~~ allocation limits for surface water should be determined in order to promote sustainable management and use of the water resource ~~provide a reasonable security of supply (such as avoiding an irrigation ban of ten consecutive days occurring more frequently than one year in ten), this is not achievable in the Tukituki River catchment given the minimum flows set in Table 5.9.3 and the existing volumes of water being abstracted;~~

(b) Recognising that there is a high degree of interconnectedness between groundwater in the Ruataniwha Basin and surface water flows within the basin and consequently surface flows further downstream;

(c) Setting surface water and groundwater allocation limits that are based on a sustainable ~~the existing~~ volume of consented abstraction (Tables 5.9.4 and 5.9.5).

Table 5.9.3 Tukituki River Catchment Minimum Flow Limits

Surface Water Allocation Zone	Flow Management Site	Level of habitat and values protection	Minimum Flow Limit (L/sec)	Period to which Minimum Flow applies
Zone 1 Lower Tukituki	Tukituki River at Red Bridge	Current level of protection	3500	Until 30 June 2018 4
	80% habitat protection for trout upstream of Red Bridge In-stream values as identified in Table X		4300	From 1 July 2014 8 until 30 June 2018 23
	90% habitat protection for trout upstream of Red Bridge In-stream values as identified in Table X		5200	From 1 July 2018 23
Zone 1 Papanui Stream	Papanui Stream at Middle Rd	95 0% habitat protection for longfin eel (estimated equivalent)	53-75	Ongoing From 1 July 2014

Zone 2 Waipawa River	Waipawa River at RDS/SH2	Current level of protection	232 500	From 30 June 2014 8
	90% habitat protection for longfin eel In-stream values as identified in Table X		2700	From 1 July 2018
Zone 2 Mangaonuku Stream	Mangaonuku Stream U/S of confluence with Waipawa River	Current level of protection In- stream values as identified in Table X	n/a 170	n/a From 1 July 2014
	95% habitat protection for highest flow demanding fish species (estimated equivalent) and in-stream values as identified in Table X		117 1300	From 1 July 2018
Zone 3A Tukituki River	Tukituki River at Onga Onga Road Bridge	Instream Values as identified in Table X	1400	From 1 July 2014
Zone 3 Tukituki River	Tukituki River at Tapairu Road	Current level of protection In- stream values as identified in Table X	192 000	Until 30 June 2018
	90% habitat protection for longfin eel In-stream values as identified in Table X		232 500	From 1 July 2018
Zone 3 Tukipo River	Tukipo River at SH50	Current level of protection In- stream values as identified in Table X	170 50	Ongoing From 1 July 2014
Zone 3 Tukipo River	Tukipo River Ashcott Road	95% habitat protection for highest flow demanding fish species (estimated equivalent) and stream values as identified in Table X	1043 1200	From 1 July 2018
<u>Kahahakuri Stream</u>	<u>At Onga Onga Road Bridge</u>	<u>In-stream values as identified in Table X</u>	<u>200</u>	<u>Until 30 June 2018</u>
<u>Kahahakuri Stream</u>	<u>At Onga Onga Road Bridge</u>	<u>In-stream values as identified in Table X</u>	<u>1275</u>	<u>From 1 July 2018</u>
<u>Maharakeke Stream</u>	<u>At Station Road</u>	<u>In-stream values as identified in Table X</u>	<u>140</u>	<u>Until 30 June 2018</u>
<u>Maharakeke</u>	<u>At Station Road</u>	<u>In-stream values</u>	<u>170</u>	<u>From 1 July 2018</u>

<u>Stream</u>		as identified in <u>Table X</u>		
<u>Makaretu River</u>	<u>At Watson Reach</u>	In-stream values as identified in <u>Table X</u>	<u>170</u>	<u>Until 30 June 2018</u>
<u>Makaretu River</u>	<u>At Watson Reach</u>	In-stream values as identified in <u>Table X</u>	<u>200</u>	<u>From 1 July 2018</u>
<u>Porangahau Stream</u>	<u>At Oruawhoro Road</u>	In-stream values as identified in <u>Table X</u>	<u>50</u>	<u>Until 30 June 2018</u>
<u>Porangahau Stream</u>	<u>At Oruawhoro Road</u>	In-stream values as identified in <u>Table X</u>	<u>75</u>	<u>From 1 July 2018</u>

Table 5.9.4: Surface Water Allocation Limits²⁹

Surface Water Allocation Zones (Schedule XVI)	Maximum Total Instantaneous Allocation Rate Limit (L/sec)	Allocation Limit Annual Volume (Thousand-m³)
Zone 1 - Lower Tukituki River	<u>1,090,072</u>	<u>4,703,000</u>
Zone 2 - Waipawa River and Tributaries above RDS/SH2	<u>90,750</u>	<u>7,301,000</u>
Zones <u>3 and 3A</u> - Tukituki River and Tributaries above Tapairu Road	<u>1,122,900</u>	<u>8,385,000</u>
Sub-catchment allocation of allocation limit for Zone 3:		
Zone 3 - Kahahakuri Stream	<u>200,29</u>	<u>653,000</u>
Zone 3 – Makaretu Stream	<u>70</u>	<u>107,000</u>
Zone 3 - Tukipo River	<u>1520</u>	<u>5,168,000</u>
Total catchment	<u>3,102,550</u>	<u>20,389,000</u>

Table 5.9.5: Groundwater Allocation Limits²⁹

Groundwater Allocation Zones (Schedule XVII)	Allocation Limit (m³/year)
Zone 1 – Otane Basin	<u>2,553,000,000</u>
Zone 2 – Ruataniwha Basin north of the Waipawa River	<u>5,000,278,000</u>
Zone 3 – Ruataniwha Basin south of the Waipawa River	<u>146,000,167,000</u>
Rest of the catchment	No limit set ³⁰ but applications will be assessed as a <u>discretionary activity</u>

POL TT9 IMPLEMENTING MINIMUM FLOWS AND ALLOCATION LIMITS

1. To implement the minimum flow limits and allocation limits in the Tukituki River catchment by:

- (a) Allowing the renewal of existing surface water and groundwater take consents provided:
- (i) There is no increase in the rate or volume of take;
 - (ia) Maximum weekly take does not exceed the maximum weekly take that was abstracted over the last 5 irrigation seasons)
 - (ii) A seasonal volume³¹ on irrigation takes is imposed which is the lesser of the volume assessed:
 - i. in accordance with POL 42; or
 - ii. using the procedure set out in Schedule XVIII;
 - (iii) Annual volumes on non-irrigation takes are imposed.
 - (iv) The maximum duration for daily abstraction will not exceed 20 hours per day
- (b) Seeking to improve the security of supply for existing surface water takes by not reallocating water that is freed up through³²:
- (i) The surrender or non-renewal of existing takes and unused proportions of existing consented takes^{32A};
 - (ii) The implementation of POL TT9 (1) (a).
- (c) Assessing groundwater take applications against OBJ 44, POL 77 and POL TT11 in areas where no groundwater allocation limit is set in Table 5.9.5.
- (d) ~~Not~~ Including any taking of water allowed under s14(3)(b) of the RMA or Rules 53 and 54, or Rule TT3 when summing volumes of take for comparison against the surface water allocation limits in Table 5.9.4 and the groundwater allocation limits in Table 5.9.5.
- (e) Reviewing the need, in 2020 and 2025, to increase the Table 5.9.4 and 5.9.5 allocation limits to include a provision for existing and future s14(3)(b) takes for animal drinking water in the event of a Community Irrigation Scheme progressing.

29 The Table 5.9.4 and 5.9.5 water allocation limits apply only to consented takes and not to takes allowed under section 14(3)(b) of the RMA for an individual's use of water for domestic supply or for supply of drinking water to an individual's animals, nor to takes occurring prior to [date of PC notification] under Rules 53 and 54, and nor to takes for Community Irrigation Schemes.

30 Groundwater takes located outside of Groundwater Allocation Zones 1 to 3 are Discretionary Activities under Rule TT4.

~~31 Seasonal volume is the actual crop water requirement required over a crop's growing season (including any crop rotation).~~

32 This does not preclude the transfer of existing takes.

32A This does not apply to unused portions of these water takes that are transferred to iwi authorities

(f) Other than for takes for Community Irrigation Schemes³³ which involve storage of water behind an instream dam, when a river is at or below its Table 5.9.3 minimum flow, takes from that river shall be managed as follows:

- (i) The taking of water allowed by section 14(3)(b) of the RMA for an individual's reasonable domestic needs or the reasonable needs of an individual's animals may continue without further restriction, provided it does not cause an adverse effect;

- (ii) Takes permitted under Rules 53 and 54 may be required to reduce their daily rate of take if Hawke's Bay Regional Council issues a Water Shortage Direction to that effect;

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(iii) Consented takes for public water supplies, animal drinking water, animal welfare and sanitation (including dairy shed wash down and milk cooling), marae, schools and other educational facilities shall be required to reduce their daily rate of take by an amount specified in their consent conditions;

(iv) Takes for ~~frost protection and~~ takes for filling agricultural spray tanks shall continue to be allowed without further restriction;

(v) All other consented takes shall cease.

POL TT10 HIGH FLOW ALLOCATION LIMITS

1. To enable the taking of surface water from rivers that are flowing at a level above their median flow provided:

(a) The high flow take ceases when the river is at or below the High Flow Minimum Flow Limit³⁴ as set in Table 5.9.6;

(b) Such high flow takes do not cumulatively exceed the allocation limits set in Table 5.9.6;

(c) The restrictions in (a) and (b) above do not apply to takes for Community Irrigation Schemes which involve storage of water behind an instream dam.

Table 5.9.6: High Flow Allocation and Minimum Flow Limits

River name	Flow Management Site	High Flow Minimum Flow Limit (L/sec)	High Flow Allocation Limit (L/sec)	High Flow Allocation Limit (m3/day)
Tukituki River	At Red Bridge	22,022	20 1700 ³⁵	172,8 150,000 ³²
Tukituki River	At Onga Onga Road	<u>12,000</u>	500 425	<u>35,000</u>
Tukituki River	At Tapairu Road	912,000 892		<u>8635,000</u>
Waipawa River	At Waipawa (RDS/SH2)	8,99 <u>10,000</u>	500 425	86,4 <u>80,000</u>

POL TT11 MANAGING GROUNDWATER TAKES HYDRAULICALLY CONNECTED TO SURFACE WATER BODIES

1. To generally manage the effects of groundwater takes on surface water bodies, including wetlands, in the following manner:

(a) An appropriate scientific method must be used by consent applicants to assess the depletion effect of the groundwater take on nearby surface water³⁶ e.g.: ~~using Guidelines for the Assessment of Groundwater Abstraction Effects on Stream Flow prepared by Environment Canterbury (Techniques for evaluating stream depletion effects, Supplement to the guidelines for the assessment of groundwater abstraction effects on stream flow (2000), Report No. R09/53, ISBN 978-1-86937-992-6);~~

(b) Subject to (a), the potential adverse effects of groundwater takes on surface water depletion shall be managed in accordance with Table 5.9.7;

(c) Groundwater takes that are classified as High or Medium in Table 5.9.7 shall be included within the surface water allocation limits described in POL TT8 and POL TT9;

(d) Groundwater takes that are classified as High in Table 5.9.7 shall be subject to the minimum flow limits in POL TT7 and POL TT9, ~~provided that the predicted reduction in stream depletion that will arise from ceasing the groundwater take will occur within 10 days.~~

³³ Refer Policy TT13 for the requirements that Community Irrigation Scheme must meet.

³⁴ The High Flow Minimum Flow has been set at the median flow for each Flow Management Site.

³⁵ The allocation limit above the Red Bridge site is a cumulative one in so far as it includes the allocation limits above the Tapairu Road and Waipawa (RDS/SH2) sites.

Table 5.9.7: Management of Surface Water Depletion Effects

Classification of surface water depletion effect	Magnitude of surface water depletion effect	Management approach
High	The surface water depletion effect is assessed as: (a) 5 10% or greater of the average groundwater pumping rate ³⁷ after 100 days of pumping ^{37A} ; and (b) greater than 0.51 L/s.	The calculated loss of surface water is included in the surface water allocation regime, and specific minimum flow restrictions are imposed on the groundwater take, subject to the proviso in POL TT11(1)(d).
Medium	The surface water depletion effect is assessed as: (a) 2 5% or greater and less than 5 10% of the average groundwater pumping rate ³⁴ after 100 days of pumping; and (b) greater than 0.51 L/s.	The calculated loss of surface water is included in the surface water allocation regime, but no and specific minimum flow restrictions are imposed on the groundwater take.
Low	The surface water depletion effect is assessed as: (a) less than 20% of the average groundwater pumping rate a After 10 days of pumping, having a depletion effect of (b) 0.5 1 L/s or less.	The calculated loss of surface water is not included in the surface water allocation regime, and no specific minimum flow restrictions are imposed on the groundwater take.

36 Prior to this assessment occurring takes that have previously been assessed by HBRC as being stream flow depleting takes will be categorised as Table 5.9.7 “High” takes. The assessment method selected should be appropriate to the likely risk of stream depletion.

37 The average groundwater pumping rate is based on the seasonal or annual volume averaged over 100 days or a full year whichever is applicable assuming pumping occurs for 24 hours per day

37A Pump testing shall be carried out during the months when the crop for which the water is required, would usually be irrigated. For pasture pump tests shall be carried out during the middle of the irrigation season.

POL TT12 TRANSFERS

1 To maximise the efficient use of water and improve security of supply by:

- (a) Enabling the transfer of existing take consents to other sites within the same sub-catchment or hapū rohe~~Surface Water Allocation Zone~~, Groundwater Allocation Zone or aquifer system;
- (b) Enabling the management of temporary transfers within an irrigation season within the same sub-catchment by a management entity approved by Hawke’s Bay Regional Council where the metering of takes and the telemetry of take data allows for real time management and monitoring of the water being taken.

POL TT13 ENABLING COMMUNITY IRRIGATION SCHEMES

1. Enabling takes for Community Irrigation Schemes capable of providing irrigation water to at least 5,000 hectares of production land provided that the management of the take and the management of the Scheme:

(a) Demonstrates how the supply of irrigation water and the resulting use of irrigated land will meet the ~~limit~~standards and targets set by POL TT1 and POL TT2;

(b) Does not increase the number of days that downstream takes will be required to cease abstraction (or reduce their rate of take) as a result of Hawke's Bay Regional Council implementing POL TT9(1)(f);

(c) Provides water for future irrigation demand ~~at a security of supply described in POL TT8 (1)(a)~~, while taking into account the effects of climate change;

(d) Ensures that water is available at a rate and quality sufficient to meet the domestic and stock water needs of any properties down gradient ~~whose existing water supply is rendered unsuitable for human or animal drinking as a result of the implementation of the Community Irrigation Scheme, or alternatively ensures affected water supplies are appropriately treated;~~

(e) Demonstrates industry good practice for irrigation scheme efficiency;

(f) Maintains or enhances terrestrial riparian biodiversity and surface water recreational opportunities within the catchment;

(fa) Takes into account and allows for flow losses to groundwater during diversion or conveyance of water from the Community Irrigation Scheme

(g) Avoids, remedies or mitigates adverse effects on aspects of water quality and quantity that contribute to mauri and the values in Table X, in rivers and streams affected by the operation of the Community Irrigation Scheme.

POL TT14 CONSENT CATEGORISATION AND DURATIONS

1. To manage the taking and use of surface water and groundwater in the Tukituki River catchment, so as to give effect to POL TT7 to POL TT13, as follows:

(a) The taking of water allowed by section 14(3)(b) of the RMA, shall ~~continue to be allowed without further restriction~~ under this Plan, provided the taking is for an individual's domestic needs, or the reasonable needs of an individual's animal's for drinking water requirements, is less than 20 cubic metres per day, and such taking, in combination with all other such takes in the same sub-catchment, does not have an adverse effect on the environment;

(b) From 4 May 2013 no new taking of surface water shall be allowed under Permitted Activity Rule 54 ³⁸;

(c) From 4 May 2013 the renewal of existing surface take consents, and the renewal of existing groundwater take consents within Groundwater Allocation Zones 1 to 3 shall be a Discretionary Activity under Rule TT4 provided that the Table 5.9.4 and 5.9.5 Allocation Limits are not exceeded and renewed production land irrigation consents shall have durations not exceeding ~~5~~10 years;

(d) From 4 May 2013 the taking of water for a Community Irrigation Scheme capable of providing irrigation water to at least 5,000 hectares of production land shall be a Discretionary Activity under Rule 55 and if granted the consent duration ~~should reflect the capital investment required for the Scheme and~~ may be up to 35 years;

38 Note that taking groundwater as a permitted activity under Rule 53 is still allowed within the Tukituki River catchment

38B Does not apply to iwi allocations

(e) Other than for:

- a. high flow takes (POL TT10);
- b. takes for the purpose of Community Irrigation Schemes;
- c. takes under Rule 53; and
- d. takes allowed under section 14(3)(b) of the RMA which have as their primary purpose the provision of drinking water for an individual's domestic needs ~~people~~ or drinking water for an individual's animals;
- e. takes permitted under Rule TT3

from 4 May 2013, the taking of any new surface water and new groundwater within the Surface Water and Groundwater Allocation Zones shall be a Non-complying Activity under Rule TT5^{38B};

(f) From 4 May 2013, the renewal of existing groundwater take consents and the taking of new groundwater outside the Groundwater Allocation Zones (except as provided for by Rule TT3) shall be a Discretionary Activity under Rule TT4 and if granted the consent duration shall be no more than 5 years;

(g) Consent conditions shall be imposed that limit the instantaneous rate of take, the monthly and seasonal volume of take for irrigation takes, and the annual volume of take for non-irrigation takes;

(h) Single resource consents may be granted to cover multiple uses of water, provided all adverse effects that are more than minor, are avoided, remedied or mitigated.

6.9 Tukituki River Catchment Rules

6.9.1 Land Use and Water Quality

Rule	Activity	Classification	Conditions/ Standards/ Terms	Matters for Control/Discretion
<p>TT1 Production land use Refer to POLs TT1 to TT5, and POLs <u>16 and 20</u></p>	<p>The use of production land in the Tukituki River catchment pursuant to s9(2) and s15 RMA, and where <u>nitrogen leaching exceeds 4 kgs/hectare/year and less than 7kgs/hectare/year</u></p>	<p><u>Permitted</u> <u>Controlled</u></p>		<p>a. Where existing nitrogen losses increase³⁹ as a result of landuse change or farm management changes, the nitrogen leached from the land (modeled as a loss from the root zone using Overseer or an alternative model approved by Hawke’s Bay Regional Council) shall not exceed the relevant <u>Compliance with Policy TT4; the standards and targets in this plan, and the upholding of the values in Table X(1)(e) benchmark leaching rate for the land:</u> (i) by more than 5%; nor —(ii) by more than 5 kg N/ha/yr.</p> <p>b. For properties exceeding 4 hectares in area the records specified The matters in Schedule XXI; shall be retained for each year (1 July to 30 June) from 1 July 2013 onwards to enable a Nutrient Budget to be prepared and those records shall be provided to the Hawke’s Bay Regional Council upon request. In the absence of the records being retained, Nutrient Budget inputs will be determined in accordance with the methodology specified in Schedule XXI.</p> <p>c. For properties exceeding 4 hectares in area a Nutrient Budget⁴⁰; incorporating the modeling of whole of property nutrient losses (kg/ha/year) calculated using the annual records specified in Schedule XXI and the Overseer nutrient budget model (or an alternative model approved by Hawke’s Bay Regional Council) must be prepared for the land prior to 1 July 20168 and be provided to the Hawke’s Bay Regional Council. The Nutrient Budget shall be updated at three yearly intervals and be provided to the Hawke’s Bay Regional Council.</p> <p>d. After 1 July 201620 the nitrogen leached from the land (modelled as a loss from the root zone using Overseer or an alternative model)</p>

				<p>approved by Hawke's Bay Regional Council) shall not exceed industry good practice leaching rates for the land use and soil type; and the nitrogen conversion efficiency shall meet.</p> <p>Industry good practice for the land use and soil type:⁴¹ <u>and the standards in this plan.</u></p> <p>e. For properties exceeding 4 hectares <u>the preparation and commitment to a Phosphorus Management Plan shall be prepared for the land and be provided to the Hawke's Bay Regional Council as follows:</u></p> <ul style="list-style-type: none"> (i) in the Papanui and the Porangahau catchments as shown in Schedule XIV by 1 July 20167; (ii) in the Maharakeke catchment as shown in Schedule XIV by 1 July 20168; (iii) in the Tukipo, Kahahakuri and Upper Tukituki Corridor catchments as shown in Schedule XIV by 1 July 201620. <p>f. Where more than 60% of land within a single paddock adjoining a water body has a slope of 15 degrees or less as illustrated in Schedule XX⁴² all livestock shall be the commitment to excluding stock from:</p> <ul style="list-style-type: none"> (i) Any lake, wetland and permanently flowing river and their margins by 31 December 20167; (ii) Any intermittently flowing river⁴³ and its margin by 31 December 201722. <p>g. (iii) Where more than 60% of land within a single paddock land adjoining the water body has a slope of greater than 15 degrees as illustrated in Schedule XX⁴¹, <u>the exclusion of all livestock stocked at a rate of more than 18 stock units per hectare or greater, on that land (other than sheep), shall be excluded from:</u></p> <ul style="list-style-type: none"> (i) Any lake, wetland and any permanently flowing river and their margins by 31 December 20167; and (ii) Any intermittently flowing river and its margin 31 December 201722.
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Rule	Activity	Classification	Conditions/ Standards/ Terms	Matters for Control/Discretion
				<p>h. Notwithstanding conditions (f) and (g), grazing of a permanently fenced riparian margin may occur for weed control purposes provided that:</p> <p>(i) The period of grazing does not exceed 7 days;</p> <p>(ii) The fenced riparian margin shall not be grazed more than once <u>twice per annum</u>, and only during the period 1 November to 30 April.</p> <p>i. Notwithstanding conditions (f) and (g), stock may continue to utilise managed stream crossing points (where stock are usually excluded from the surface water body but are actively herded across the surface water body by the farmer).</p> <p>j. Rivers that are permanently or intermittently flowing that are crossed by formed stock races shall be bridged or culverted by 30 June 2017.</p> <p>k. After 1 July 2018, n Nitrogen leached from the land shall not be demonstrated <u>44</u> to be causing or contributing to any measured exceedence of the Table 5.9.1B limitstandards for the 95th percentile concentration of nitrate-nitrogen in any mainstem or tributary of a river or to any measured exceedence of the Table 5.9.2 groundwater quality limitstandards for nitrate-nitrogen</p>

41 Industry good practice leaching rates for the land use and soil type and industry good practice nitrogen conversion efficiencies will be determined by HBRC in consultation with primary sector industry groups and ~~included in the Regional Resource Management Plan by way of Plan Change prior to 1 July 2018.~~

42 Schedule XX is based on slope classifications contained within the NZLRI and is at a coarse catchment scale. To determine compliance with Rule TT1 at a paddock scale, HBRC will use the highest resolution Digital Elevation Model or LIDAR image available to determine the proportion of slope by using standard triangulation methods.

43 An intermittent river does not flow continuously but has a bed that is predominantly unvegetated and comprises sand, gravel, boulders or similar material.

44 "Demonstrated" means as a result of monitoring and/or modeling undertaken by the Hawke's Bay Regional Council

Rule	Activity	Classification	Conditions/ Standards/ Terms	Matters for Control/Discretion
				<p>I. Contaminants leached from the land shall not be demonstrated to be causing or contributing to any breach of the Compliance with the Resource Management (National Environmental Standards for Human Drinking Water) Regulations 2007 or the guideline values or maximum acceptable values for determinands in the Drinking Water Standards of New Zealand 2008 for any registered drinking water supply takes. (Note: Hawke's Bay Regional Council is satisfied that this permitted activity rule will not cause or contribute to any such breach for any registered drinking water supply but Condition I. is included here for completeness.)</p>

Rule	Activity	Classification	Conditions/ Standards/ Terms	Matters for Control/Discretion
<p>TT2 Production land use Refer to POLs TT1 to TT5, and POLs <u>16 and 20</u></p>	<p>The use of production land Pursuant to s9 (2) and s15 RMA, the <u>use of production land</u> within the Tukituki River catchment <u>where nitrogen</u> <u>leaching exceeds</u> <u>7kgs/hectare/year and</u> <u>does not comply with</u> <u>Rule TT1.</u></p>	<p>Restricted Discretionary</p>		<p>a. The actual or proposed nutrient loss in relation to:</p> <ul style="list-style-type: none"> (i) Industry good practice nitrogen leaching rates having regard to POL TT4; (ii) The current surface water quality and the surface water quality limit<u>standards</u> in the catchment having regard to POL TT1; (iii) The current groundwater water quality and the groundwater water quality limit<u>standards</u> in the catchment having regard to POL TT2; (iv) Current estimates of catchment or water management zone loads of nitrogen and phosphorus having regard to POL TT4 and TT5. (v) <u>The location of the property in terms of sensitive catchments as specified in Schedule VIb, and the unconfined Ruataniwha aquifer.</u> (vi) <u>The concentrations of DRP and SIN in ground water or surface water and the effects of land use activities on such concentrations and relevant standards.</u> <p>b. The adequacy of any proposed industry good practices and any associated Farm Environmental Management Plan designed to avoid, remedy or mitigate the effects of the activity having regard to POL TT6.</p> <p>c. The imposition of mitigation measures where stock are unable to be excluded from water as required by Rule TT1.</p> <p>d. The imposition of mitigation measures where the activity is likely to contribute to or cause a breach of the Drinking-Water Standards for New Zealand having regard to POL TT1 and POL TT2.</p> <p>e. Monitoring and reporting requirements having regard to POL TT15.</p> <p>f. Duration of consent having regard to POL TT6 (3).</p> <p>g. Review of consent conditions</p>

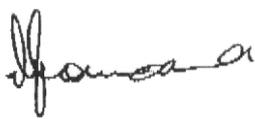
20. Statement:

We wish to be heard in support of our submission at any relevant pre-hearing or hearing convened to consider the Tukituki Catchment Proposal, inclusive of The Ruataniwha Water Storage Scheme, Plan Change 6 to the Hawke's Bay Regional Resource Management Plan and the associated Notice of Requirement.

Yes we intend to provide expert witnesses, names to be confirmed.

We confirm that we have authority to sign this submission on behalf of all the persons named on this form:

Nā māua



Ngahiwi Tomoana
Tumuaki/Chairman
Ngāti Kahungunu Iwi Incorporated



Dr Adele Whyte
Kaiwhakahaere Matua/ Interim Chief Executive
Ngāti Kahungunu Iwi Incorporated

Please note Supplementary Papers 1 and 2

Supplementary Paper 1

In Support of Ngāti Kahungunu Iwi Incorporated's Submission on the Tukituki Catchment

Proposal

1. In considering Hawkes Bay Regional Council's (HBRC) Plan Change 6 and with respect to the Ruataniwha Water Storage Scheme, I, Rawiri Richard Smith would like to present the following submission on behalf of Ngāti Kahungunu Iwi Incorporated.
2. I currently work for Kahungunu Ki Wairarapa as an Environment Manager. Our organization represents Ngāti Kahungunu in Wairarapa and is mandated to do so by Ngāti Kahungunu Iwi Incorporated.
3. Hapu have interests and rights to meaningful engagement, iwi interests are connected to the entire Tukituki Catchment Proposal. Any tāngata whenua arrangement should include iwi and the reasons for this position are outlined below.
4. The magnitude of change in the environment as the result of the projected Tukituki Catchment Proposal being realised means the iwi response needs to fully address the impacts on the Maori world.
5. While there are legal obligations I exhort the regional council to consider widening its engagements with Ngāti Kahungunu Iwi Incorporated as a matter of political will.
6. The new environment in the Tukituki Catchment that will result from this proposal can be further enhanced culturally in a full relationship with Ngāti Kahungunu Iwi Incorporated which should include initiatives with respect to Co-Governance, Co-Management and Co-Operational streams of work.
7. **The Proposed Changes**
8. Plan Change 6 and the Ruataniwha Water Storage Scheme, together forming the Tukituki Catchment Proposal have been determined as matters of National Significance. These matters of significance are outlined in the RMA section 141

- 9. 141B Minister's power to call in matters that are or are part of proposals of national significance**
10. *In deciding whether a matter is or is part of a proposal of national significance, the Minister may have regard to any relevant factor, including whether the matter---*
- a. has aroused widespread public concern or interest regarding its actual or likely effect on the environment, including the global environment; or*
 - b. involves or is likely to involve significant use of natural and physical resources; or*
 - c. affects or is likely to affect any structure, feature, place, or area of national significance; or*
 - d. affects or is likely to affect more than 1 region or district; or*
 - e. affects or is likely to affect or is relevant to New Zealand's international obligations to the global environment; or*
 - f. involves or is likely to involve technology, processes, or methods which are new to New Zealand and which may affect the environment; or*
 - g. results or is likely to result in or contribute to significant or irreversible changes to the environment, including the global environment; or*
 - h. is or is likely to be significant in terms of section 8 (Treaty of Waitangi).*

Measures that can be considered by the Minister to show that the

Ruataniwha Water Storage Scheme is of National Significance

- 11. (b) involves or is likely to involve significant use of natural and physical resources;**
12. The proposed dam, the RWSS in the Tukituki Catchment will involve significant use of natural resources.
13. It would be the largest dam to be constructed in New Zealand in the last 20 years.
14. The proposal is to have a dam that will be 83 metres high at its deepest point, 6.2 kms long, with the capacity to store 90 million cubic metres of water.
15. This area will be inundated with water including 106.1 hectares of culturally significant indigenous vegetation.
16. These factors above are only a few indicators that the use of natural and physical resources is significant.
17. From a Maori perspective, like the mainstream perspective, the changes to the environment are considerable.
18. While this view is the same, how iwi come to their views is different.
19. The change in mauri will be a major change because the nature of the river and the nature of the land will change its identity completely for an arguably indefinite duration.

20. The mauri of the various waterways that will result from the changes should be planned as the mauri is established.
21. The direction about mauri and other Maori aspects should be given by a Co-Governance group that includes iwi representatives.
22. While a mainstream work plan can identify some mitigation and restoration methods if there is no similar work plan carried out for Maori aspects like mauri then remediation work will not be equitable and suitably carried out.
23. A Co-Management initiative that will plan work streams that include the opportunity for the Maori community to be involved can take into account cultural directions from the Co Governance.
24. The establishment of mauri will be beneficial for the whole region and work to restoring, enhancing and protecting the health and wellbeing of the Tukituki Catchment for future generations.

25. ***(d) affects or is likely to affect more than 1 region or district;***
26. The Tukituki Catchment is a part of two districts and both districts would need to understand how they will be affected to be assured that their rate payers would not be too adversely affected by the Tukituki Catchment Proposal.
27. When multiple hapu are affected by the Tukituki Catchment Proposal, the issues can extend into a scope that involves iwi so representation can be holistic and considered.
28. While the effects of this proposal are concentrated on impacts on land and fresh water, the coastal areas through to the 12km boundary affect more than one hapu.
29. Addressing the concerns of our whanau from the many marae and many hapu who have mana whenua and mana moana in the Tukituki Catchment and out through to the sea affected by Plan Change 6 could use the cultural overview that iwi can bring.

30. ***(f) involves or is likely to involve technology, processes, or methods which are new to New Zealand and which may affect the environment***
31. While damming is not a new concept the idea of damming on this scale for intensified land use and irrigation including agricultural outcomes are new.
32. The use of water for higher agricultural yields than we have historically achieved will affect the lands in a new way.
33. Other irrigation storage and agricultural related dams throughout New Zealand and throughout the Kahungunu rohe or districts will be interested in the precedent set by the effects allowed in the Tukituki Catchment primarily in the water, but also on the land.
34. The change to intensively cultivate lands through such a significant water storage scheme is a concept that is new in this catchment and a risk that iwi is interested in too.
35. Often concepts of mauri are applied to waterways, but the life sustaining properties in the soil is also an aspect of mauri.
36. The recovery of the land from intensive land use practices including farming is a concern for Maori and attitudes like deficit irrigation would result in the working of the land in a balanced way that could see the mauri of the land being enhanced.
37. The different levels of non-point discharges to deal with, loss of forests that fed waterways and fresh water fauna are some water way concerns.

38. ***(g) results or is likely to result in or contribute to significant or irreversible changes to the environment, including the global environment***

39. The change in mauri will be a major change because the nature of the river and the nature of the land will be irreversibly changed.
40. While the dam can conceptually be changed, the size of the investment needed means that there is an expectation of permanence.
41. This means that aspects of the Maori relationship with the affected waterways, affected lands, affected flora and fauna will end and the new environment will be a permanent replacement.
42. I have suggested above how Maori should be involved in the development of the new environment.

43. (h) is or is likely to be significant in terms of section 8 (Treaty of Waitangi).

44. The principles of the Treaty of Waitangi will be affected by Plan Change 6.
45. In order for partnership, active protection and participation to be realized as a part of Plan Change 6, Ngāti Kahungunu Iwi Incorporated needs to be engaged more than they have been.
46. They need to be engaged in the levels I have referred to above, in Co-Governance, Co-Management and Co-Operational levels to achieve cultural, social and environmental well-being.

47. As Plan Change 6 is a catchment specific plan change and represents HBRC's stage of implementing the National Policy Statement for Freshwater Management.
48. Plan Change 6 contains an integrated suite of five objectives for this catchment, the Tukituki Catchment. I commend HBRC for their foresight with these objectives and we seek that the objectives fit with sections 6, 7 and 8, matters of national significance recognized by the Resource Management Act (RMA).
49. These five integrated objectives are:
 - a. Maintain or enhance aquatic habitats
 - b. Maintain safe contact recreation
 - c. Reduce the effects algae and slime on recreational use and amenity
 - d. Protection of significant values of natural wetlands
 - e. Recognise the mauri of surface water bodies and groundwater and avoid, remedy or mitigate any adverse effects of water quality and quantity that contribute to mauri
50. This integrated suite of tools aligns well with the following sections of the RMA.
51. Progressing this suite of tools and the RMA into initiatives like
 - a. Structural recognition of the iwi and their relationship with the Tukituki Catchment
 - i. Co-Governance between iwi and the crown's designated representative through law the regional council
 - ii. Strategic thinking
 - iii. Co-Management between iwi and regional council to establish work streams that include mauri monitors, planning the geomorphology of the waterways like holes

- iv. Co-Operational activities like mauri monitoring, indigenous fish surveying,
 - v. Employment Policy that recruits Maori staff so at least the percentage of Maori on staff reflects the percentage of Maori in the community
 - vi. Rates put to supporting Maori rate payers who can have their worldview reflected in the Hawkes Bay Regional Council's operations especially in the Tukituki Catchment
- b. Concrete recognition of the relationship of the iwi and the environment can take the form of
 - i. Interpretive signage
 - ii. Apps about the Tukituki Catchment
 - iii. The re-establishment of plant life, fauna throughout the Tukituki Catchment
 - iv. Ensuring the traditional stories about the Tukituki Catchment of the iwi are included in the communication portals run by Regional Council
 - c. Kaitiaki monitoring that can include a state of the takiwa, the Tukituki Catchment
 - i. Indigenous fish survey
 - ii. Mauri reporting of the waterways
 - iii. Mauri reporting of the lands
 - iv. Mauri reporting of the moana
 - v. The contact recreation of tāngata whenua
 - vi. The integration of tāngata whenua in community initiatives

Laws Affected by Plan Change 6 and the Ruataniwha Water Storage Scheme

52. While there are many of these aspects of these sections of the RMA spoken about above, there are other parts iwi can refer to in these sections that are spelt out below.

53. Ngāti Kahungunu Iwi Incorporated is willing to work with Hawkes Bay Regional Council to accomplish the best development for the Tukituki Catchment and including a Kahungunu voice; a Kahungunu thinking pattern; a Kahungunu methodology as a part of the whole community, as an equal party to Tiriti o Waitangi, as a strategic partner.

54. The sections of the RMA referred to above and the purpose of the act are:

55. 5 Purpose

i. The purpose of this Act is to promote the sustainable management of natural and physical resources.

ii. In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while---

56. sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

57. safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

58. avoiding, remedying, or mitigating any adverse effects of activities on the environment.

59. 6 Matters of national importance

60. In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

a. the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

b. the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

c. the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

d. the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

61. 7 Other matters

62. In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to---

a. kaitiakitanga:

- b. *the maintenance and enhancement of amenity values:*
 - c. *intrinsic values of ecosystems:*
63. *(f) maintenance and enhancement of the quality of the environment:*
64. *(g) any finite characteristics of natural and physical resources:*
65. *(h) the protection of the habitat of trout and salmon:*
66. *the effects of climate change:*
67. *the benefits to be derived from the use and development of renewable energy.*
68. **8 Treaty of Waitangi**
69. *In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).*
70. While this is a sizeable undertaking I encourage Hawkes Bay Regional Council to use this opportunity to set for even wider scenarios, especially the writing the next generation of the regional plan.
71. I wish to speak to this submission.

A MANDATE OF CARE
Mana Whenua, NKII & HBRC
At Matahiwi Marae:
Wednesday 31st July 2013.

1. INTRODUCTION.

During a very lively Ngāti Kahungunu Iwi Incorporated (NKII) chaired public meeting at Matahiwi Marae last night (Wednesday 31 July) it became very clear to those gathered that the issues of effective co-management of the natural assets of the district were not being upheld by the democratically elected governing bodies.

Many believed that the HBRC have failed to uphold and enhance the many water bodies within Kahungunu.

Whanau with Mana Whenua status expressed their concern about an unsteady past and a poorly defined future for their Whenua, their Awa and their Moana.

Concerns from Bridge Pa Whanau, Kohupatiki Whanau and Matahiwi Whanau confirmed a lack of faith in the HBRC's ability to manifest leadership that will 'turn the tide' for Awa and Mauri degradation.

So the question posed by many was...

"How can the proposed RWSS be endorsed by Tāngata Whenua when there is still much work to be done to effect the belated repair of the whenua and ALL rivers and streams that discharge into Te Matau a Maui / Hawke's Bay?"

I offer the proposal that perhaps HBRC can NOW apply more tools and measures than developed for the Ruataniwha Water Storage Scheme (RWSS) to **actively improve** the Mauri of ALL Awa that enter the Hawke's Bay? And perhaps concurrently the HBRC can augment this very necessary Awa well-being program with the very accurate data that is being amassed for their Enhanced Earthquake (EQ) Risk Mapping. The accumulated HBRC mapping data is currently locating all Awa sediments

that underlie the commercial assets of this 'twin city' community... Ancient Awa whakapapa for modern community health?.

2. The Ruataniwha Water Storage Scheme (RWSS).

Much has been written by HBRC (and by HBRC Consultants) in relation to this 'now urgent' RWSS water storage initiative.

A dam site has been selected with structural and water delivery (canal and pipe-works) drawings now well advanced for the construction of the Scheme; 2014 to 2018.

Underpinning the proposed environmental regulatory framework for **total water care** for the community is the RWSS TRIM 3 software package.

TRIM 3 has been developed to aid the allocation and monitoring of water within the seventeen (17) sub-catchments that define the RWSS.

And OVERSEER allocation software has been derived from RWSS TRIM 3.

As an introduction to RWSS TRIM the Mana Whenua Group were invited to the HBRC on Thursday 25th July 2013 to listen to 5 presentations by key members of the Council's technical team for the RWSS.

Dr Kit Rutherford from NIWA presented a paper on TRIM 3 and explained that the program is not only able to emulate the movement of toxins in the Awa but is also able to monitor the complex addition AND subtraction of water from the surface flows and subsurface / aquifer throughout all 17 sub-catchments.

As explained by Dr Rutherford RWSS TRIM has evolved from earlier versions from other projects. The current version has been crafted to a horizontal grid / grillage that is 500m x 500m; encompassing a land area of 25 hectare within each grid.

I am not a skilled hydrologist, however I refer to an early peer review of the (TRIM) software by Australian hydrologist Hugh Middlemis (RPS Aquaterra ISSN Print 1179 8513; June 2012). Hugh questioned the use of such a large grid size and suggested that a grid that is 100m x 100m could provide a tool for more effective catchment modelling.

Additionally Hugh noted that **other** software might be more suitable to allow an enhanced understanding of the complex interaction between surface and groundwater flows. MIKE-SHE or MIKE-11 coupled with FEFLOW was referenced.

I am familiar with this commercially available Danish Hydrological Institute (DHI) software.

I note that in more recent HBRC correspondence that Hugh Middlemis has endorsed the HBRC software as a useful tool for the work currently being undertaken.

My concerns are:

- What has changed in the modelling software since June 2012?
- Has the sensitivity of the software been enhanced since June 2012?
- And Is TRIM3 and OVERSEER suitable for post construction monitoring of water borne toxins?.

In order to apply due diligence to the current status of the RWSS TRIM 3 modelling would HBRC allow an independent assessment of pre and post RWSS construction scenarios to be undertaken using MIKE-SHE (or eWATER SOURCE) software using a 100m x 100m grid?.

3. A way forward for the RWSS.

For Mana Whenua there is a need to solve / cure the ills of the past before boldly stepping into an uncertain Wai future.

As alluded to in the meeting on 25th July 2013 the lower Tukituki River flows and the Heretaunga aquifers are interlinked between Red Bridge and Black Bridge. Further the Mauri of the Tukituki IS challenged in this active mixing zone; Wai Awa / Wai Moana...

For this mixing zone I have learned little from the diligent RWSS scientists and offer the following for TRIM3 and the OVERSEER Kaupapa (Philosophies):

- **As a proof of concept during 2013 can the HBRC apply the intent of TRIM3 and OVERSEER to the awa-side communities of Haumoana, Whakatu, Kohupatiki, Clive, Havelock North, Hastings, Bridge Pa, Ferndale, Taradale and Awatoto.**

This circa 750km² area, if modelled well, monitored well, legislated well and 'policed' well should inspire renewed confidence in the HBRC.

And with this renewed confidence in the HBRC the proposed RWSS **may** be seen as an enhancement to the Mauri of the Tukituki catchment.

Perhaps the return of positive Mauri to the Awa of Heretaunga will inspire more of the community to support and celebrate the general well-being of this bountiful Rohe (District).

“Wai Mauri, Wai Ora, Mauri Ora”

Many thanks in Anticipation,

Tihau Bishop.

Environmentalist, Prof. Civil Engineer..

Haumoana

1st August 2013