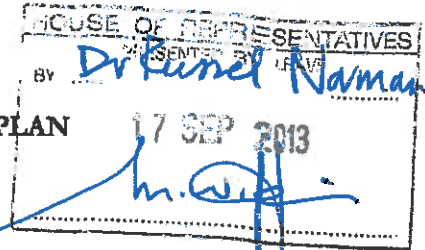


ATTACHMENT 2
PLAN CHANGE 6 HAWKES BAY REGIONAL PLAN
REASONS FOR SUBMISSION



The abbreviations used in my submission are as follows:

RMA	Resource Management Act 1991
PC6	Plan Change 6 Tukituki Catchment
RRMP	Regional Resource Management Plan
NPS	National Policy Statement
HBRC	Hawkes Bay Regional Council
N	Nitrogen
NO ₃	Nitrate-nitrogen
P	Phosphorus
NPSFM	National Policy Statement Freshwater Management 2011

The reasons for my submission are as follows.

1. Values of the Tukituki catchment and estuary

The Tukituki Catchment provides an important habitat for native fish. Of the 18 native fish species found in the catchment, 8 are considered to be At Risk and declining according to the current national threat classification. The Tukituki catchment is ranked as nationally significant in the RIVAS for native fish values undertaken for the Hawkes Bay Region, and is a stronghold catchment for inanga, lamprey, koaro and dwarf galaxias. The diversity of native fish found in the Tukituki catchment is relatively high and the non-migratory dwarf galaxias is found in only one other catchment on the eastern side of the Ruahines. Many of the Tukituki sub-catchments have a high ranking for native fish values compared to similar river catchments. Many of the Tukituki sub-catchments have a high native fish ranking compared to other similar river catchments using the Freshwater Environments of New Zealand (FENZ) classification system.

The Tukituki Estuary and associated wetlands are a "Significant Conservation Area" in the Regional Coastal Plan and is noted as one of the "Areas with important natural and historic values in the Hawke's Bay Conservancy's Coastal Environment" (Hawke's Bay Conservation Management Strategy ref Appendix 4). It is a Recommended Area for Protection (RAP) under the department's Protected Natural Areas Programme due to its ecological and biodiversity values. It has also been classified as being of national importance for fisheries. It is a traditional and important harvesting site for eels and whitebait (mostly juvenile inanga, the adults of which spawn in places in the estuary). A wide variety of native fish have been recorded there and it is a breeding, feeding and nursery area for mullet, flounders and kahawai. It is a nesting and feeding habitat for a range of wetland birds and for the three species of tern using the estuary is the most important wintering habitat in the region (in conjunction with nearby Waitangi Estuary). Numerous threatened and at risk species use the estuary e.g. white heron, bittern, spotless crane, and the it provides habitat for a number of scarce and rare insect species (e.g. gossamer damselfly). A number of significant plant species are present including glasswort, shore primrose and arrow grass.

Lake Hatuma (part of which is wetland) has high natural value and is a very significant wildlife habitat. It provides an important and diminishing habitat for a number of threatened and declining bird species including the Australasian Bittern (of which there is a population of only 750 – 800 nationally), spotless crane, and dabchick.

No assessment has been undertaken in respect of the potential effects of PC6 on the Lake Hatuma, or the coastal environment (including the Tukituki estuary).

2. Uncertainty regarding the actual, potential and cumulative effects on native fish, freshwater and estuarine habitats and biodiversity:

PC6 adopts a reasonably untested approach to water quality management for the Tukituki Catchment by relying on P management to control periphyton growth.

This is a new approach with no other New Zealand examples. I am not opposed to the approach of managing periphyton growth as an environmental indicator to protect freshwater values. However, managing a single nutrient only is a risky approach. I discuss these risks below. When weighing the risks, the decision-maker should consider the following

- The likelihood of not achieving the environmental outcomes sought by PC6 and exacerbating the periphyton problem,
- The size of the consequence, i.e. how adverse an effect increases in periphyton would be in these environments, and
- The reversibility of the problem.

Safeguards could be built into PC6 to ensure that

- there is a precautionary and staged adaptive management approach until such time as the success of managing P to achieve the objectives is better demonstrated,
- sufficient certainty that measures to reduce P loading will be successful,
- sufficient management tools are available to monitor and review the success of this new approach, and
- if adverse effects become evident, there is the ability through the regulatory process to respond and, if necessary, reverse any adverse effects in a timely manner.

The N limits in PC6 represent a significant increase on the current ANZECC Guidelines for chronic toxicity based on limited research undertaken by NIWA relating to the toxicity levels of N and native fish tolerance, based on laboratory testing of a small number of species, where fish are generally provided with ample food and an otherwise low stress environment. There are inherent risks when applying 'lab tested' values to a large catchment where aquatic organisms are subject to other environmental stressors (e.g. temperature, flow) and species interactions (e.g. competition and predation).

The risks outlined below have not been fully assessed, and as a result there is an inadequate management response in PC6 for potential effects which may have a high potential impact. These risks include:

- The reliance on managing P as the controlling nutrient in periphyton growth for all water bodies in the catchment, in the circumstances where the supporting

information indicates that some sub-catchments are co-limited, unlimited, or N-limited.

- The “blanket approach” of managing P only may not be sufficient to protect the key values of waterbodies in the Catchment and provide for the life supporting capacity of freshwater, particularly in those tributaries where periphyton growth is N limited, N/P co-limited, or N/P unlimited.
- The inability to assess and respond to any changes in periphyton species composition that may result from increases or changes to nutrient concentrations. There is some evidence that limiting nitrogen is important as some periphyton species may be able to utilise P from entrained river sediment. No account has been taken to quantifying or addressing P being made available to periphyton from river sediment.
- The N toxicity research relied on in setting the numerical values proposed in PC6, is based on laboratory studies utilising a small suite of native migratory species. There are non-migratory species present in the catchment, in particular dwarf galaxias (a key threatened species) which has a restricted range in the region. The potential effects of increased NO₃ limits on such species is uncertain.
- PC6 should include objectives and limits on a sub-catchment basis, as tributaries are important for native fish species. Higher P limits in the tributaries risks excessive periphyton growth, reducing the habitat quality for fish and invertebrates, therefore tributary P limits should at least be set at 0.010 mg/l as in the mainstem. For the same reason sediment cover limits should also be set for tributaries where appropriate (they are presently only set for main stems).
- The potential effects of changes to nutrient discharge levels on coastal values, including the Tukituki Estuary. Monitoring of the Tukituki Estuary and associated wetlands undertaken by HBRC already shows indications of deteriorating water quality due to increased nutrient loads and some areas of open water have become crowded with green filamentous algae. PC6 ‘ignores’ potential effects on the coastal environment.
- The potential effect of changes to nutrient discharge levels on lakes and wetlands. The management of nutrient levels in lakes and wetlands has not been considered in PC6, yet may prove to be a tipping point for the management of nutrient levels in the catchment. Lake Hatuma is excluded from the provisions of PC6. Lake Hatuma (currently in a highly eutrophic state) contributes a significant load of P to the Mangatarata Stream, which in turn discharges into the lower part of the Tukituki River. PC6 not only omits limits for the lake itself, but there appears to have been no assessment of the impacts of ongoing P contribution from this wetland to the rest of the catchment.
- The ability for the regulatory process to respond to the lag time for nutrients to reach the rivers, and the estuary, and the accuracy of nutrient modelling to simulate this lag process.
- The ability to reverse problems, should adverse effects become evident.
- The risk that the approach to managing N-loading of the waterbodies in PC6 could have unanticipated consequences.
- The lack of monitoring provided for in PC6. The council monitoring network needs to be expanded (both in the number of sites and what is monitored) in order to properly assess whether limits and indicators are being achieved.
- It is unclear how the proposed ‘indicators’ in Table 5.9.1B will lead to actions if the proposed nutrient and periphyton approach is ineffective at maintaining the values of the waterway. The Macroinvertebrate community index (MCI) in particular

reflects a range of environmental conditions and provides a time integrated measure of conditions in the catchment, and should be set as a limit rather than an indicator.

- The responsiveness of the approach to managing seasonal fluctuations of nutrients and sediment and the ability to detect and act on breaches of limits in an effectual and efficient manner.
3. **PC6 does not give effect to the National Policy Statement for Freshwater Management 2011 (NPSFM).**

It is unclear whether PC6 currently achieves the requirements of the NPSFM, in particular in relation to Objective A2 and Policies A1 and B1 which require Regional Councils to set freshwater objectives and water quality limits for all water bodies.

- The objectives in PC6 are generic and are not water body specific or Water Management Zone specific. It is therefore unclear how the intended environmental targets and limits will suffice in protecting the values of each water body. An assessment of fish health and community composition is also necessary to assess the effectiveness of limits and minimum flows on maintaining the values of the catchment.
 - The section 32 report acknowledges that it does not give effect to Objective A2 in relation to identifying outstanding freshwater bodies. Setting water quality and quantity limits in the absence of such an assessment is not sound approach, particularly as the management of nutrient inputs and associated land use practices envisaged by PC6 may not then allow the regional council to protect those water bodies in the catchment which may be found to be "Outstanding" by later assessment. The Council's NPSFM Implementation Programme indicates that this assessment is well under way.
 - Objective C 1 "Integrated management" of the NPSFM has not been given effect to in PC6.
 - It is unclear whether the time frames in PC6 for the development and implementation of land use management systems to achieve the nutrient limits and targets in the plan will ensure that the implementation timeframes in the NPSFM will be achieved.
 - Phosphorus targets do not need to be achieved until 2030 and it is therefore unclear whether the NPSFM Objectives will be able to be fully implemented.
4. **The proposal does not give effect to the New Zealand Coastal Policy Statement 2010 (NZCPS), and potential effects on the coastal environment.**

PC6 does not include any discussion regarding the NZCPS. The Tūkinuki estuary and coastal environment (the values of which are discussed above) are relevant as they are a receiving environment. PC6 does not give effect to the relevant provisions of the NZCPS, including Policies 3, 4, 7 and 23.

5. **The proposal does not give effect to the Regional Policy Statement.**

Section 671 of the RMA requires regional plans to give effect to the Regional Policy Statement. The s 32 report mentions the RRMP Context at paragraph 3.5 but does not assess how and whether PC6 would give effect to the objectives and policies in the RRMP. In particular, an assessment should be made as to how PC6 will assist the Council in giving effect to the issues in Chapter 3 of the RRMP and objectives 21, 23 24, 25, 26 and 27.

6. Preservation and protection of wetlands and lakes, ss 6(a) and (c) RMA

The RRMP notes that the scarcity of indigenous wetlands is an issue for the Region and Policy 4 (b) lists Lake Hatuma as one of the priority wetlands which the HBRC provide support to preserve. Algal blooms have been recorded in Lake Hatuma.

Objective TT1(c) provides for the protection of significant wetlands, however PC6 specifically excludes Lake Hatuma from PC6 provisions suggesting that policy and water quality standards may be introduced in a future plan change. This would appear to be inconsistent with part 3.4 of the RPS RRMP Objective 15 and would not give effect to NPSFM Objective 2 b).

I consider that it is timely to address the matters of wetland health and sustainability in this plan change, including the effect of changes in nutrient management and the limiting effect of lake and wetland nutrient tolerances in terms of catchment land uses. PC6 as currently notified does not achieve ss 6(a) and (c) of the RMA.

7. Industry Best Practice/Setting Nutrient leaching rates and loads

PC6 relies on the HBRC approving 'industry best practice' for nitrogen leaching rates and nitrogen conversion efficiency rates. These are yet to be defined and will be included by way of a plan change later. As such, the Board of Inquiry is unable to determine the efficiency and effectiveness of this method to achieve the policies and objectives in plan change or whether it is the most appropriate way to achieve the purpose of the Act. The introduction of requirements as to 'industry best practice' through policies and permitted activity standards which are as yet undefined and are to be included later by way of a further plan change, creates uncertainty in the policies and rules.

8. ANZECC Guidelines

Freshwater management in New Zealand has largely adhered to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (the 'ANZECC guidelines'). The ANZECC Guidelines provide the authoritative reference for water quality management in New Zealand - particularly for toxic contaminants. In the absence of changes to the Guidelines, the values in them should be adhered to in PC6.

9. Increased Minimum Flows

I support the increased minimum flows to be achieved through PC6.

Summary

I would be concerned if PC6 were approved in its current form because of the potential effects on the values I have outlined above, and because it may form a blueprint for water quality management in other catchments. It would be inappropriate for PC6 to be approved in its current form until the risks that I have identified above are addressed. PC6 could adopt a more precautionary and adaptive management response to address the risks and uncertainties outlined above. In its current form, PC6 does not meet the requirements of the RMA for plan changes, and would not achieve the requirements of Part 2 of the RMA.

ATTACHMENT 3

I seek the following decisions from the Board of Inquiry:

1. That the Board request further information in respect of the risks identified in my submission, the appropriate management of those risks and the resulting effect on the regulatory regime for activities in the Tukituki Catchment. In particular, that the Board request further information from the HBRC:
 - in respect of the details of 'Industry Best Practice' to demonstrate how efficient and effective these practices will be to achieve the objectives in PC6 and to achieve the purpose of the RMA.
 - on the assessment by the HBRC regarding those waterbodies in the Tukituki Catchment that may be considered "Outstanding Waterbodies", and
 - on the values of wetlands and lakes in the Catchment and how these will be affected by the water management provisions in PC6.
2. That the Board seek independent peer review and advice in respect of:
 - the nutrient management approach in PC6, in particular whether the application of the limits and targets and management responses in PC6 will be sufficient to manage periphyton growth (including potential changes to periphyton species composition and any lags in effects becoming evident) and consequently to protect the freshwater values in the Tukituki Catchment, and
 - whether the values for NO₃ resulting from the lab-tested approach are appropriate for the Tukituki catchment.
3. In light of the further information and independent advice received by the Board, make any necessary changes to PC6 to address these matters. Otherwise, make the specific changes as set out in the Table below or changes to like effect, for the reasons set out in that Table, and any consequential changes as necessary.

Ref.	PC6 Provision	Position	Reasons	Decision Sought
			5.9.1 Freshwater Objectives	
1.	New Objective Adaptive Management	Amend	In my reasons above, I have raised some risks regarding the certainty for water quality outcomes by managing one nutrient to control periphyton growth. I consider that any decision making should adopt a cautious and adaptive approach because of the high freshwater values in the Tukituki Catchment and because there is uncertainty about potential effects and the reversibility of any adverse effects.	Add new Objective: Objective (New) <i>When considering applications for activities which will affect water quality by changes to nutrient levels in surface water bodies and groundwater in the Tukituki River Catchment to recognise that a cautious and adaptive approach is required until such time as the significance of any ecological effects resulting from the nutrient targets and limits in this plan on freshwater habitats, native and recreational fish species, domestic and stock water and recreational values are better known, and to recognise and provide for the potential for a lag in nutrient loading and leaching.</i>
2.	New Objective Outstanding Waterbodies	Amend	PC6 and the s32 evaluation should assess those waterbodies in the Tukituki Catchment which would qualify as 'outstanding'. Objectives, policies and rules should then need to be added to protect the quality of those waterbodies.	Amend PC6 to recognise any water bodies that are assessed as being "outstanding" and include objectives, policies and rules to protect the water quality in these water bodies. Include analysis of this in s32 report.
3.	New Objective Critical Values	Amend	PC6 should clearly identify the values of waterbodies in each catchment and add an objective which identifies the management objectives for each waterbody.	Amend PC6 to include a table showing the critical values of each water body in the Tukituki Catchment and add objective/s appropriate for each water body (Schedule 1).
4.	Objective TT1	Amend	Amend Objective TT1 to provide more guidance in respect of those matters that need to be addressed to determine whether the management and use of freshwater in the Tukituki River Catchment is "sustainable" and will result in the safeguarding of the	Amend Objective TT1 as follows (or words which will achieve a similar effect): <i>To sustainably manage the use and development of land including the discharge of contaminants and the taking, using, damming, diverting or drainage of freshwater of all</i>

5.32 Evaluation paragraph 4.4 page 10 and paragraph 11.3.4
 5.32 Evaluation paragraph 11.4 page 60

Ref.	PC6 Provision	Position	Reasons	Decision Sought
			<p>life supporting capacity of water.</p> <p>The objective should more clearly address the full range of biodiversity values of freshwater (for example ecosystem values, habitat, plant species etc) and should also consider the impact of periphyton management on freshwater values in addition of recreational and amenity values. Recognising and providing for biodiversity should be added to the objective. The biodiversity can be altered by changes in both water quality and the frequency of algal blooms by a shift towards more tolerant species. This may have an impact on sensitive species. Effects on native fish spawning sites also should be recognised as the fishery relies on the maintenance of the quality of these sites.</p> <p>The relationship between catchment based activities and the effects on coastal ecosystems and the coastal environment should also be included in the objectives to give effect to the NZCPS as required by section 67(3) RMA.</p> <p>The objective also does not adequately deal the interaction between groundwater and surface water; the Section 32 evaluation notes that there is a "high level of interaction" between these including the "impacts of groundwater takes on downstream flows" and I consider that it is therefore appropriate that this matter is recognised in order to achieve s 5(b) RMA.</p> <p>There is no timeframe for the improvement of water quality in the Tukituki Catchment and as such this Objective does not give effect to Policy E1 of the</p>	<p><i>water bodies in the Tukituki River Catchment so that:</i></p> <p>(a) River flows, water quantity and water quality maintain or enhance the biodiversity and ecosystem values of freshwater (rivers, lakes and wetlands) including the habitat and health of macro invertebrates, native fish, native fish spawning sites and trout;</p> <p>(b) Water quality enables safe contact recreation;</p> <p>(c) There are few occurrences of excessive Periphyton growths and abrasions are reduced so that there will be no result in any adverse effect on recreation use, and amenity, and the life supporting capacity of water;</p> <p>(d) The significant values of wetland-wetlands are protected;</p> <p>(e) The management of surface water bodies and groundwater is recognised and adverse effects on aspects of water quality and quantity that contribute to water are avoided, remedied or mitigated;</p> <p>(f) The relationship between groundwater resources and surface water is recognised and managed to ensure that both surface and ground water values are protected;</p> <p>(g) The integrity, form, function and resilience of the coastal environment, including the Tukituki Estuary, are protected;</p> <p>(h) The natural character of surface water bodies are recognised and protected.</p>
5.	Objective T12	Support in part/ Amend		<p>Amend Objective T12 to read (or words to a similar effect):</p> <p><i>Where the quality of freshwater has been degraded by human activities to such an extent</i></p>

Ref.	PCo Provision	Position	Reasons	Decision Sought
			NPSFWM.	<i>that Objective TT1 is not being achieved, to improve its quality over time as promptly as reasonable but no later than 2020 and thereafter to maintain and improve water quality of freshwater in the Tutukiki Catchment.</i>
6.	Objective TT3	Support in Part/ Amend	I support this objective which addresses groundwater management and the effect of discharges to land on water quality for domestic and stock water; however it does not adequately deal with or recognise the relationship between ground water and surface water which is addressed in Policies TT8 and TT11. As such this may impact on the ability of Objective TT1 to be achieved. Both matters in parts a) and b) of the Objective need to be considered. The current wording of the policy allows the cancellation of part a).	Amend Objective TT3 to read (or words to similar effect): <i>To ensure that:</i> <i>(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</i> <i>(b) Where groundwater resources are hydraulically linked to surface water, land use activities would not adversely affect ground water quality and surface waters and</i> <i>(c) Where such degradation does occur, the water supplies of the affected people and communities are treated to an appropriate standard for the uses being made of the water or alternative potable water supplies are provided.</i>
7.	Objective TT4	Support / Amend	This objective does not recognise that the existing the Tutukiki Catchment is already over allocated. Objective B2 NPSFWM not only requires that further over allocation is avoided, but that there is a "phase out" of existing over allocation. The objective should recognise this.	Amend Objective TT 4 to read: <i>In recognition that the Tutukiki Catchment is currently over allocated and that the severity of existing surface water irrigation takes is low, to avoid any further allocation or any increases in allocation of surface water and ground water to individual consented abstractors and not to reallocate water that is freed up through surrender or non-renewal of individual existing surface water and groundwater take consents.</i>
8.	Objective TT5	Support	I support the retention of this objective. In order to give effect to the NPSFWM and section 6(a) RMA it is appropriate that this objective is subject to Objective TT1.	Retain this Objective.
9.	Footnote 1.	Oppose / Amend	In order to give effect to Objective B2 of the NPSFW and achieve the phase out of over allocation, existing takes should not be able to be transferred and this will only exacerbate the state of over allocation.	Delete this footnote.

Ref.	PC6 Provision	Position	Reasons	Decision Sought
5.9.2 Water Quality Policies				
10.	New	Amend	The ability to ensure that flows including flushing flows are enabled in order for the purpose of assisting in maintaining or improving water quality is not recognised in the policies. Protecting flushing flows will assist in achieving Objective T11 (a), (b) and (c). It is appropriate to include this policy in the water quality provisions as the outcome of flow variability and quantity will have an impact water quality.	Add a policy or words to similar effect: <i>To ensure that any new lake, damming or diversion of water does not adversely affect the effectiveness of flows and provides for flow variability above the minimum flow to rear and flush perchidion and cyanobacteria encrustations, mobile and transport bed material, gravel, and trigger flow dependent aquatic life-cycle processes such as fish migration, and supports micro-invertebrate populations in the water bodies of the Tekeiki Catchment.</i>
11.	POL T11 1(a) and (b)	Amend / Oppose	I have some concerns regarding the risks in applying the revised "lab tested" Nitrate-nitrogen levels based on the toxicity to native fish on a catchment wide basis, the appropriateness of the species used in this testing, the lag in effects and the ability to reverse effects should these become evident. I support the inclusion of water quality limits for Nitrogen but question whether a sufficiently cautious approach has been applied given the risks. An adaptive management approach would be an appropriate response until such time as monitoring can demonstrate that adverse effects have been avoided.	Amend Table 5.9.1B to include numerical water quality and quantity limits at a sub catchment scale to reflect the values of the waterbodies recognised proposed in the attached Schedule. Note that the SIN limits proposed are yet to be rationalised against the current state, and these could be further refined through expert caucusing. Amend POL T11 by inserting a policy to reflect that the HBRC is adopting an adaptive management approach and will initially monitor the effectiveness P and N values.
12.	POL T11 (2)	Support	That Tables 5.9.1a and 5.9.1B be amended to include numerical water quality and quantity limits for each sub-catchment which are set to protect the values of freshwater bodies. Water quality limits and targets should also apply to lakes and wetlands. I seek that PC6 addresses all lakes and wetlands including Lake Haunui.	Remove footnote 3 and 4. Retain this policy.

Ref.	PC6 Provision	Position	Reasons	Decision Sought
13.	POL TT1 (3)	Support / Amend	provide for high biodiversity values in Zone 4. I support the inclusion of water quality limits and targets for the Tukituki Catchment – the proposed indicator values are important 'real' descriptors, that reflect the values of the waterway - i.e. for recreational fishing, biodiversity and contact recreation, of the effectiveness of the plan and it's proposed limits, and therefore should be applied as triggers whereby if they are consistently being exceeded then the plan is clearly failing it's objectives and the policies, rules, and limits relevant to water quality should be reviewed and causes identified.	Retain this policy. But implement the proposed 'indicators' as limits.
14.	POL IT3	Support / Amend	I am generally supportive of the provisions in this policy with the exception that I consider it would be a more cautious approach to set limits which would avoid chronic rather than acute toxicity effects.	Amend part (c) to refer to chronic rather than acute effects and consequently amend the Total Ammoniacal Nitrogen levels to the appropriate level
15.	POL TT4(b) (c)	Oppose / Amend	"Industry Good Practices" have not been defined and will not be determined until 2018 when they are then included in the RRMP by way of a plan change, ³ this creates uncertainty in the application of PC6. It is not possible for the Board to evaluate the success these practices will have in achieving the objectives in the plan. The result is that it is unclear and uncertain how efficient and effective the policy will be to achieve the objectives in the plan. The Glossary indicates that these practices are to be those "promoted by the relevant primary production sector." ⁴ However Footnote 41 to Rule IT1 indicates that the industry good practice leaching rates will be	Amend the policy to qualify this with wording similar to the following (with consequential amendments to the entire plan change to be consistent with this relief) And either define the industry good practices for inclusion in the plan change or delete the reference to industry good practices and set nitrogen load and limits and leaching/conversion rates in the plan: 1 (b) Require industry good practices, which have been approved by the Hawkes Bay Regional Council to assist in achieving water quality objectives, limits and targets (including nitrogen conversion efficiencies) to be implemented on farms in order to minimise nitrogen losses,..... (c)(i) Allow a reasonable time (by 1 July 2017) for the primary industry sector to

³ S32 evaluation page 41 9.7.5

⁴ Glossary : Plan Change 6 – page 31

Ref.	PC6 Provision	Position	Reasons	Decision Sought
			<p>"determined" by HBRC in consultation with the primary sector. This is unclear.</p> <p>I am not opposed to the use current best practice as a method where these are demonstrated as being able to assist in meeting the standards and objectives in the plan. The fertiliser industry may well have different practices than the farming industry or a landcare industry, but neither may assist the plan to achieve nutrient limits and targets.</p> <p>Council should retain discretion over any industry standards and practices that are referred to in the plan so that it is clear that the effect of the practices will meet the purposes required. I request the HBRC detail the practices and include these in PC6.</p> <p>An alternative to this would be for the Council to set per hectare nitrogen limits/loads and methods to mitigate nitrogen losses and include these in the plan.</p>	<p>develop industry good practice nitrogen leaching rates and nitrogen conversion efficiencies which have been approved by the Hawke Bay Regional Council to assist in achieving the water quality objectives, limits and targets for the Tukituki Catchment for different land uses</p> <p>(fi) Include industry good practice nitrogen leaching rates and nitrogen conversion efficiencies which have been approved by the Hawke Bay Regional Council to assist in achieving the water quality objectives, limits and targets for the Tukituki Catchment in the Regional.</p> <p>(fo) 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 approved under part (fi) of this policy.</p> <p>Amend the Schedules to include approved Industry Best Practice.</p>
16.	POL TT4 (c) introductory sentence	Amend	<p>It is not accurate to state that the Tukituki Catchment is generally in a state of "under allocation" in respect of instream nitrate-nitrogen limits based on the premise that Nitrogen can be elevated due to the testing undertaken on the toxicity effect on native fish. Some sub-catchments are identified as exceeding the nitrogen limits (see Footnote 14).</p>	<p>Amend part (c) to read (or words to similar effect):</p> <p>(c) Recognise that the Tukituki River catchment is generally in a state of under-allocation with respect to instream nitrate-nitrogen limits therefore Provide for the management of instream nitrogen-nitrate to:</p>
17.	POL TT4 (c) (i)(ii) (iii) and (iv)	Oppose	<p>A long lead in time is proposed to allow for the development and inclusion of nitrogen conversion efficiencies, preparation of nutrient budgets for farms</p>	<p>Revise the timeframes to demonstrate that the policy will be able to give effect to the timeframes in the NPSFWM.</p>

Ref.	PC6 Provision	Position	Reasons	Decision Sought
18.	POL TT4 1(e)	Amend	and to implement changes to achieve best practice. It is unclear how this timeframe will fit with the timeframes in the NPSFWM, the review of the management approach in Policy TT5 (2) (c) in 2020 and 2025 and how the Council will be able to assess the effectiveness of the approach in PC6 in meeting the indicators in the MERI plan. Foot note 14 acknowledges that there are local exceedences of nitrate-nitrogen in the Kahahakui and Mangapohio tributaries. In order to meet the objectives of PC6 and the nitrogen targets in the plan it is not appropriate for even minor increases in nitrogen leaching rates in these sub-catchments.	Retain the policy but exclude catchments and sub-catchments where there are already exceedences in Nitrogen levels.
19.	POL TT 4 1 (f)	Amend	It is unclear how allowing any increases in a sub-catchment where the nitrogen level is already exceeded will meet the objectives in the plan. There is no process to audit Farm Environment Plan to assess the performance of the farm. This should be undertaken by an independent suitably qualified person and reported to the HBRC annually.	Retain the policy but exclude catchments and sub-catchments where there are already exceedences in Nitrogen levels.
20.	POL TT 4 1 (g)	Amend		Amend Schedule XXII as shown in this submission to include the audit process. Amend Policy TT4 1 (g) to read <i>Require production land that requires a resource consent under POL TT 4 1 (f) to prepare a Farm Environmental Management Plan prepared and audited in accordance with Schedule XXII.</i>
21.	POL TT 4 2	Support /Amend	I support the use of Maximum Allowable Zone Loads (MAZL) however these are yet to be determined and this again creates uncertainty for the decision maker to determine how efficient and effective the policy will be to achieve the objectives in the plan. Further there is no timeframe for determining these allowances and this will impact on the ability of the	Determine and include in the plan MAZL which have been assessed as being efficient and effective at achieving the objectives of PC6.

Ref.	PC6 Provision	Position	Reasons	Decision Sought
22.	Implementing the Nitrate-Nitrogen Limits – New (Monitoring and Review)	Amend	HERC to use the information in assessing any resource consents as required by part 2 (b) of this policy. There is no policy to monitor and review the instream nitrate-nitrogen limits or periphyton responses/changes to determine whether or not changes to the regulatory approach including changes to the targets and limits in the plan are necessary.	Amend PC6 to include a monitoring and review policy which includes assessments of changes to periphyton species composition and growth, effects on instream values from the nitrate levels and recommend changes to the regulatory approach to address these.
23.	POL TT5 1	Amend	This policy requires that DRP limits are not exceeded and targets attained by 2030. This is a long timeframe and as a result it will be difficult to determine whether the water quality limits will achieve the requirement to implement the NPSFWM policies fully by 2030. The s 32 evaluation notes that throughout the catchment there is a variance in N and P concentrations and limitations ⁵ where these are currently exceeded the timeframe of 2030 is too long to meet the NPS.	Amend the timeframes in this policy to ensure that P management can be demonstrated as achieving the NPSFWM policies by 2030.
24.	POL TT5 1 (a), (b) and (c)	Support	Using the resource consent process including the review processes under the RMA s 128 will assist the HERC in reducing the effects of existing point source discharges which may be resulting in exceedences of the P limits.	Retain these policies.
25.	POL TT5 1 (d) (i) (ii)	Amend	I support in part the provisions in part (d) of Policy 5 which address the exclusion of livestock from lakes, wetlands and permanently flowing rivers and their margins. However, the policy as currently worded is complicated and may be difficult for the Council to enforce. The benefits of exclusion of stock and riparian management to manage water quality are well	Amend the policy to require stock exclusion from all waterbodies, their beds and margins, including lakes and wetlands. Livestock exclusion may be provided by way of permanent fencing, dense vegetation or other natural barriers or where permanent fencing is unachievable, temporary fencing may be used, but stock exclusion must be achieved using an effective method. An appropriate planted riparian setback should be provided where stock exclusion is by permanent fencing.

⁵ S32 Evaluation page 21
⁶ Section 32 evaluation para 9.4 -page 23

Ref.	PC6 Provision	Position	Reasons	Decision Sought
			<p>documented and the section 32 evaluation also notes that the contribution of P losses "from stock yards, milking sheds, tracks, races and intensively grazed areas can also be very significant and these are identified as critical source areas for P". The Tūkituki Catchment Implementation Plan (draft) also notes that "The primary regulatory mechanism for reducing P in waterways in Change 6 is through the provision of a stock exclusion rule." It is clear that stock exclusion will be pivotal in achieving the nutrient limits for Phosphorous in the plan and I consider that as such stock exclusion should apply more widely than envisaged by this policy.</p> <p>Set backs are also not required by the policy and the s32 report indicates that advice on the appropriate distances will be provided by HBRC however this is not reflected by way of an advice note in PC6.</p>	<p>Provide an Advice note on appropriate set back requirements.</p>
26.	POL TT5 1 d (iii)	Support / Amend	<p>Although I support the requirement for stock races and crossing to be bridged, this policy is poorly worded.</p>	<p>Retain the policy but amend to read "Requires all stock races which cross a water body and all regularly used stock crossings to be bridged or culverted by 30 June 2017"</p>
27.	POL TT5 1 (e)	Support / Amend	<p>Providing incentives to achieve the DRP targets in the plan is appropriate. I have suggested in my submission number 25 that riparian planting should be required with permanent fencing, stock races and crossings should be bridged and run off from stock yards and races should avoid water bodies.</p>	<p>Retain this policy but amend to replace the word "encourage" in parts (ii), (iv), (v) with "require."</p>
28.	POL TT5 2 (c)	Support	<p>Although I support the review proposed in the policy it is unclear whether the timeframes proposed will allow the HBRC to fully implement the NPSFWM by 2030.</p>	<p>Amend the timeframes so that the HBRC can demonstrate that the water quality objectives can be met prior to 2030.</p>

⁷ Tūkituki Catchment Implementation Plan Draft Page 9

Ref.	PC6 Provision	Position	Reasons	Decision Sought	Comment 1
29.	POL TT6 2	Amend	Ensuring that this policy can be achieved will be difficult as it requires the operators of the Community Irrigation Scheme to provide details of non-scheme properties and their future operations based on existing and future nitrogen losses based on the nutrient budgets provided in POL TT6 1, however the Scheme proponents have no control over the farm management practices on non-scheme properties or the compliance with Farm Environmental Plans. Part (c) (i) Refers to baseline data or modelled data. It is unclear what level of detail is required in the baseline data or the duration this needs to be.	Amend to provide more certainty that Community Irrigation Scheme be able to ensure that the critical values of water bodies in each water management zone can be maintained.	Comment 1: - you want to monitor rather than modelled? How long for baseline - can we specify? Comment 2: I don't really understand this policy in some ways - why would you use a baseline if the limit is exceeded, surely you just wouldn't be allowed? - given that this relates to land use consents under irrigation schemes? Comment 3: These definitions are unclear as to how they will be applied. The current definitions imply that 5 year worth of data monitoring are required, this is a long time and we have had mixed messages from the council as to how it will actually be applied. In addition, we should submit that where limits are exceeded land use controls (and whatever else) apply to all catchments upstream (similar to how low flows work).
30.	POL TT6 2 (c)	Amend	The policy should also recognise that other measures that could be employed by production land use activities to avoid, remedy and mitigate effects (e.g. riparian retirement and planting) such that these will be considered by the HBRC when authorising consents for production land use. To give effect to the NZCPS, effects on the coastal environment (which is the final receiving environment) should also be considered.	Add to 2 (c) (iii) Ensure that methods are adopted by the Scheme to that collectively ensure that and cumulative adverse effects of production land use activities on water bodies and coastal environment are avoided, remedied and mitigated.	Comment 1: - ? Comment 4: This is going to be challenging - maybe we leave it blank with an asterisk that the levels support the critical values
31.	Table 5.9.1A	Amend		Amend as provided for in this submission.	Comment 1: - ?
32.	Table 5.9.1B and key	Amend	Indicators MCI etc should be targets and limits? Set interim level for N or whatever? Attachment	Amend in conjunction with POL XX that proposed indicators, hydro targets and limits	Comment 1: - ? Comment 4: This is going to be challenging - maybe we leave it blank with an asterisk that the levels support the critical values
33.	Table 5.9.2	Amend	Amend Attachment	Amend as provided for in this submission.	Comment 1: - ? Comment 4: This is going to be challenging - maybe we leave it blank with an asterisk that the levels support the critical values
34.	Minimum Flows	Amend	5.9.3 Water Quality Policies This policy provides for the exclusion of Community Irrigation schemes from minimum flow requirements.	Amend the part (a) to read (or words to similar effect)	Comment 1: - ? Comment 4: This is going to be challenging - maybe we leave it blank with an asterisk that the levels support the critical values

Ref.	PC6 Provision	Position	Reasons	Decision Sought
	Policy IT7 (a)		Dams can have an adverse effect on flows and which will in turn adversely impact on the life supporting capacity of freshwater. It is unclear why Community Irrigation schemes should be exempt from the minimum flow requirements.	(a) The minimum flow limits in Table 5.2.3 shall apply to consented takes; including consented ground water takes with High Stream Depletion Classification as described in POL IT11, but excluding and including Community Irrigation Schemes which involve storage of water behind an instream dam and High Flow Allocation Takes as described in POL IT 10;
35.	POL IT7(c)	Support	It is appropriate to provide minimum flow requirements for both the main stems and tributaries to recognise and protect instream values.	Retain this policy.
36.	POL IT8 (a)	Oppose / Amend	The provisions in this policy place an inappropriate priority/emphasis on security of supply when considering the management of the taking of surface water. To meet the purpose and principles of the RMA and the NFSFWM when considering the management of surface and groundwater takes, safeguarding the life supporting capacity of water must be given effect to in this policy.	Amend the policy to read (or words to similar effect) (a) Recognising that although allocation limits for surface water should be determined in order to, as a first priority, safeguard the life supporting capacity of water, and to provide a reasonable security of supply
37.	POL IT8 (b)	Support	In managing surface water takes it is appropriate to recognise the degree to which ground water and surface water is connected. This would achieve Objective IT3 as modified by my submission.	Retain this policy.
38.	POL IT8 (c)	Oppose / Amend	It is unclear why setting surface water and ground water allocation limits in this plan change should be based on the existing volume of consented abstraction when the S32 evaluation notes that one of the key issues in the Tukituki Catchment is the "Inadequate physical habitat and habitat quality at time of low flow for the regionally significant trout fishery and native fish." One of the factors considered to be contributing to these issues include "Existing minimum flows set too low" and "Too much water authorised to be taken from rivers and groundwater." In short the Catchment is currently	Amend this policy to read (or words to similar effect): "Setting surface water and ground water allocation limits that are based on the existing volume of consented abstraction (Tables 5.2.4 and 5.2.5) will ensure, as a first priority, that adequate physical habitat is available at all times, in particular at times of low flow during the summer months for native and recreational fisheries, and that recognising the demand for water to be available for irrigation purposes and schemes and existing consented abstractions."

Ref.	PC6 Provision	Position	Reasons	Decision Sought
39.	Table 5.9.3		<p>overallocated.</p> <p>Setting limits based on existing volumes of consented abstraction is unlikely to mitigate these factors.</p> <p>flows in Zone 5? Is 90% habitat protection sufficient – please amend table – why are there no min</p>	
40.	Table 5.9.4		<p>-- when I compare this table with the Table 9 – now yearly volume not per week – shouldn't it be per week? ??</p> <p>Allowing Community Irrigation Schemes and permitted takes to be exempt from the water allocation limits would not ensure that HBRC is meeting the Objectives of PC6 and NPS FWM.</p>	<p>Amend Footnote 29 to remove the reference to Community Irrigation Schemes.</p>
41.	POL ITT10 (a)	Oppose	<p>The taking of water during high flows above the median flow will result in a "flat lining" situation. Flow variability resulting from high flows supports the natural flow cycles and instream processes which are important to maintain the natural character of the stream bed by mobilising sediment and gravel. Flushing flows are important to maintain instream values and securing these flows will assist the achievement of the Objectives of this plan change.</p>	<p>Amend the policy so that High Flow Allocations do not result in a flat lining situation but retain flow variability.</p>
42.	POL ITT11	Support	<p>I refer to my submission points 4 and 6. Managing the effects of groundwater takes on surface water quality is supported.</p>	<p>Retain this policy.</p>
43.	POL ITT 13 1	Oppose /Amend	<p>The wording of this policy is inappropriate. Providing for the "enabling" of Community Irrigation Schemes places a presumption in the plan in favour of allowing the schemes and this is contrary to section 5 RMA which</p>	<p>Amend the introductory sentence to read (or words to similar effect): <i>Enabling takes When considering applications for Community Irrigation Schemes capable of providing irrigation water to at least 5,000 hectares of production land provided that the management of the takes and the management of the scheme to ensure</i></p>

Comment: Zone 5 appears to be in Zone 1 now (Papamuri Stream) also there is no zone 4

Ref.	PC6 Provision	Position	Reasons	Decision Sought
			<p>requires the balancing of social, economic and environmental considerations in the decision making for the sustainable use and development of natural resources.</p> <p>Part (c) of the policy refers to the requirement to meet industry good practice. I have raised concerns in my submission number 16 that these practices have yet to be developed and how it is not possible to assess whether these measures will be efficient and effective in achieving the Objectives in the plan.</p> <p>Part (g) of the policy is unnecessarily restrictive and should be expanded to ensure that all the matters in Objective T11 are addressed.</p>	<p><i>that the application:</i></p> <p>Amend (e) to read (or words to similar effect): <i>(e) Demonstrates the adequacy of measures to be used to ensure that on farm practices of production land will ensure the sustainable use of freshwater.</i></p> <p>Amend (g) to read (or words to similar effect): <i>(g) Avoids, remedies or mitigates adverse effects on aspects of water quality and quantity, including those that contribute to matters in rivers and streams affected by the operation of the Community Irrigation Scheme.</i></p>
44.	POL T114 (c)	Support	<p>Part (c) of the policy provides for renewal of existing takes to be a Discretionary Activity. In order for the HBRC to effectively manage the targets and limits in the plan this category of consent is appropriate.</p>	Retain the policy.
45.	POL T114 (d)	Oppose	<p>In the reasons for my submission I have raised some risks regarding the certainty of environmental outcomes from the water quality management approach adopted in this plan change. The suggestion that granting a maximum term of consent should be tied to the capital investment is not appropriate, the maximum term of consent should be relate to the certainty that environmental objectives can be met.</p>	<p>Amend this policy to read (or words to similar effect): <i>(d) From 1 May 2013 When considering applications for 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 plan and may be up to 35 years.</i></p>
46.	POL T114 (f) (g) and (h)	Support	<p>In order to manage the allocation of water in a manner which will achieve the objectives of the plan - it is appropriate to manage renewal and new takes as a discretionary activity and to limit the rates of take.</p>	Retain these policies.
47.	POL T115	Support	<p>Accurate measuring, recording and metering of</p>	Retain this policy.

Ref.	PC6 Provision	Position	Reasons	Decision Sought	Comment
48.	Rule TT1 (a) and (c)	Amend	<p>consented takes is supported.</p> <p>This rule provides for small increases in nitrogen to occur as a result of land use change or farm management practices. I note there is no provision for restricting P (which is over allocated) to 2013 levels provided for in this permitted activity rule. The rule does not achieve a position of P neutrality or a reduction in P levels.</p> <p>The approach in PC6 is to manage P to reduce periphyton growth. I have raised some concerns regarding the ability for periphyton to uptake Phosphorous stored or entrained in sediment. To achieve the objective TT1 and POL TT5 of PC6 in managing periphyton growth any activity which would result in an increase in the discharge of Phosphorous should be a non-complying activity.</p>	<p>Amend Rule TT1 (c) to ensure that P Management plans include details calculate the existing P leached from existing uses as at 2013 and add the rule that the P losses from any land use change or farm management change shall not result in an increase in P from the 2013 level</p> <p>Add a rule that any activity in the Tukituki Catchment which would increase Phosphorous discharges from existing (2013) levels is a non-complying activity.</p>	<p>I note that... would see support... would be included in this policy!</p>
49.	Rule TT 1(d)	Oppose	<p>As discussed in my submission point number 16 there are uncertainties regarding the effectiveness and efficiency of industry good practice to achieve nitrogen leaching and conversion rates as these are yet to be defined. The Rule will have legal effect if PC6 is approved but compliance will not be possible until 2020 and relies on approval of a further plan change to include industry best practice for leaching rates. I submit that in the absence of defining these practices this creates uncertainty in the rules and plan provisions and the ability of the provisions to meet the purpose of the RMA.</p>	<p>Amend the rule by either defining the industry best practice assessed as being able to assist in meeting the nitrogen limits in the plan OR delete part (d) and replace it with nitrogen leaching and conversion efficiency rates which will enable the achievement of the nitrogen limits in the plan.</p>	<p>Comment: I note that... would see support... would be included in this policy!</p> <p>Comment: I note that... would see support... would be included in this policy!</p> <p>Comment: I note that... would see support... would be included in this policy!</p>
50.	Rule TT 1(f)	Oppose	<p>The provisions for stock exclusion are unclear and</p>	<p>Delete parts (f) and (g) and replace with rules which require the exclusion</p>	<p>Comment: I note that... would see support... would be included in this policy!</p>

Ref.	PC6 Provision and (g)	Position	Reasons	Decision Sought
51.	Glossary	Amend	<p>complicated; they will be difficult for the HBRC to enforce. See my reasons and relief at submission number 26.</p> <p>Subject to my concerns in my submission point 16 -The definition for Industry Good Practice should be amended so that it is clear that the approval or discretion of use of any practice is held by the HBRC.</p> <p>Include Industry best practices determined to assist in achieving the objectives of the plan in PC6.</p> <p>PC6 provides that the provisions of these Chapters do not apply to the Tukituki Catchment; however there are policies, explanations and reasons and matters for consideration in these chapters which would assist the plan user and the HBRC in achieving the objectives and policies for the Tukituki Catchment.</p>	<p>of stock from the beds and margins of waterbodies, including lakes and wetlands.</p> <p>Amend to read: <i>Refers to any farm management practice, the use of technology or changes to farming systems that reduces the environmental impact of the use of production land on the environment and is approved by the HBRC as assisting in achieving the objectives in this plan that is promoted by the relevant primary production sector or industry good practice.</i></p>
52.	Chapters 5.4 - 5.7 inclusive	Amend	<p>... -- surely there are things that are incongruous in parts of here -- if we amend the Tables will we be happy with the levels that result? Have a good look at how Fish and Game have approached this</p>	<p>Retain the policies and objectives, explanation and reasons, matters for consideration and anticipated environmental results which would assist plan users to implement the objectives, policies and rules in plan change</p> <p>Comment: This is a bit weak - but there is some good explanation and processes in these chapters that are just lost by PC6.</p>
53.	6.6.5 Generic Discharges of Contaminants to Water			
54.	Rule 50	Oppose	<p>Under the provisions of plan change 6 there is still the opportunity for stock to enter waterways. Retaining this permitted standard would be appropriate in the Tukituki Catchment.</p>	<p>Retain rule 50 as currently written in the operative plan (that is do "Other than in the Tukituki Catchment" from this rule.)</p>
55.	Schedule XIX		<p>if can't comment on Schedule XIX -- but why shouldn't zones 2 and 3 be 95 % protection if Zone 1 is 95% and Zone 1 relies on whats coming into it from Zones 2 and 3/</p>	<p>Comment: For starters there is NO temperature limit in Table 5.9.1A of PC6, and secondly here they call water, clearly a limit!</p> <p>Comment: Because there is no room to intensify assessment would probably show that while specific details may differ, the overall value of each will be fairly similar. I think it would be reasonable to set for the same limits for N in these zones (i.e. 95%).</p>
56.	Schedule XXI			
57.	Schedule XXII	Amend	<p>Some changes are required to the schedule to improve its effectiveness.</p>	<p>Amend Point 2 to include "the location of all water bodies where stock access or crossing occurs."</p> <p>Comment: THIS SCHEDULE LOOKS OK TO ME!</p>

Ref.	FC6 Provision	Position	Reasons	Decision Sought
			<p>The Schedule currently requires the use of the nutrient budget model to OVERSEER, this is unnecessarily restrictive.</p> <p>There is no audit process in this Schedule.</p>	<p>Amend Point 3. Delete "major" from this sentence.</p> <p>Amend point 4 (b) to read <i>"Irrigation management: To operate irrigation systems efficiently and ensuring that the actual use of water is monitored and is efficient."</i></p> <p>Amend point 4 (d) to replace "water way" with "waterbody"</p> <p>Add (iv) to point 4 <i>"detail commentaries with the rank of the environmental effects and risks."</i></p> <p>Amend Point 5 to read <i>Nutrient budgets are prepared by a suitably qualified person using a nutrient budget model (such as OVERSEER) for each of the identified land management units and the overall farm.</i></p> <p>Add <i>Farm Environment Management Plan Audit Requirements</i></p> <p><i>The Farm Environment Plan must be audited by a Farm Environment Plan Auditor who is independent of the farm being audited (is not a professional adviser for the property) and has not been involved in the preparation of the Farm Environment Plan, either personally or as an employee or contractor of the industry group, supplier or consultancy that has prepared the Farm Environment Plan.</i></p> <p><i>The Audit framework will give a grade of A, B or C for the Farm Environment Plan itself and a grade of A, B or C for performance against the Farm Environment Plan actions.</i></p> <p><i>The Farm Environment Plan will be assessed against the following minimum criteria:</i></p> <ol style="list-style-type: none"> <i>1. Whether the Plan is technically sound and feasible</i> <i>2. Does the Plan identify and address the principal environmental effects and risks?</i>

Ref.	PC6 Provision	Position	Reasons	Decision Sought
				<p>3. Does the Plan enable all statutory obligations, including resource consents, to be met?</p> <p>4. Is the detail in the Plan, actions and timetables for achievement commensurate with the scale of the environmental effects and risks?</p> <p>The farming activity occurring on the property will be audited against the following minimum criteria:</p> <ol style="list-style-type: none"> 1. Compliance with all relevant statutory requirements; 2. An assessment of the performance against the targets, good practices and timetables in the Farm Environment Plan; 3. An assessment of the robustness of the nutrient budget(s); 4. An assessment of the efficiency of water use (if irrigated). <p>Farm Environment Plans shall be audited annually and the audit results provided to the Hawke's Bay Regional Council no later than 31 December for the previous 1 July to 31 June year, or such other annual period nominated. Once a farm environment management plan review and audit period is nominated, each successive audit may be no more than 12 months apart.</p>

Schedule 1: Suggested core environmental values for waterbodies in the Tukituki catchment

Sub-zone name	Sub-zone name	TLG Fishery (TF)	Trouble Spawning (TS)	Arctic Alga (AA)	Arctic Alga (AA)	Control of Recreational Use (CRU)	Life Support Capacity (LSC)	Native Fish Community (NFC)	Native Fish Long-term Cell (NFC)	Native Fish Migration (NFM)	Native Fish Spawning (NFS)	White Water Inflow (WWI)	Invasive Species (ISR)	Combined Recreational Use (CRU)	Natural State (NS)	Well and AVE (WA)
2 T1 Lower Waipawa		✓	✓	✓	✓	✓	2	1	1	1	1			1	1	✓
4 T1 Upper Waipawa		✓	✓	✓	✓	✓	2	1	1	1	1			1	1	✓
2 T2 Mangio cuku		✓	✓	✓	✓	✓	3	2	1	1	1			2		✓
3 T3 Kahahakuri		✓	✓	✓	✓	✓		2	1	1	1					✓
3 T4 Middle Tukituki		✓	✓	✓	✓	✓	1	2	1	1	1			2	1	✓
4 T4 Upper Tukituki		✓	✓	✓	✓	✓	2	2	1	1	1		2	2	1	✓
3 T5 Tukipo		✓	✓	✓	✓	✓	2	2	1	1	1			2	2	✓
3 T6 Makaratu		✓	✓	✓	✓	✓	2	2	1	1	1			2	1	✓
3 T7 Porangaitau		✓	✓	✓	✓	✓		2	1	2						✓
3 T8 Maharak etc		✓	✓	✓	✓	✓	2	1	1	1						✓
1 T9 Mangatara		✓	✓	✓	✓	✓		2	1							✓
1 T10 Mangamahaki		✓	✓	✓	✓	✓	3	1								✓
5 T11 Papanui		✓	✓	✓	✓	✓	2	1	1							✓

Comment: -- to differentiate this table from Fish and Game's we could just stick to the key things we want to advocate for -- i.e. leave out the ones that are really fish and game's (although some might say we do have a role to advocate for sports fishing) -- i.e. what do you think about just having the pink columns?

(c)

[That Policy IT3 be amended as follows]

Table of limits that apply to point source discharges to support Life-Supporting Capacity and Aesthetic values.

IRRC WAZ	Sub- zone code	Subzone name	DNCR mg/L	Chlor mg/L	Temperature °C	BOD mg/L	ROM mg/L
2	T1	Lower Waipawa	20	20	2	2	5
4	T1a	Upper Waipawa	20	20	2	2	5
2	T2	Mangaonuku	20	20	2	2	5
3	T3	Kahakahu	20	30	3	2	5
3	T4	Middle Tukituki	20	20	2	2	5
4	T4a	Upper Tukituki	20	20	2	2	5
3	T5	Tukituki	20	20	2	2	5
3	T6	Makariri	20	30	3	2	5
3	T7	Porangahau	20	30	3	2	5
3	T8	Makarakeke	20	30	3	2	5
1	T9	Mangaturua	20	30	3	2	5
1	T10	Manganahaki	20	30	3	2	5
5	T11	Papanui	20	30	3	2	5
1	T12	Mangurua	20	30	3	2	5
1	T13	Makara	20	30	3	2	5
1	T14	Hawaia	20	30	3	2	5
1	T15	Middle Tukituki corridor	20	20	2	2	5
3	T16	Lower Tukituki corridor	20	20	2	2	5
4	T17	Makaroa	20	20	2	2	5

Note: This table replaces the standards in the proposed Plan Change 6 for POLIT3.

[N.B. Limits in Table 5.9.1a and 5.9.1b must also apply to discharges]

Comment
I think we need to follow this approach for POL IT3, apart from supporting the inclusion of temperature in the policy. I'm not sure why part (c) of the policy only looks at less than median flows?

Comment
valid point
This is a

(d)

That table 5.9.1A be amended as follows

Table 5.9.1A Limits that apply to all waterbodies to support Life-Supporting Capacity, Contact Recreation and Aesthetic Values.

HRG WVZ code	Sub- zone name	Filamentous periphyton cover > 2cm m	Substrate periphyton cover > 1mm m	Green/blue algae cover m	Ammoniacal N mg/L ave	Ammoniacal N mg/L ave	Ammoniacal N mg/L max	Temperature °C	DO mg/L
2	T1 Lower Waipawa	30	60	20	0.32	0.32	1.7	6.5-8.5	260
4	T1a Upper Waipawa	30	60	20	0.32	0.32	1.7	6.5-8.5	260
2	T2 Mangomuku	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T3 Kahahakori	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T4 Middle Tukituki	30	60	20	0.32	0.32	1.7	6.5-8.5	260
4	T4a Upper Tukituki	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T5 Tukipo	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T6 Makareu	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T7 Fonangahu	30	60	20	0.32	0.32	1.7	6.5-8.5	260
3	T8 Mabamake	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T9 Mangatarata	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T10 Mangamahaki	30	60	20	0.32	0.32	1.7	6.5-8.5	260
5	T11 Papanui	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T12 Mangarata	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T13 Malara	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T14 Hawea	30	60	20	0.32	0.32	1.7	6.5-8.5	260
1	T15 Middle Tukituki corridor	30	60	20	0.32	0.32	1.7	6.5-8.5	260

Comment: 19]: Support standards in this table

Comment: 19]: I would support the inclusion of a pH limit as this affects ammoniacal-N chronic toxicity (in league with temperature)

Comment: 20]: Same as plan and all water

3	T16	Lower Tukituki corridor	30	60	20	0.32	1.7	6.5-8.5	260	550
4	T17	Mataroro	30	60	20	0.32	1.7	6.5-8.5	260	550

* Excluding cover by benign cyanobacteria mats.

(e) That table 5.9.1B be amended as follows including amending monitoring/ compliance parameters

Table 5.9.1B: Limits that apply to support Trout Fishery (class 1, 2 and 3), Trout Spawning, Life-Supporting Capacity, Contact Recreation and Aesthetic Values

Sub-zone code	Sub-zone name	DO	Dissolved Oxygen	Temperature	pH	Water Quality Index			
2	T1 Lower Waipawa	5	120	120	19	80	0.01	99	0.167
4	T1a Upper Waipawa	5	120	50	19	80	0.006	99	0.06
2	T2 Mangamuku	5	120	120	19	80	0.01	99	0.167
3	T3 Kahakahi	3.75	100	120	21	80	0.01	99	0.167
3	T4 Middle Tukituki	5	120	120	19	80	0.01	99	0.167
4	T4a Upper Tukituki	5	120	50	19	80	0.006	99	0.06
3	T5 Tukipou	5	120	120	19	80	0.01	99	0.167
3	T6 Makaretu	3.75	100	120	21	80	0.01	99	0.167
3	T7 Porangahau	1.6	100	120	21	70	0.01	95 95 or 90	0.444
3	T8 Maharaheke	3.75	100	120	21	80	0.01	99	0.167
1	T9 Mangamaha	3.75	100	120	21	80	0.01	99	0.167
1	T10 Mangamaha	3.75	100	120	21	80	0.01	99	0.444
5	T11 Papanui	3.75	100	120	21	80	0.01	99	0.444
1	T12 Mangamaha	3.75	100	120	21	80	0.01	99	0.444
1	T13 Makara	1.6	100	120	21	70	0.01	99	0.444
1	T14 Hawea	1.6	100	120	21	70	0.01	95	0.444
1	T15 Middle Tukituki corridor	5	120	120	19	80	0.01	99	0.167
3	T16 Lower Tukituki corridor	5	120	120	19	80	0.01	99	0.444
4	T17 Makaroro	5	120	50	19	80	0.006	99	0.06

Comment 1: A potential problem here is that while there are some differences between sub catchments the numbers are pretty similar and the council could just say that it had done this but present it in a more simple manner. A bigger concern is that in the council version tributary... [1]

Comment 2: Does this apply to all flowing waters, regardless of size?

Comment 3: Essentially some a proportion will support them being used as fisheries targets, otherwise there is actually... [2]

Comment 4: Temperature is a difficult one as some of the waterways will naturally be above these proposed limits

Comment 5: These limits are higher than the ones proposed by the council, but see my comment on tributaries above

Comment 6: I think these are pretty similar to the proposed ones, and I would again re-evaluate the sensitivity of... [3]

Comment 7: Question for the council - if they want to reduce the limit to less than... [4]

Comment 8: Suggested limits based on... rates and thickly 2013 approach

Comment 9: Highlight numbers are my suggestions - I think asking for 99 would be a bit of a push as you can't really... [5]

Page 30: [1] Comment []

26/07/2013 09:18:00

A potential problem here is that while there are some differences between sub catchments the numbers are pretty similar and the council could just say that it had done this but presented it in a more simple manner. A bigger concern is that in the council version tributaries have higher or o limits than main stems despite the fact they contribute to main stems and are important for a range of biodiversity values.

Page 30: [2] Comment []

26/07/2013 09:18:00

Essentially same a sproposed but I support them being used as limits/targets, otherwise there is actually no ecosystem health limits.

Page 30: [3] Comment []

26/07/2013 09:18:00

I think these are pretty similar to the proposed ones, and I would again re-iterate the sensitivity of tributaries which have been assigned higher limits in PC6

Page 30: [4] Comment []

26/07/2013 09:18:00

Question for rosemary: if SIN (DIN) = nitrate + ammoniacal, then how can this limit be less than one or other of those?

Page 30: [5] Comment []

29/07/2013 11:21:00

Highlighted numbers are my suggestions - I think asking for 99 would be a bit of a push as you can't really argue these catchments are pristine. However, given that these are limits/targets, and Zones 1-3 actually have high fish values then 95 would be a better target than 90 (as proposed). Note, especially as in the "identifying native fish values" report they miss the fact that in sub-catchment T2 (Zone 2 or 3) dwarf galaxias are also likley to be important.

