

Submission on the Tukituki Catchment Proposal

1. INTRODUCTION

- 1.1 The Environmental Defence Society (“EDS”) welcomes the opportunity to comment on the Tukituki Catchment Proposal (“the Proposal”) which consists of proposed Plan Change 6 to the Hawke’s Bay Regional Resource Management Plan (“PC6”) and resource consent applications and a notice of requirement for the Ruataniwha Water Storage Scheme (“RWSS”).
- 1.2 EDS is a not-for-profit national environmental advocacy group. EDS was established in 1971 with the objective of bringing together the disciplines of law, science and planning in order to advocate for better environmental outcomes in resource management matters. EDS has been active in assessing the effectiveness of the Resource Management Act 1991 (“RMA”) and planning documents in addressing key environmental issues such as landscape protection, coastal management and water quality.
- 1.3 EDS was responsible for initiating the Land and Water Forum and was an active member of the Small Group of the Forum. EDS presented submissions to the Board of Inquiry on the proposed National Policy Statement for Freshwater Management. As such, EDS has a broad interest in the implementation of New Zealand’s evolving freshwater law.

2. PROCEDURAL ISSUE

- 2.1 This proposal includes two parts: PC6 and the RWSS. This is analogous to the concurrent application process provided for under Part 7 Subpart 4 of the RMA, whereby a plan change and resource consent application are lodged together. In that process, section 165ZX of the RMA required that the decision-maker ‘firstly, determine matters in relation to the plan change request’ and ‘secondly, determine matters in relation to the concurrent application, based on its determination of matters in relation to the plan change request’.
- 2.2 The reason for such a requirement is clear. It is important that the integrity of the planning process is maintained and that the decision on the plan change is not clouded by a resource consent application to be determined under it. Similarly, the decision on the resource consent application will be given greater guidance if there is a ‘decisions version plan change’ to consider, rather than a ‘notified version plan change’ (the latter generally being accorded less weight due to its early stage in the decision-making process).
- 2.3 EDS submits that the BOI should consider this procedural issue in advance of a hearing commencing. EDS submits that, on the basis of the above, it would be most appropriate for it to adopt a staged approach and determine PC6 before moving on to considering the RWSS.

3. PLAN CHANGE 6

- 3.1 EDS opposes in part and supports in part PC6.

3.2 EDS seeks that the Board of Inquiry approves PC6 with changes as set out in this submission or similar and consequential relief.

3.3 **National Policy Statement for Freshwater Management:**

(a) PC6 must “give effect to” the National Policy Statement for Freshwater Management 2011 (“NPSFM”): section 67(3)(a) RMA. The “give effect to” relationship has been discussed by the Environment Court in the context of giving effect to a RPS (*Clevedon Cares Inc v Manukau City Council* [2010] NZEnvC 211):

[50] ... the change in the test from “not inconsistent with” to “must give effect to” is significant. The former test allowed a degree of neutrality. A plan change that did not offend the superior planning instrument could be acceptable. The current test requires a positive implementation of the superior instrument...

[51] The phrase “give effect to” is a strong direction. This is understandably so for two reasons: [a] The hierarchy of plans makes it important that objectives and policies at the regional level are given effect to at the district level; and [b] The Regional Policy Statement, having passed through the Resource Management Act process, is deemed to give effect to Part 2 matters.

(b) The NPSFM requires plans to, *inter alia*:

- (i) Establish freshwater objectives for all fresh water bodies¹
- (ii) Set freshwater quality limits and establish methods (including rules) to avoid over-allocation²
- (iii) When water bodies do not meet the freshwater objectives, specify targets and methods to ensure those objectives are met within a defined timeframe³
- (iv) Set environmental flows and/or levels for all fresh water bodies⁴
- (v) Provide for the efficient allocation of fresh water within those limits⁵
- (vi) Ensure no decision will result in future over-allocation⁶
- (vii) Set timeframes and methods by which over-allocation will be phased out⁷
- (viii) Manage freshwater and land use and development in catchments in an integrated and sustainable manner⁸

(c) EDS submits that PC6 fails to “give effect to” the NPSFM. In particular, the limits and flows proposed fail to give effect to the freshwater objectives and the rules fail to ensure that over-allocation will be avoided or phased-out. EDS has indicated throughout its submission where PC6 fails to give effect to the NPSFM.

¹ NPSFM, policies A1 and B1

² NPSFM, policy A1

³ NPSFM, policy A2

⁴ NPSFM, policy B1

⁵ NPSFM, policy B2

⁶ NPSFM, policy B5

⁷ NPSFM, policy B6

⁸ NPSFM, Policy C1

3.4 **Regional Policy Statement**

- (a) Change 5 amends the RPS section of the RMMP. It was notified on 2 October 2012, decisions were issued on 5 June 2013, and a number of appeals have now been lodged. As a result, the Board of Inquiry is required only to *have regard to* Change 5: s 66(2)(a) RMA. Nevertheless, its advanced stage means it should be given due recognition.
- (b) Change 5 identifies ‘primary values and uses’ and ‘secondary values and uses’ for the Tukituki Catchment and requires priority to be given to maintaining and enhancing the primary values and uses and requires decisions to avoid as far as possible significant adverse effects on secondary values and uses (Policy LW2.1). Unfortunately, this does little to resolve tensions between competing values and uses within the Tukituki Catchment as even within the ‘primary values and uses’ there is a wide range of competing values and uses.⁹

3.5 **Water Quality**

Single nutrient management approach

- (a) The Section 32 Report states that the main stems of the Tukituki and Waipawa Rivers are phosphorus limited, the upper catchment is co-limited, and some sub-catchments are nitrogen limited. On the basis of the catchment ‘generally’ being phosphorus limited, it proposes that reducing phosphorus inputs into the catchment is the most effective strategy for reducing the periphyton biomass and achieving the recreation and amenity freshwater objectives.
- (b) EDS does not consider that the supporting document provides sufficient evidence that the Tukituki catchment is phosphorus limited to justify a single nutrient management approach. However, even if greater evidence is provided, EDS considers that a single nutrient management approach is a risky strategy for a number of reasons:
 - (i) The Section 32 Report shows that while phosphorus limitation is predominant, it is not alone – there is co-limitation in some places, in other areas upstream and downstream reaches are limited by different nutrients, and in some areas periphyton is not limited by nutrient concentrations because concentrations of both nutrients are so high;
 - (ii) In-stream ratios of nitrogen to phosphorus can be affected by a number of factors that mean they may not accurately reflect limitation;
 - (iii) The limiting nutrient at a given location can change at daily, seasonal or multiple year timescales,
 - (iv) If proposed controls on the single nutrient are unsuccessful high concentrations of the other nutrient may exacerbate the adverse effects,

⁹ They include: domestic and stock drinking needs, industrial and commercial water supply, native fish and trout habitat, high natural character values, urban water supply, water supply for key social infrastructure facilities, and water use for land-based primary production.

- (v) The Section 32 Report recognises that large scale increases in nitrogen may eventuate as a result of a major irrigation scheme - which PC6 enables,
 - (vi) There is uncertainty about how cyanobacteria (which form toxic cyanobacterial mats) respond to differing nutrient loads and nutrient ratios.
- (c) The consensus amongst leading New Zealand experts on this topic is that managing a single nutrient is risky and managing both nutrients is generally the most appropriate strategy.
 - (d) EDS submits that, on the basis of the above, the single nutrient management approach is inappropriate and PC6 should put in place limits for management of both nutrients.

Water Management Zones

- (e) EDS submits that the spatial resolution of the water management zones proposed in PC 6 are too coarse for effective management of water quality through specific limits and values. The limits set out below are based on a sub-catchment geographical management framework as recommended by the Land and Water Forum.

Nitrogen

- (f) EDS is concerned that, on the basis of the single nutrient management approach, nitrogen limits have been set on the basis of chronic toxicity levels.
- (g) Permitting contamination up to the toxicity threshold is likely to result in significant deterioration of water quality in the catchment and the region generally, along with potential adverse effects on life supporting capacity, ecosystem processes, in-stream values and the estuary and coastal ecosystems downstream. This fails to give effect to Objectives A1 and A1 and Policy A1 of the NPSFM.
- (h) EDS submits that the nitrogen limits must be lowered to avoid significant adverse effects of nitrogen on the life-supporting capacity and amenity of freshwater.
- (i) As nitrogen limits have been set at such a high level, PC6 suggests that the catchment is not nearing over-allocation and therefore puts in place a permitted activity rule.
- (j) EDS is concerned that PC6 fails to provide an allocation mechanism that will ensure appropriate limits are achieved. Management of cumulative effects cannot be achieved until an effective mechanism is in place for allocation of the resource, which makes it clear what the responsibility is at the level of each property owner.
- (k) PC6 provides for the primary industry to set 'industry good practice nitrogen leaching rates and nitrogen conversion efficiencies' and farms will be required to achieve these by 1 July 2020 (Policy TT4). However, there is no requirement for the nitrogen leaching limits to be set at a level which will ensure the nitrogen limits are met. EDS submits that amendments are required to provide for the setting of leaching rates through a collaborative process with the aim of determining rates that will achieve the limits (amended as requested above to avoid adverse effects on freshwater values) and avoid over-allocation as required by the NPSFM.
- (l) EDS is also concerned that PC6 allows "minor" increases in nitrogen discharges - up to 10% or 5 kg N/ha/year (whichever is the least). Where a catchment is over-allocated this will allow further over-allocation and where a catchment is nearing over-allocation this may result in

over-allocation, both inconsistent with the NPSFM. Furthermore, PC6 appears to allow continual “minor” increases which would cumulatively, after only a short time, be substantial. This is inconsistent with Policy C1 NPSFM which requires cumulative effects to be managed.

Phosphorus

- (m) As set out in paragraph 3.4(j) above, an effective allocation mechanism is required to give effect to limits. PC6 puts in place a requirement for Phosphorus Management Plans (PMPs) to be prepared for properties located in over-allocated catchments. It also requires any application for a resource consent to demonstrate that limits will not be exceeded, or where they are already exceeded, DRP concentrations will not be increased (Policy TT5). However, under the rules the use of production land only requires consent in limited situations such as where a PMP is not prepared in one of the listed catchments. As a result, in the over-allocated catchments if a PMP is prepared there is no requirement to demonstrate that phosphorus discharges will not result in over-allocation.
- (n) EDS submits that this is not an effective allocation mechanism and is likely to result in over-allocation contrary to the NPSFM. In order to give effect to the NPSFM PC6 must put in place allocation limits for phosphorus and an effective rule framework to support this.

Alternative Water Quality Limits

- (o) EDS submits that PC6 should set out the freshwater values of the Tukituki Catchment and the water quality limits should be amended as set out above and other amendments as required to safeguard those values.

Stock Exclusion

- (p) PC6 only requires stock exclusion from land with a slope of up to 15 degrees. It appears from the Section 32 Report that this threshold was not determined by reference to the environmental effects of stock access in various environments, but by reference to practicality only. Schedule XX shows that around 50% of the catchment has a slope of over 15 degrees.
- (q) PC6 also only requires stock exclusion from steeper properties where the stocking rate is more than 18 stock units per hectare. The Section 32 Report states that most farms in the region are running around 8 to 9 stock units per hectare. Therefore this threshold means that, practically, very little stock exclusion will be required.
- (r) EDS submits that these stock exclusion requirements are insufficient and will not result in the environmental improvements required and requests more stringent stock exclusion requirements based on likelihood of environmental effects.
- (s) In addition, PC6 fails to provide for other effective mechanisms for reducing phosphorus leaching such as deferred irrigation of effluent, pond lining, and on/off grazing. EDS requests amendments to provide for other effective mechanisms.

Set Backs

- (t) PC6 does not put in place any requirements for setbacks to create a riparian strip (whether arable or pastoral farming is undertaken). Riparian strips are a well-recognised management technique and should be provided for in PC6.

- (u) The Section 32 Report states that this has not been included because it is 'difficult' and 'other initiatives' would be utilised instead. This means that where stock exclusion does occur there may be no setback applied and disturbed soil may be washed directly into stream in rainfall events.
- (v) In *Day v Manawatu-Wanganui Regional Council* [2012] NZEnvC 182 the Environment Court accepted the value of riparian setbacks and the reasons for variable setbacks dependant on slope. It determined that a 5 m setback was generally appropriate, with a 10 m setback for sites of significance and where the slope was greater than 20°. ¹⁰
- (w) EDS submits that a minimum set back requirement should be specified in PC6 as a condition of controlled activity status for use of production land and that this should be graduated based on slope. EDS suggests a minimum setback of 6 m on land up to 7°, a minimum setback of 10 m on land 8 – 10°, and a minimum setback of 20 m on steeper land and adjacent to sites of significance (e.g. wetlands and outstanding freshwater bodies).

Community Water Storage Schemes

- (x) EDS is concerned that PC6 enables Community Irrigation Schemes given the likely impact of these on water quality. Community Irrigation Schemes will provide irrigation on a scale not previously seen in this area and drive substantial land use intensification. Land use intensification is likely to lead to increases in discharges of contaminants, even if significant mitigation is undertaken. This makes it even more important that the regulatory framework for water quality is robust and will ensure that Community Irrigation Schemes will not cause over-allocation.

Failure to provide for Lake Hatuma

- (y) PC6 fails to put in place water quality limits for Lake Hatuma which is a significant wetland within the Tukituki catchment. EDS submits that this fails to give effect to the NPSFM and PC6 should be amended to put in place limits for Lake Hatuma.

3.6 Water Quantity

Community Water Storage Schemes

- (a) PC6 enables community irrigation schemes by providing for an application to be made as a discretionary activity, whether or not the scheme complies with minimum flows and allocation limits. This fails to give effect to Policy B5 NPSFM which requires every regional council to ensure that no decision will likely result in future over-allocation.
- (b) The Section 32 Report justifies this on the basis that community irrigation schemes can provide potential benefits such as a reliable water supply, efficient use of a scarce resource through harvesting of winter flows, and providing supplementary flows at times of low flow and flushing flows. However, the NPSFM does not provide for exceptions to the requirement to ensure no decision will result in future over-allocation. This recognises the costs of over-allocation. There is also a need to ensure plan integrity.

Other water takes

¹⁰ At [4-49]

- (c) PC6 provides for a non-complying activity status for new surface and groundwater takes that fall outside the allocation limits (except for community irrigation schemes). EDS supports the intention not to allow further abstraction as this will prevent further insecurity of supply and adverse environmental effects. However, EDS considers PC6, through its use of non-complying activity status, fails to give effect to the NPSFM, particularly Policy B5. The only mechanism through which a regional council can *ensure no decision* will result in over-allocation is through use of a prohibited activity status.

3.7 *Economics*

- (a) It is often assumed that environmental requirements will reduce the profitability of land uses. While mitigation techniques usually require investment to implement, there is evidence that if well-managed improvements in the management of environmental effects should not adversely affect, and may improve, profitability.

3.8 *Detailed Comments*

Section	Submission	Relief sought
<i>Objectives</i>		
TT1	<i>Support in part</i> Paragraph (a) should refer to ‘safeguarding’ habitat and health consistent with NPSFM. Paragraph (b) should also refer to food gathering. The objective fails to link these values to the setting of limits.	Amend (a) to refer to “safeguard the habitat and health...” Add “and food gathering” to (b). Amend to provide that these values will be achieved through setting and managing to limits.
TT2	<i>Support in part</i> This objective implements Objective A2(c) NPSFM. EDS suggests that it should provide that where Objective TT1 is achieved it should be maintained, and where it is not it should be improved in order to achieve it.	Amend to provide for maintenance of freshwater values where TT1 is achieved.
TT3	<i>Oppose</i> This allows degradation of groundwater quality, and potentially degradation to an extent it is unsuitable for drinking purposes, is inconsistent with Objective A1 NPSFM which requires life-supporting capacity to be safeguarded and Objective A2 NPSFM which requires water quality to be maintained or improved.	Amend to ensure consistency with NPSFM.
TT4	<i>Oppose in part</i> In order to be consistent with Policy B5 NPSFM this objective should provide for the avoidance of any allocation to any abstractor where limits would be exceeded.	Amend to provide for avoidance of over-allocation in all circumstances.

TT5	<i>Oppose in part</i> In order to be consistent with Policy B5 NPSFM this objective should be subject to TT4 (amended in accordance with the above submission).	Amend to ensure that Community Irrigation Schemes are enabled only where they avoid over-allocation.
<i>Water Quality Policies</i>		
TT1.1	<i>Oppose in part</i> Limits based on toxicity do not give effect to the NPSFM. See comments above on single nutrient management approach.	Amend (1)(a) to provide for management of N.
TT1.2	<i>Support</i> Consistent with Objective A2 NPSFM.	Retain.
TT1.3	<i>Support in part</i> This does not provide for targets where limits are not met as required by Policy A2 NPSFM. Unlike TT1.1 this does not direct the standard at which these will be set. These limits/indicators need to be set at levels which safeguard life-supporting capacity. The 'indicators' are appropriate to be used as limits.	Amend to provide for targets. Amend to state that limits/indicators will be set at current levels where life-supporting capacity is currently safeguarded or set at a level which will require improvement to a level that safeguards life-supporting capacity where it is not. Amend 'indicators' to 'limits'.
TT1.4	<i>Support</i> Requires compliance with NES.	Retain.
TT2.1	<i>Oppose in part</i> Requires management to limits consistent with NPSFM, however this is 'subject to OBJ TT3'. NPSFM does not provide for exceptions to limits. Limits set does not recognise link between groundwater and surface water quality. Requires compliance with NES.	Delete 'Subject to OBJ TT3,'. Amend limits to provide for connectivity.
TT3.1	<i>Oppose in part</i> Limits based on acute toxicity do not give effect to the NPSFM. Limits do not give effect to s 70 RMA. As well as the limits set out in this policy, this policy needs to ensure point source discharges do not cause the limits in the tables to be breached. The policy does not provide for a limit on temperature change from point source discharges which can have adverse effects.	Amend limits to ensure compliance with NPSFM and s 70 RMA. Add limit relating to temperature change. Amend policy to make it clear point source discharges must not cause the limits set out in the tables to be exceeded.

<p>TT3.2</p>	<p><i>Oppose in part</i> It is unclear how (a) will be implemented and makes the policy uncertain. The NPSFM requires limits to be achieved to avoid significant adverse effects, it is inappropriate for (b) to provide for exceptions.</p>	<p>Delete.</p>
<p>TT4.1</p>	<p><i>Oppose</i> Limits based on toxicity do not give effect to the NPSFM. See comments on single nutrient management approach above.</p> <p>‘Industry good practice’ (and ‘nitrogen conversion efficiencies’) is not defined and therefore it is not possible to analyse their effectiveness or efficiency.</p> <p>The statement that the catchment is ‘generally in a state of under-allocation’ is incorrect.</p> <p>Paragraph (c)(i) provides for the primary industry sector to develop industry good practice nitrogen leaching rates and nitrogen conversion efficiencies. The development of these figures should either be carried out through a collaborative process or through a science panel, not by the industry sector alone. Furthermore, this policy needs to clearly direct that these rates need to be set at a level that will achieve the water quality limits, in order for this method to avoid over-allocation in accordance with the NPSFM.</p> <p>The timeframes set out in (i) – (iii) are inappropriate. The information for this is available and this work should be carried out in an expedient manner in order to guide the necessary changes to farming systems.</p> <p>Paragraph (e) and (f) allow for ‘minor increases’ in leaching rates. In over-allocated catchments this will allow further over-allocation and is therefore inconsistent with the NPSFM. In other catchments this may allow over-allocation to occur inconsistent with the NPSFM. This does not represent efficient allocation.</p> <p>It is also unclear whether this policy allows minor increases on an annual basis. This could cumulatively result in significant increases.</p>	<p>Amend limits to provide for management on DIN and put in place targets.</p> <p>Define ‘industry good practices’.</p> <p>Delete (c).</p> <p>Amend paragraph (c)(i) to provide for the development of rates through a collaborative process advised by a science panel.</p> <p>Amend paragraph (c)(i) to direct that the rates must be set at a level which will achieve the water quality limits.</p> <p>Amend the timeframes in (i) to (iii) to ensure leaching rates are set and nutrient budgets are prepared by 1 July 2015.</p> <p>Amend (e) and (f) to ensure all increases are managed through a resource consent process.</p> <p>Amend to ensure all increases are managed through a resource consent process.</p>

	<p>A Farm Environment Management Plan is a useful tool but should not be the only requirement.</p> <p>This policy does not ensure over-allocation will be avoided consistent with Policy A1 NPSFM. There is a needs to be clear direction that resource consents will not be granted where allocations are exceeded.</p>	<p>Amend to provide that resource consents will not be granted for activities that would result in over-allocation.</p>
TT4.2	<p><i>Oppose in part</i></p> <p>MAZLs are a vital tool. This is not difficult and HBRC has already done the main body of the work. They should be determined for both nutrients now and included in the plan change.</p> <p>The first sentence refers to (a) and (b) assisting with ‘monitoring the effectiveness’ however (b) refers to use for assessing resource consent applications.</p>	<p>Amend to provide MAZLs in the plan change (or alternatively to require these to be included by 1 July 2014).</p> <p>Amend to provide for the use of this information to assess resource consent applications. Amend to ensure over-allocation will not result from any decision.</p>
TT5.1	<p><i>Oppose in part</i></p> <p>Paragraphs (a) and (b) seek to ensure point source discharges will not allow or exacerbate over-allocation. Paragraph (a)(i) should be more directive if the targets are to be achieved. It should also require review of resource consents under s 128(1)(b). Paragraph (b) should also apply to increases in existing discharges.</p> <p>Paragraph (c) purports to ensure use of production land will not allow or exacerbate over-allocation. However, it only applies to ‘any application for resource consent for the use of production land’ and there is no part of the policy setting out when resource consent will be required. It also does not provide for phase out of over-allocation.</p> <p>Paragraph (d) only applies to listed catchments. It should also apply to over-allocated catchments generally to ensure it does not become inaccurate or incomplete over time.</p> <p>Paragraphs (d)(i) and (ii) put in place requirements for stock exclusion. This is an effective and expected management technique.</p>	<p>Amend (a)(i) to delete ‘seek to’ and require review of resource consents under s 128(1)(b). Amend (b) to apply it to increases in existing discharges.</p> <p>Add a new paragraph that requires resource consent for land use in over-allocated catchment and for increases in discharges in catchments which are not over-allocated.</p> <p>Amend (c)(ii) to require a reduction in existing DRP concentrations.</p> <p>Amend (d) to refer to over-allocated catchments generally as well as the specific list.</p> <p>Amend (d)(i) and (ii) to increase stock exclusion requirements to ensure effectiveness.</p>

	<p>EDS considers the limitations (slope and stocking rate) mean that the policy will not be effective.</p> <p>Paragraph (d)(iii) requires stock races crossing freshwater to be bridged or culverted. EDS supports this requirement however it should apply to all stock crossings.</p> <p>Paragraph (d)(vi) requires a Phosphorus Management Plan for certain catchments. This is a useful tool however this method does not ensure over-allocation will be phased out in these catchments. EDS considers that in over-allocated catchments (as in Policy TT4.1) land use should require resource consent (and in under-allocated catchments increases in P discharges) with a PMP as part of this process.</p> <p>In addition, EDS considers that a Contaminant Management Plan would be a more effective tool as this would allow holistic management of all contaminants and ensure all limits are considered.</p> <p>Paragraph (e) puts in place non-regulatory methods which are useful tools however are insufficient to achieve water quality outcomes and give effect to the NPSFM.</p>	<p>Amend (d)(iii) to apply to all stock crossings.</p> <p>As above, add a new paragraph that requires resource consent for land use in over-allocated catchment and for increases in discharges in catchments which are not over-allocated. Require PMPs for all applications.</p> <p>Amend to require a Contaminant Management Plan.</p> <p>Amend to require these matters to be addressed/to guide decision making in all resource consent applications required by this policy.</p>
TT5.2	<p><i>Oppose in part</i> MAZLs are a vital tool. There should be determined for both nutrients now and included in the plan change.</p> <p>The first sentence refers to (a) and (b) assisting with 'monitoring the effectiveness' however this information should also be utilised for assessing resource consent applications.</p> <p>EDS supports the requirement for regular review of these provisions but considers the approach needs to be amended at this time as set out above.</p>	<p>Amend to provide MAZLs in the plan change (or alternatively to require these to be included by 1 July 2014).</p> <p>Amend to provide for the use of this information to assess resource consent applications. Amend to ensure over-allocation will not result from any decision.</p>
TT6.1	<p><i>Oppose in part</i> This policy should 'ensure' these matters rather than only requiring the consent authority to have regard to them. EDS supports the use of Farm Management</p>	<p>Replace 'have regard to' with 'ensure'.</p> <p>Amend to require consent authority to link to above policies and require application to</p>

	Plans as a management tool. However, this policy only requires the consent authority to have regard to a FMP and whether the conditions of consent will ensure that is implemented. It fails to require the consent authority to have regard to whether the land use will cause limits to be exceeded (or further exceeded).	demonstrate that the activity will not lead to an exceedance of any limit or where there is an exceedance of any limit the activity will result in a reduction of discharges.
TT6.2	<p><i>Oppose in part</i></p> <p>Paragraph (a) does not provide for situations where there is already over-allocation. In such situations there is a need to require a reduction in leaching in order to phase-out over-allocation. Paragraph (d)(i) only provides for maintenance of over-allocation – it needs to require a reduction in leaching in order to phase-out over-allocation.</p> <p>Paragraphs (a), (c) and (f) provide for nitrogen and phosphorus limits only. There is a need to ensure all limits are complied with.</p>	<p>Amend (a) and (b) to provide for phase-out of over-allocation.</p> <p>Add a new paragraph analogous to (c) for other limits set in the table e.g. <i>E.Coli</i>.</p>
TT6.3	<p><i>Support in part</i></p> <p>We support the use of common expiry dates which ensures environmental effects of water take and land use can be considered together. However the 35 year maximum is too long and does not adequately provide for reassessment in face of changing circumstances and the uncertainty surround the outcome of the proposed regime.</p> <p>EDS suggests that this policy should also provide for use of common expiry dates within sub-catchments to provide for integrated management.</p> <p>EDS suggests that it is necessary to add a policy providing for review of consents in accordance with s 128 RMA.</p>	<p>Amend duration to provide for a maximum duration of 20 years.</p> <p>Amend the policy to provide for common expiry dates throughout the sub-catchment.</p> <p>Add a new policy to require resource consents to indicate intention to use s 128 RMA.</p>
Table 5.9.1A	<p><i>Oppose</i></p> <p>The limits and targets do not appropriately provide for achieving freshwater objectives, in particular the need to safeguard the life supporting capacity of freshwater as required by the NPSFM.</p>	Amend limits to safeguard the life supporting capacity of freshwater. In particular, amend to provide limits for cyanobacteria cover and pH range.
Table 5.9.1B	<p><i>Oppose</i></p> <p>The limits and targets do not appropriately</p>	Amend limits to safeguard the life supporting capacity of freshwater.

	provide for achieving freshwater objectives, in particular the need to safeguard the life supporting capacity of freshwater as required by the NPSFM.	In particular, amend to include limits for DIN, clarity, MCI, temperature change, and DO.
Table 5.9.2	<i>Oppose</i> The limits and targets do not appropriately provide for the interconnectivity between groundwater and surface water and the impact on freshwater objectives.	Amend limits to recognises the interconnectivity and provide limits that will assist in achieving the surface freshwater objectives.
<i>Water Quantity Policies</i>		
TT7.1	<i>Oppose in part</i> All water takes must be allocated within the minimum flow limits in order to give effect to the NPSFM (including permitted takes and takes for community irrigation schemes). Paragraph (b) provides for a phase-out of over-allocation consistent with the NPSFM however EDS suggests that the policy should be more explicit and foreshadow the use of s 128 to review existing resource consents. Paragraph (e) provides for takes of non-Scheme members to be calculated using a river flow which would have occurred in the absence of the scheme. However, this fails to account for the water taken from the river by the Scheme.	Amend (a) so that the minimum flow limits apply to all takes. Amend (b) to foreshadow the use of s 128. Amend (e) to provide for takes of non-Scheme members to be calculated using a river flow which accounts for the takes by the Scheme (but not its inputs to be used by Scheme members only).
TT8.1	<i>Oppose in part</i> EDS supports recognition of the inability to achieve security of supply currently given existing abstraction. EDS supports recognition of interconnectivity. EDS opposes the setting of allocation limits on the basis of existing consent abstractions. Allocation limits must give effect to minimum flows in order to avoid over-allocation as required by Policy B5 NPSFM. This policy recognises in (a) that existing abstraction cannot achieve the minimum flows.	Retain (a). Retain (b). Amend to provide for allocation limits to be set on the basis of achieving minimum flows.
Table 5.9.3	<i>Oppose</i> Minimum flows should not be set below levels necessary to provide for 90% habitat retention for critical species at minimum flow. This must also be linked to the critical value species in the sub-catchment, not the least flow demanding (i.e. longfin eels). There is also no connection between the quantity and quality approaches	Amend to provide for minimum flows which provide for 90% habitat retention (in respect of the critical value species) at minimum flow and provide targets and timeframes in sub-catchments where transition time is required.

	with regard to in-stream values.	Amend to recognise the connection between quantity and quality.
Table 5.9.4	<p><i>Oppose</i></p> <p>These allocation limits are too high to achieve the freshwater objectives and give effect to the NPSFM.</p> <p>These allocation limits do not include permitted takes or community irrigation takes. This is inappropriate and will exacerbate the above problem.</p>	<p>Amend table to:</p> <ul style="list-style-type: none"> - Provide an allowance for permitted takes - Provide allocation limits for all consented takes (including community irrigation schemes) - Ensure the above will give effect to the minimum flows recognising the connections between groundwater and surface water
Table 5.9.5	<p><i>Oppose</i></p> <p>These allocation limits do not adequately recognise the interconnectivity between groundwater and surface water, do not allow for permitted takes, and do not allow for community irrigation scheme takes. As a result they are likely to result in over-allocation inconsistent with the NPSFM.</p>	<p>Amend table to:</p> <ul style="list-style-type: none"> - Provide an allowance for permitted takes - Provide allocation limits for all consented takes (including community irrigation schemes) - Ensure the above will give effect to the minimum flows recognising the connections between groundwater and surface water
Footnote 29	<p><i>Oppose</i></p> <p>Allocation limits must apply to all takes, including allowing for the volume of permitted takes.</p>	Amend the footnote to ensure the allocation limits apply to all takes (permitted and consented) including takes for Community Irrigation Schemes.
TT9.1	<p><i>Oppose</i></p> <p>Paragraph (a) allows the renewal of existing take consents. However, it fails to provide for phase-out of over-allocation.</p> <p>Paragraph (b) prevents reallocation of water that is freed up. This also provides for phase-out of over-allocation.</p> <p>Paragraph (d) excludes permitted takes from allocation limits. This is inappropriate and will allow over-allocation to occur inconsistent with</p>	<p>Amend (a) to require reductions in takes where required to phase out over-allocation, including through improvements in efficiency.</p> <p>Amend (b) to indicate that this is also for the purpose of phasing out over-allocation.</p> <p>Delete (d).</p>

	<p>the NPSFM (especially as the s 32 report foresees significant increases in requirements if a community irrigation scheme progresses as is proposed)</p> <p>Paragraph (e) provides for reviews in 2020 and 2025. To this extent it is supported. However the purpose of the review is to increase allocation limits in the event of a Community Irrigation Scheme progressing. This would allow over-allocation inconsistent with the NPSFM as the current allocations do not give effect to the minimum flows.</p> <p>Paragraph (f) excludes Community Irrigation Schemes from restrictions where rivers are at or below minimum flow. This is inappropriate and allows for over-allocation inconsistent with the NPSFM.</p> <p>EDS supports (iii) but considers a formula should be supplied in the plan for reductions in takes, rather than relying on consent conditions which may vary.</p> <p>EDS opposes (iv) which allows takes for frost protection and filing agricultural spray takes to continue without restriction, this is inconsistent with public and animal welfare takes in (iii) being required to reduce their daily take.</p>	<p>Amend (e) to provide for reviews to amend the allocation limits as required to ensure the minimum flows are achieved.</p> <p>Amend (f) to remove exclusion for takes for Community Irrigation Schemes.</p> <p>Amend (iii) to provide a formula for reductions in take.</p> <p>Amend (f)(iv) to require those takes to cease.</p>
TT10.1	<p><i>Oppose in part</i></p> <p>EDS is concerned that this policy may not provide adequately for flow variability that is necessary for healthy river system functioning. The policy must not provide an exception for community irrigation schemes as irrespective of the type of take it is necessary to provide for flow variability.</p>	<p>Amend the policy to ensure the limits are set in a manner and level that provides for flow variability.</p>
Table 5.9.6	<p><i>Oppose in part</i></p> <p>The high flow allocation and minimum flow limits do not provide for the necessary flow variability to provide for healthy river system functioning.</p>	<p>Amend the table to provide limits which provide for natural flow variability.</p>
TT11.1	<p><i>Support</i></p> <p>This policy recognises the interconnected nature of groundwater and surface water systems.</p>	<p>Retain.</p>

Table 5.9.7	<p><i>Oppose in part</i></p> <p>EDS considers that the definition of ‘medium’ and ‘high’ are too high to adequately recognise the interconnected nature of groundwater and surface water and to avoid over-allocation in accordance with the NPSFM.</p>	<p>Amend to reduce the depletion effect required to qualify as ‘high’ or ‘medium’.</p>
TT12.1	<p><i>Oppose in part</i></p> <p>Transfer of water permits should be dealt with through a resource consent process that allows consideration of efficiency of water use, potential effects at the new location, and requirements for monitoring. Transfer of water permits should be used as an opportunity to require increases in efficiency and surrender of water. This can be encouraged through favourable activity statuses.</p> <p>EDS supports temporary transfers in principle if they are within same catchment, minimum flows and allocation limits are met, and there are no significant localised effects.</p>	<p>Amend policy to require resource consent to be obtained for a transfer of a water permit in order to provide for the matters listed and to enable transfer where there will be surrender and/or efficiency improvements by use of favourable activity status.</p> <p>Amend policy to ensure the matters set out in the reasons are managed.</p>
TT13.1	<p><i>Oppose in part</i></p> <p>Community irrigation schemes should not be ‘enabled’ on the basis of the matters listed in this policy, particularly given they are excluded from many other policies.</p> <p>Paragraph (a) refers to the quality limits but it does not require the applicant to demonstrate how the minimum flows will be met.</p>	<p>Replace ‘enable’ with ‘when considering applications for... have regard to whether the application:’.</p> <p>Amend to require the applicant to demonstrate compliance with minimum flows.</p>
TT14.1	<p><i>Oppose in part</i></p> <p>This policy fails to give effect to the NPSFM requirement to avoid over-allocation.</p> <p>Paragraph (a) places no restrictions on s 14(3)(b) RMA takes. However, that section refers to <i>reasonable</i> needs and requires that the taking or use does not have an adverse effect on the environment. Therefore, while permitted activity status may be appropriate this should be subject to standards and these takes should also be accounted for when allocating other takes.</p> <p>Paragraph (c) provides discretionary activity</p>	<p>Amend the policy to provide standards requiring such takes to be reasonable, use to be efficient, and adverse effects to be avoided, remedied or mitigated.</p> <p>Account for permitted takes when allocating other takes.</p> <p>Add a policy providing for phase-</p>

	<p>status for renewal of consents that meet allocation limits. This is supported (subject to submissions on the limits themselves) as it allows for efficiency improvements and surrender to be required in order to facilitate the phase out of over-allocation. However, EDS considers a policy should set out how this phase-out will be achieved through these mechanisms.</p> <p>Paragraph (d) is inconsistent with the NPSFM as it provides a discretionary activity status for Community Irrigation Schemes, even where they will result in over-allocation. Any application that will result in or exacerbate over-allocation should be prohibited.</p> <p>Paragraph (f) makes new consent applications non-complying. The catchment is predominantly over-allocated and NPSFM requires over-allocation to be avoided and phased-out. Therefore an application that will result in or exacerbate over-allocation should be prohibited.</p> <p>Paragraph (g) requires limits on takes to be included in consent conditions. Given the uncertainty surrounding the proposed scheme EDS considers that this should also provide for consent conditions to include review clauses.</p>	<p>out mechanisms for over-allocation.</p> <p>Amend (d) to require such applications to demonstrate that they will not result in over-allocation and add a prohibited activity for applications that fail to demonstrate that they will not result in over-allocation.</p> <p>As above, add a prohibited activity for applications that fail to demonstrate that they will not result in over-allocation.</p> <p>Amend to require consent conditions to include a review clause.</p>
TT15.1	<p><i>Support in part</i></p> <p>EDS considers that waters meters and some reporting should be required for all water takes. Without accurate measurement and recording of water takes, it is not possible to make good decisions about management.</p>	<p>Add a requirement for water meters and minimum reporting for water takes not currently covered by the policy.</p>
<i>Rules - Land use and water quality</i>		
TT1	<p><i>Oppose</i></p> <p>It is inappropriate to rely on permitted activity status where it is necessary to rely on modelling to determine compliance with standards. A controlled activity status would allow oversight of the standards while providing certainty for land owners.</p> <p>Paragraph (a) allows 'minor' increases in leaching. This will allow over-allocation</p>	<p>Delete this rule and replace with a controlled activity rule.</p> <p>Amend (a) so that this rule only applies where there is no increase</p>

	<p>inconsistent with the NPSFM, particularly as it appears to allow increases year-after-year.</p> <p>Paragraph (c) requires a Nutrient Budget to be prepared by 1 July 2018. EDS considers this time frame is too long as the information will be available well in advance of this time.</p> <p>Paragraph (e) required a PMP to be prepared in certain catchments. This requires a catch-all to allow others to be added if they become over-allocated.</p> <p>Paragraphs (f) and (g) put in place requirements for stock exclusion. However the restrictions on these requirements mean that these requirements are unlikely to be effective.</p> <p>Paragraph (h) allows for grazing of a riparian margin and paragraph (i) allows stream crossing points to be utilised. These exceptions will further limit the effectiveness of the stock exclusion requirements and are inappropriate.</p> <p>This rule does not provide for management of other contaminants such as <i>E.Coli</i> and sediment. EDS considers that rather than this rule should require preparation of a Farm Management Plan (including nutrient budget, phosphorus management plan, stock exclusion, use of bridges/culverts) that sets out the management practices that will be applied to manage all discharges.</p>	<p>in nitrogen or phosphorus leaching.</p> <p>Amend (c) to require a Nutrient Budget to be prepared by 1 July 2015.</p> <p>Amend (e) to include a catch-all for newly over-allocated catchments.</p> <p>Amend to require effective stock exclusion requirements as set out above.</p> <p>Delete (h) and (i). Amend (j) to require all stream crossing points utilised more than x times per year to be bridged or culverted.</p> <p>Amend rule to provide for preparation of a farm management plan, including the above</p>
TT2	<p><i>Oppose in part</i></p> <p>Restricted discretionary status is inappropriate for activities which may result in over-allocation which the NPSFM requires to be avoided.</p>	<p>Add a prohibited activity rule for activities which may result in over-allocation.</p>
<i>Rules - Takes</i>		
TT3	<p><i>Oppose</i></p> <p>The Section 32 report recognises ‘there are many existing spraytank filling operations that exceed the permitted activity rule... but are not authorised by any of the existing take consents’. EDS considers that it is inappropriate to ‘reward’ breaches of the operative plan by allowing the activity to continue. In any event, permitted activity status for takes for agricultural spray tanks is inappropriate. There</p>	<p>Delete.</p>

	<p>is no justification for such takes being treated in a different manner to other agricultural takes. There is no public or animal health justification for such a rule, compared to for example dairy shed wash down. It is also inappropriate to permit such takes without any conditions to deal with adverse effects or any consideration of the allocation limits.</p>	
TT4	<p><i>Oppose in part</i> EDS is opposed to the exclusion of Community Irrigation Schemes from these rules. Exempting such schemes from minimum flows and allocation limits is contrary to the NPSFM.</p> <p>EDS is opposed to (d) – (f) to the extent that it is opposed to the limits set in those tables as set out above.</p>	<p>Amend to include Community Irrigation Schemes within the application of this rule.</p> <p>Amend limits as set out above.</p>
TT5	<p><i>Oppose in part</i> EDS is opposed to the exclusion of Community Irrigation Schemes from these rules. Exempting such schemes from minimum flows and allocation limits is contrary to the NPSFM.</p> <p>Any activity which does not comply with limits should be prohibited in order to avoid over-allocation as required by the NPSFM. This also provides certainty for all parties.</p>	<p>Amend to include Community Irrigation Schemes within the application of this rule.</p> <p>Amend to prohibited activity status.</p>
<i>Rules – Amendments to existing rules</i>		
Rule 53	<p><i>Oppose</i> This rule (which permits minor takes and uses of ground water) should not apply to the Tukituki catchment once the specific provisions are amended and in place.</p>	Amend to exclude Tukituki river catchment.
Rule 54	<p><i>Oppose in part</i> This rule (which permits minor takes and uses of ground water) should not apply to existing takes once this PC6 comes into effect. Instead, a transition rules should be put in place.</p>	Amend to provide for transition of existing 'minor' takes to PC6.
Rule 55	<p><i>Oppose</i> This rule does not require Community Irrigation Schemes to be subject to minimum flows and allocation limits and other controls set out in the Tukituki specific provisions. These should be managed under the Tukituki specific provisions, and where limits cannot be met the activity status should be prohibited.</p>	Delete added text.

Rule 61	<i>Oppose in part</i> If the transfer relates to an over-allocated catchment the transfer should be subject to a requirement to improve efficiency and surrender of a certain percentage of the take.	Amend to require improvements in efficiency and surrender of a portion of the take.
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4. RUATANIWHA WATER STORAGE SCHEME

4.1 EDS opposes the Ruataniwha Water Storage Scheme proposal in its current form.

4.2 EDS seeks that the Board of Inquiry rejects the resource consent applications and notice of requirement.

4.3 **General Comments**

(a) EDS considers that water storage has considerable potential to address security of supply for water users while safeguarding the life-supporting capacity of freshwater. However, water storage also has potential for significant adverse environmental effects and therefore proposals need to be rigorously assessed. In particular, proposals must ensure that the dam footprint avoids highly sensitive areas, that the environmental effects of the dam footprint are adequately mitigated, and that robust measures are in place to ensure increased water use does not result in deteriorating water quality.

(b) EDS is unable to support the RWSS proposal at this time both because it is being progressed under PC6 which, EDS submits, requires a number of amendments, and also because of issues with the RWSS proposal itself.

4.4 **Weight to be given to PC6**

(a) Section 104(1)(b)(vi) requires the Board of Inquiry to have regard to a plan or proposed plan. This means both the operative RRMP and proposed PC6 must be considered. In general, the weight to be accorded to a proposed plan depends on how far it has progressed through the plan making process: *Keystone Watch Group v Auckland City Council (A7/2001)*.

(b) However, EDS has submitted that a staged approach should be taken with PC6 considered in advance of the RWSS. If this occurs the Board of Inquiry will have decisions version of PC6 to consider which could be accorded greater weight than the notified version of PC6.

(c) If a staged approach is not adopted, EDS considers that the notified version of PC6 should not be accorded significant weight. This is because, despite it representing a significant shift in management approach to give effect to the NPSFM, there are significant concerns that it fails to give effect to the RMA and NPSFM and, if only the notified version of PC6 is before the Board of Inquiry, this has not yet been tested through a submission, hearing and decisions process.

4.5 *Effects of the dam footprint on terrestrial ecology*¹¹

- (a) The dam footprint (covering an area of 450.18 ha) will result in the destruction of 242.37 ha of indigenous vegetation or habitats, including 182 hectares of significant indigenous vegetation or habitats. There are a number of threatened or at risk species located in the dam footprint: red mistletoe, New Zealand bush falcon, banded dotterel, pied stilt, New Zealand pipit, black shag, and North Island fernbird. The ecological surveys indicate that the dam footprint is an important habitat for long tailed bats which are classified as nationally vulnerable to extinction.
- (b) It is clear that the dam footprint will have significant adverse effects on a large area of significant indigenous vegetation or habitat.
- (c) Section 6(c) of the RMA requires the Board of Inquiry to recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. In addition, the Board of Inquiry should have regard to the functions of regional councils and district councils (whose decision making shoes they have stepped into) which require them to maintain indigenous biodiversity: ss 30(1)(ga) and 31(1)(b)(iii) RMA.
- (d) The proposed National Policy Statement on Indigenous Biodiversity (“pNPSIB”) is not operative and as a result has no legal effect under s104(1)(b)(iii) RMA. However, EDS submits that it is a matter that is relevant and reasonably necessary to determine the application under s 104(1)(c) RMA and therefore a matter the Board of Inquiry should have regard to.
- (e) Policy 5 of the pNPSIB requires activities to be managed to ensure “no net loss”¹² of biodiversity in areas of significant indigenous vegetation or habitats. It requires a mitigation hierarchy to be applied with a preference for avoiding adverse effects.
- (f) Schedule 2 of the pNPSIB provides further guidance on biodiversity offsets. Clause 1 states that a biodiversity offset should result in no net loss *and preferably a net gain of biodiversity*. It requires the anticipated losses and gains to be calculated to determine “no net loss” and preferably “net gain”. Clause 3 states that the offset design should demonstrate that it only addresses the residual effects of the activity, namely those left after all the appropriate avoidance, minimisation and rehabilitation actions have been taken.
- (g) The applicant proposes three mitigation and offsetting packages:
 - (i) *The Ruataniwha Reservoir Restoration Buffer and Catchment Enhancement Zone* would recreate 46 ha of riparian margin and restore and enhance 100 ha of marginal farmland and existing forest, scrub, treeland shrubland and wetland remnants.
 - (ii) *The Ruataniwha Riparian Enhancement Zone* would involve the control of willow, lupins and other braided river weeds and potentially fencing and riparian restoration to enhance wading bird habitat and assist with fencing, replanting

¹¹ Figures from the AEE or Kessels & Associates report

¹² “No net loss” is defined as “no overall reduction in a. the diversity of (or within) species; b. species’ population sizes (taking into account natural fluctuation), and long-term viability; c. areas occupied and natural range inhabited by species; d. range and ecological health and functioning of assemblages of species, community types and ecosystems.”

and legal protecting existing wetlands, bush and scrub within the buffer enhancement zone.

- (iii) *Ruataniwha Threatened Species Habitat Enhancement* would provide assistance for research, advocacy and habitat protection/enhancement for bats and their habitats throughout Hawkes Bay, predator trapping to enhance the biodiversity values of nearby indigenous forest areas, and a trap and transfer programme focusing on native fish.
- (h) EDS has a number of concerns with the proposed mitigation and offsetting packages:
- (i) The application does not demonstrate that the mitigation hierarchy has been applied. It is inevitable that the RWSS will result in significant adverse effects, many of which will be unable to be avoided or remedied, thus requiring a robust mitigation and offsetting package. However, we are concerned that mechanisms for avoiding and remedying adverse effects on biodiversity have not clearly been explored.
 - (ii) The application does not demonstrate that no net loss *or preferably net gain* will be achieved. The definition of no net loss includes: no reduction in diversity, no reduction in population sizes, no reduction in range, and no reduction in ecological health. EDS is concerned that the mitigation and offset packages proposed do not meet this standard. As an example, the dam will result in the destruction of 242.37 ha of indigenous vegetation or habitats, yet the mitigation and offset packages will only recreate 46 ha of indigenous vegetation or habitats, the other mechanisms involve restoration or enhancement of existing indigenous vegetation or habitats. This does not address the loss of area occupied by indigenous species.
 - (iii) The mitigation and offsetting packages rely on the agreement of third parties and the use of land that is not owned or required by the applicant. As such there is uncertainty about the ability of the applicant to implement the packages.
 - (iv) It is essential that implementation is measured by successful delivery of the offsets, not by expenditure of the budgeted funds. There is an issue surrounding what happens if the funds are exhausted but the offsets have not been fully delivered. EDS considers that conditions should be linked to outcomes to be achieved and not be fixed to projected amounts as these may vary.
- (i) It is inevitable that the outcomes of these measures have a level of uncertainty and may not be as successful as expected. EDS seeks amendments to the mitigation and offset packages to put in place measures which can be reasonably expected to achieve *net gain* in biodiversity.

4.6 ***Effects of the dam on aquatic ecology***¹³

- (a) There are seven migratory native fish species found in the vicinity of the dam. Four of these species have a threat classification of 'declining'. Construction of the dam is planned for the

¹³ Figures from the AEE or Cawthron report

periods of the year that will coincide with reproductive activities for several of these species. This is likely to result in immediate effects of the reproductive success of native fish. Once constructed, the dam will prevent the migration of fish to and from the upper reaches of the river. The species are unlikely to sustain self-supporting populations above the dam and will be lost from the area above the dam without migration.

- (b) EDS supports the imposition of conditions requiring fish passage to be provided for through effective mechanisms as well as mitigation measures to address remaining adverse effects on fish species. However, the efficacy of trap and transfer schemes to provide sustainable native fish populations is not well-documented over the long term. EDS considers that mitigation and offset measures also need to be put in place to address the effects of constructions on aquatic ecology.

4.7 ***Effects of the dam on water quantity***¹⁴

- (a) Water storage has the potential to create environmental benefits through (a) supplementing river flow at times when it would otherwise be very low and (b) increasing the size, duration and/or frequency of flushing flows. These would improve the ecological health and recreational value of the catchment. However, water storage can equally result in adverse environmental effects if not effectively managed.
- (b) As it stands, PC6 excludes Community Irrigation Schemes from the ambit of environmental flows and allocations. This means the RWSS is allowed to cause over-allocation which is inconsistent with the NPSFM.
- (c) If the RWSS goes ahead:
 - (i) Between the dam and the irrigation intake there will be higher flows in the summer irrigation period and lowers flows in late autumn and winter when the reservoir is refilling.
 - (ii) Downstream of the irrigation take there will be a general reduction in median flows throughout the year but an increase in the lowest flows assuming current abstraction is discontinued.
 - (iii) However if current abstraction is not discontinued the MALF will generally decrease and the number of days below the proposed minimum flows will generally increase.
 - (iv) The frequency of flushing flows will be reduced (particularly during irrigation season and late autumn and winter when the reservoir is refilling) and the efficacy of flushing flows at scouring periphyton will be reduced due to a reduction in fine sediment (the RWSS provides for four flushing flows per year).
- (d) EDS submits that the RWSS as it stands is inconsistent with the NPSFM as it will allow further over-allocation and will fail to safeguard the life-supporting capacity of freshwater.

¹⁴ Figures from the AEE, Cawthron report, or HBRC Assessment of potential effects on groundwater and surface water resources.

- (e) EDS suggests that changes to the consent conditions could address these matters. For example, where water levels are nearing minimum flows the RWSS should be required to release water at the rate of the natural inflow. Additional provision for flow variation is also required.
- (f) However, even if the RWSS makes adequate provision for water quantity, the benefits of that could be eroded if there are not robust measures in place to prevent deterioration of water quality.

4.8 ***Effects of the dam on water quality***¹⁵

- (a) The RWSS will enable around 26,000 hectares of the approximately 40,000 hectares of land with agricultural potential in the catchment to be irrigated (currently 6,000 ha is irrigated). It is predicted to result in an intensification of land use, particularly an increase in dairying and cropping.
- (b) Modelling of this intensification (with no on-farm mitigation) predicted an increase of nitrogen and phosphorus losses of 81% and 41% respectively within the irrigated area. With the proposed mitigation measures, phosphorus losses will still increase by 7% within the irrigated area. Nitrogen mitigation scenarios have the potential to decrease nitrogen losses by 8%, which leaves a significant increase in nitrogen losses.
- (c) These figures clearly indicate that the RWSS will result in an increase in nutrient losses, even with substantial mitigation. In fact, the AEE states that along with additional mitigation measures restrictions on the agriculture permitted in some sub-catchments will likely be required to avoid unacceptable nutrient levels.
- (d) PC6 states that the catchment is predominately already over-allocated with respect to phosphorus. EDS submits that the catchment is also predominately already over-allocated with respect to nitrogen (on the basis that nitrogen limits based only on toxicity are inappropriate) but in any event the documentation states that the RWSS will exceed the limits set in PC6 for nitrogen in three to five tributaries (the documentation appears to conflict on this number).
- (e) It seems clear that the RWSS will result in additional nutrient losses, that will result in over-allocation or further over-allocation, and which is likely to degrade the life-supporting capacity of the catchment. This is inconsistent with the NPSFM.
- (f) The RWSS (like PC6) proposed to rely on a single nutrient approach for managing periphyton growth. For the reasons set out above in relation to PC6, EDS submits that this is risky and inappropriate. The documentation states that the increase in nutrient losses will result in no 'significant' increase in nuisance growths. However, this fails to recognise that current levels of nuisance growths are unacceptable to the community and the need to give effect to objective 5.9.1 TT1(c) of PC6 which refers to reducing occurrences of excessive periphyton growth. On this basis, EDS submits that even a minor increase in nuisance growths is unacceptable.

¹⁵ All figures from the AEE or NIWA report

- (g) The RWSS proposes a number of mechanisms to address water quality:
 - (i) All properties must have a Farm Environmental Management Plan (FEMP);
 - (ii) These will be independently audited on a periodic basis;
 - (iii) Non-compliance with the conditions of water supply articulated in the FEMP will result in notice being given to the landowner;
 - (iv) If the conditions are not complied with by the next irrigating season water will not be supplied to that property.
- (h) The Irrigation Environmental Management Plan states that in sub-catchments where an exceedance of limits (or increase in an exceedance) is likely, irrigators will only be supplied with water if an assessment of the proposed land use indicates that the limits will not be compromised.
- (i) However, this does not align with the modelling in the documentation which indicates that even with significant mitigation measures nutrient losses will increase significantly. This calls into question whether the RWSS can viably supply the number of properties proposed (or required to make the project economically viable) on this basis.
- (j) There is also a concern about the robustness of the conditions. For example, condition 11 provides that land use shall be managed so as to minimise the loss of phosphorus to waterways with the objective of ensuring there is no net increase in DRP in waterways. However, there is no condition that sets out the action to be taken if this is not being achieved (compare condition 8 relating to nitrate-nitrogen conditions). The conditions also fail to ensure that water supply will be cut off if limits are not met.
- (k) EDS submits that the RWSS is likely to drive land use intensification that has the potential to increase nutrient losses. At the same time the RWSS fails to provide robust mechanisms to prevent increases in nutrient losses. Objective 5.9.1 TT1 requires water quality to maintain or enhance the habitat and health of macroinvertebrates, native fish and trout, enable safe contact recreation, and reduce the occurrences of excessive periphyton growth. This will not be achieved if nutrient losses increase. As a result, the RWSS is likely to result in over-allocation (or further over-allocation) inconsistent with the NPSFM.

4.9 ***Concerns relating to dam failure***¹⁶

- (a) The Dam Break Analysis details the consequences of the failure of the dam. These indicate that the proposed dam will be within the High Potential Impact Category: dam failure would result in significant damage to the environment and infrastructure and put approximately 1000 people at risk. The proposed mitigation measures are high standards for design, construction and operation and a Dam Safety Assurance Programme. However, the Dam Break Analysis does not address the actual probability of a dam failure occurring and it does appear that this is addressed elsewhere in the AEE.
- (b) In order to undertake a risk assessment it is necessary to have an understanding of *both* the probability and consequences. The location of the dam near a number of fault lines gives rise

¹⁶ All figures from the Dam Break Analysis

to concerns (whether real or not) about the probability of failure in the event of tectonic activity. Unfortunately, the applicant has not provided information on the probability of a failure and therefore submitters are unable to comment on the risk posed by dam failure.

- (c) EDS considers that in the absence of an analysis of the probability of dam failure to inform a risk assessment, and in the face of evidence about the high consequences of a failure, it is not possible to determine that the RWSS promotes sustainable management.

4.10 **Conclusion**

- (a) EDS submits that amendments to the RWSS are required to address the effects of the dam footprint on terrestrial ecology, the effects of the RWSS on water quantity and the effects of the RWSS on water quality. Furthermore, the application does not contain a risk assessment of dam failure. As it stands the RWSS is inconsistent with Part 2 RMA and the NPSFM and should be declined.

5. OVERALL CONCLUSION

- 5.1 EDS supports the introduction of PC6 to put in place objectives, limits and methods for the Tukituki Catchment to give effect to the NPSFM. However, EDS opposes a number of the provisions and submits that PC6 requires amendment in order to give effect to the NPSFM.
- 5.2 EDS supports the use of water storage in principle subject to rigorous assessment of its environmental effects. However, EDS cannot support the RWSS at this time due to the deficiencies in PC6 and concerns about the effects of the RWSS on biodiversity, water quantity and water quality. EDS is particularly concerned that the RWSS will result in a large increase in contaminant discharges and deterioration of water quality in the Tukituki Catchment. This is not acceptable given that water quality in the Tukituki Catchment *currently* fails to meet community expectations.
- 5.3 EDS seeks the following relief:
 - (a) PC6 be adopted with amendments as set out in this submission.
 - (b) The applications relating to the RWSS be declined.