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1. Introduction

- 1.1 The TANK group received a Plan Change Draft on 22nd February 2018 that contained first draft of objectives and policies. At the TANK meeting 39, the Group received recommended draft provisions from the Farmers Reference Group and EAWG for the management of sediment and nutrients.
- 1.2 Following this and further input by the TPWG (Treaty Partners Working Group) and input by TANK members and further refinement by HBRC staff, a further draft of the TANK Plan Change is attached for consideration and further development by the TANK Group.
- 1.3 This is a covering report to provide explanation and background for significant changes and issues still outstanding.

2. Plan Content

- 2.1 The RMA only requires a regional plan to contain objectives, policies and rules. Other content is optional. Regional plans are to help the Council fulfil its statutory roles under the RMA. Plans describe what the council (and community) is trying to achieve in managing resources (i.e. objectives), what activities can be undertaken, determine when resource consents are required and what will be considered in deciding whether to decline or grant a resource consent for an activity. The function and form of a regional plan under the RMA are key factors in determining the content of those plans. Because the TANK plan change is a package of amendments to the Hawke's Bay Regional Resource Management Plan (RRMP), ultimately the form and content of the TANK plan change must 'fit' and work within the existing RRMP's form.

- 2.2 Other requirements in the Act require the Plan to only include matters relevant to the purpose of the Act and to be clear and concise.
- 2.3 The NPSFM also requires that the Council specify the methods that it will use to ensure objectives are met (rules must be in a Regional Plan).
- 2.4 The TANK Plan Change addresses a large number of complex issues over a large and diverse area. The collaborative approach to plan development has led to adoption of a range of interconnected methods including a priority approach and adaptive management responses to meet the agreed objectives.
- 2.5 This complexity of issues and the interdependency of methods, the wide public interest in the Plan Change as well as the implementation commitments of stakeholders engaged in the Plan Change process will lead to the development of a Plan Change draft that includes;
 - a) a description of the issues the Plan is addressing
 - b) methods including the rules (note also that an implementation plan is being prepared that will address implementation details)
 - c) brief explanation for the objectives, policies and rules, and
 - d) maps
- 2.6 Consistency between existing Regional Policy Statement, Regional Resource Management Plan and the Coastal Plan, including for terms and definitions, will also need to be checked.

3. Plan Development

- 3.1 This draft has a number of work streams still to be completed, including methods other than rules and the completion of the explanations. Decisions are still required for flow management regimes for the Ngaruroro and Tutaekuri Rivers. The stormwater policy and rules are being further refined and will be included in the next plan draft (meeting 41).
- 3.2 The water quality attribute state objectives have been temporarily deleted following initial discussion by the TANK Group at meeting 39. The tables required additional information in relation to some attributes (deposited sediment and turbidity), changes to quality states for E. coli and MCI, inclusion of states for oxygen and temperature and attribute states for groundwater.
- 3.3 Also in response to discussion at meeting 39, a two staged approach is being developed, whereby, this plan focuses on priority areas where objectives for specified values are not currently being met (the first stage), with later stages (through plan reviews) working towards longer term goals for improved mauri and ecosystem health. Long term goals for attribute states are still being developed.
- 3.4 There is on-going development of the values descriptions and their expression within the Plan, including in relation to Table 5 of the RPS and as further developed in this Plan Change process. The Treaty Partners Working Group and the HBRC project team are working through options for expressing both Māori and other values in an integrated manner (and to ensure

the objectives and limit setting processes have appropriately considered and incorporated them).

3.5 A number of changes and additions have also been made to reflect the stakeholder and TPWG input and further development by HBRC staff. There are also a number of decisions needing resolution by the Group over the course of the next few meetings. Some are covered in more detail below and include;

- I. Freshwater objectives
- II. Timeframes and trends for reaching freshwater objectives.
- III. Refinement of the Heretaunga Plains groundwater policies
- IV. Managing Zone 1 Groundwater Takes
- V. Reallocation policy options, including consent status
- VI. Riparian land management

3.6 Other topics still requiring development, refinement or further analysis include the following issues. They will be addressed in the next iteration of the Plan draft.

- VII. Trigger flow decisions for surface water abstractions in the Ngaruroro and Tutaekuri
- VIII. Water management zones and other supporting maps
- IX. The schedule of priority catchments (schedule
- X. management of frost protection water
- XI. Default allocations
- XII. Duration and expiry dates
- XIII. Monitoring provisions
- XIV. Implementation Plan

4. Plan Detail

Freshwater Objectives

4.1 Council is working directly with the TANK Treaty Partners Group (TPWG) to ensure that Māori values are identified and properly reflected in the plan change. As part of this, the reports received on the Ngaruroro and Tutaekuri values and attributes (and potentially still to come in relation to the Ahuriri catchment), relevant Iwi Hapū Management Plans and other relevant documents, including Treaty Settlements are being reviewed and will inform this work. Additional resources are being provided by the council to the TPWG to ensure this is done with the best of advice and input available within project timeframes.

4.2 Alternative structures for expressing the objectives for the freshwater bodies of the TANK catchments were considered. One of the alternatives was reformatting objectives according to the ecosystem type. While this option aligned the ecosystem values of those types of water bodies and connected to the water quality outcomes being sought for them, this option was not progressed as it didn't reflect the mountains to sea connectivity particularly well and also divided connected parts of the catchment in terms of quantity. It also was less accurate in reflecting Māori cultural connections with their water bodies.

4.3 A new objective 1 has been inserted to reflect the wider community role and Māori role in sustainably managing land and water. The RMA requires the Council to set objectives and

adopt measures to ensure objectives are met. Its role is also to manage access to scarce resources and adopt limits and allocation regimes. This has to be done in a way that recognises and provides for Māori culture and traditions including their role as kaitiaki. The objective more clearly accounts for this requirement.

- 4.4 Furthermore, there is increasing realisation that water quality outcomes also depend on community and individual responsibility. In the TANK Plan process this is being expressed through measures that reflect the importance of good day to day decision making and the potential for collective action to meet objectives. This includes the land owner collectives as well as marae/hapū management plans, community programmes for things like wetland restoration and industry programmes. This type of decision making cannot easily be reflected through rules or requirements in plans.

Timeframes, Trends and Costs

- 4.5 The exact amount and nature of mitigation that will be required to meet all the Table 1 water quality targets isn't known precisely. For example, improving MCI depends on a range of mitigation measures being adopted and they will further depend on the ecosystem characteristics of each water body and the nature of the environmental stressors that are impacting on the MCI. In some cases, it will be a combination of mitigation measures that will be required to improve MCI including for example, management of urban stormwater, improved oxygen levels, reduced deposited sediment etc.
- 4.6 There are uncertainties and differences about rate of change that might be expected for each of the specific attributes as a consequence of adopting various mitigation measures. While the water scientists predict rapid improvement to aquatic ecosystem health in the lowland streams as macrophyte growth is decreased, there will be time-lags in the establishment and functioning of better riparian vegetation across the catchment and the reduction of the macrophyte growth.
- 4.7 Stock exclusion can also bring rapid improvement to some water quality attributes. The timing of improvements to water quality in relation to sediment mitigation measures however, is much less certain. The time lags and pathways between sediment sources and measured water quality are complex and are difficult to predict. The influence of periodic storms further complicates things.
- 4.8 Despite these uncertainties, there is still a positive relationship between known mitigation measures and water quality improvements. The plan requirements for mitigation measures to be adopted where water quality does not meet required states means that trends or changes in the attribute state over time become very important indicators of success.
- 4.9 However, not only does the NPSFM require the Council to adopt timeframes within which the freshwater objectives are to be met, timeframes are also required to inform the scheduling of mitigation works to meet water quality objectives in environmental management plans and farm plans required within this Plan. In setting timeframes therefore, it will be useful to consider the actual mitigation works being required and the milestones for them as well as the overall timeframe for meeting objectives.

Economic Analysis

4.10 The economic analysis has assessed the impact of mitigation measures to meet the 30% sediment reduction target and has indicated a variable impact on farm budgets depending on the type of farm (including summer dry farms, dairy farms and intensive farms). The Council has also carried out additional case studies¹ for 'real farms' to further help understand the impact of carrying out the mitigation measures for meeting 30% sediment reduction across the range of farms in the TANK area.

4.11 The economic analysis for the different pastoral farm shows that farm owners have variable ability to finance additional sediment mitigation work, although for most farms in erodible landscapes, soil conservation work is an on-going farm expense.

4.12 The economic reporting has considered both the costs of mitigation measures and some of the benefits arising, including improved dry matter production under some land use change scenarios (e.g. retirement or afforestation of erodible land). Not all potential benefits have been quantified, such as reduced maintenance of tracks and fences with reduced incidence of erosion events; or stock health improvements arising from provision of water reticulation.

4.13 There is even more complexity involved in unravelling the historic approach to stormwater and the nature of mitigation measures required and their costs. Future stormwater management will certainly be according to higher design and performance requirements which will also impact on budgets.

4.14 An economic analysis for improved stormwater management has not been carried out. Information from HDC (Meeting 37) has demonstrated that a programmed and integrated management plan approach is likely to deliver cost effective outcomes for water quality. Again it is difficult to predict when the objectives will be met, but progress towards the objectives will need to be demonstrated. This is illustrated by the HDC programme;

First 5 year period: (2010 – 2015)

- *Information gathering, monitoring programme,*
- *prepare CMS & rank catchments*

Second 5 year period: (2015 – 2020)

- *Implement CMP, targeted monitoring, treatment options*
- *Address point source problems*

Final 2 year period: (2020 – 2022)

- *further consultation with iwi (via cultural health index consent condition)*
- *updates of CMP, assess nature of new consent in 2022*
- *Continue targeted monitoring of individual catchments*

4.15 The new stormwater policies and rules will reflect this approach. The water quality objectives and timeframes provided for meeting them will influence the conditions imposed on

¹ Opus; Farm Plan Case Studies in the Tutaekuri and Ahuriri Catchments for the HBRC 2018

stormwater consents. HBRC and the TANK Group members have already alerted Napier and Hastings Councils to the need for improved stormwater management and the associated requirement for funding to be set aside in Council Long Term Plans.

The role of subsidies

4.16 There is a role for subsidies and incentives in terms of;

- I. assisting landowners in adopting the identified mitigation measures more quickly
- II. in acknowledgement of the historic approaches to land clearance, flooding and drainage decisions by the government, the Council and the community
- III. in recognition of the benefit that on-farm initiatives can contribute to the wider public.

4.17 Economic analysis has been based on the assumption that land owners and water permit holders will meet the costs of the mitigation measures. However, with additional funding and other support (such as design and technical information) including as provided for by Council in the LTP for some of the mitigation measures, landowners will be supported and acknowledged for their contributions and assisted in meeting targets more quickly.

Trends

4.18 As noted above, there is potentially good value in focussing as much on trends in water quality attribute states as a specific date for reaching objectives (despite the direction given in the NPS).

4.19 Improving trends for the various water quality attributes - more to come

Recommendation

4.20 No recommendation is being made at this time. However, a decision around timeframes for meeting targets will need to be made at the next meeting once all the economic analysis has been done.

Heretaunga Plains Groundwater Policies and Rules

4.21 On-going concern from some TANK group members about the state of the lowland rivers and the impact of groundwater abstraction on stream flow and groundwater levels across the plains has led to a refinement of policy around the management of the Heretaunga Plains groundwater resource.

4.22 Adverse (actual and potential) effects of groundwater abstraction are more clearly acknowledged in the revised policies. There are provisions to reduce allocations to reflect existing land and water use patterns and the 90Mm³/year allocation limit is therefore adopted as an interim limit with clear direction for review of this limit once actual water use data has been collected and assessed in comparison with the modelled land and water use information used to develop this Plan.

4.23 Note that while there are residual concerns by some TANK members about the impact of abstraction on water quality through increased drawdown affecting the age of water this remains an area needing further research and will be further reported on by the Drinking Water Group in their recommendations in June.

4.24 In the meantime, the Council will be collecting more accurate water use data and ensuring improvements in water use efficiency through new consent conditions. New and more accurate water use data and other aquifer investigations will also be used to improve the Heretaunga Plains aquifer model.

Zone 1 Groundwater Takes

4.25 The new water management zones mean that the management of some existing water takes may change substantially. This is particularly so for the groundwater takes (in Zone 1) that have now been re-classified as having a >90% stream depletion effect and would therefore now be required to cease taking water when the relevant minimum flow was reached.

4.26 The groundwater model, while at a detailed scale and covering a large area of the Plains can still be further improved by additional data and to an even smaller scale (the current grid size is quite large). In order to accommodate both the significant adverse economic effect imposed on those new stream depleting ground water takes and the limitations of the model, alternative solutions are being developed.

4.27 New policy and rule provisions acknowledge this issue and provide an alternative that is applicable only for the existing zone 1 abstractors. It requires their stream depletion effect to be calculated and offset via a lowland stream depletion scheme. Further advice is also being prepared for guiding the kind of analysis required to demonstrate whether the take is in fact a Zone 1 take.

Activity Status for Water Take Applications

4.28 Options for re-allocation of water through the replacement of permits (issued prior to this plan change) and due to expire.

- Controlled activity
 - can be subject to specific conditions and consent can also be granted with conditions in respect of specified matters. Must be granted
- Restricted Discretionary
 - can be subject to specific conditions and consent can also be granted with conditions in respect of specified matters. May be granted
- Discretionary
 - Consent may be granted

4.29 An application to take water has traditionally been considered as a discretionary activity by the Council. It allows proper consideration of the impacts of a water take and ensures the application can be declined should adverse effects be significant. However, this plan change introduces allocation limits and new rules that prevent allocation beyond the specified limits. The Plan has also recognised the water demand associated with existing land and water use and the importance of this water use to the Hawkes Bay community.

4.30 There was considerable debate about an alternative allocation regime that re-allocated water for a range of possible objectives, including high value end uses, low water use and efficient water use activities (meeting 36). No specific criteria for assigning priority were generated

through that debate, although it was clear that municipal water supply, water for human health and the protection of the productive values of land were particularly important areas for the TANK Group. Also identified as important was the need to ensure water use was efficient and that it was both reasonable and reflected the actual amount required (i.e. that allocations would be reduced down to reflect the actual use not consented use).

- 4.31 Rules providing for replacement of TANK consents have been drafted (TANK 7 and TANK 8). They are subject to specific conditions about efficiency and actual use before it can be considered 'controlled'. Further conditions can be imposed to address site specific issues. They are only applicable to the replacement of this round of existing consents and will not apply to the subsequent replacement of these consents when they expire in 15 years.
- 4.32 This is because once this round of replacements has been carried out, policy 24 requires a review of the appropriateness of the allocation limit and the amount of water re-allocated through this process. It is possible that if the Heretaunga Plains aquifer is still found to be over-allocated there may be a need for further reduction in allocation across all consents.
- 4.33 Therefore, in consideration of the improved certainty and recognition of the existing pattern of water and land use, a controlled activity consent status is an alternative allocation option for the Group to consider and has been included in the draft. If it is likely that some consents need to be declined, it would be helpful to understand the situations under which an application would be declined and further policy guidance provided.

Option	Benefits	Costs
Controlled Activity Only applicable for permits issued before the date of notification (replacement of these permits reverts to restricted discretionary)	Reflects existing pattern of land and water use Reduces uncertainty and costs for water users	No opportunity to decline (if it meets the standards specified)
Restricted discretionary Could be subject to the same conditions as a controlled activity	Matters of discretion need to be specified	Could be declined in relation to specified matters
Discretionary	Full discretion to impose conditions or decline the application	More uncertainty and higher costs for applicants.

Reallocation Policy

- 4.34 The draft plan also continues with provisions for new allocation based on existing investment and land use. The effect of this policy for landowners with a low water use crop (or no water permit) on the Heretaunga Plains is potentially significant.
- 4.35 The allocation policy seeks to limit water use at levels reflected by existing land use. It is consistent with Section 124 of the RMA that also seeks to protect existing investment and

provisions of the RPS that recognise primary production. However, it means that where there are low water use crops, there is likely to be limited opportunity to change land use to other higher water demanding crops without additional investment into storage.

- 4.36 For example; grapes require around one third of the amount of water that apple trees require. A change to growing apples means only one third of the land could be converted to apples with the same amount of water, leaving the remaining two thirds as dry land farm. Note too that change from grapes to any other land use activity also has the potential to increase nutrient losses as grapes have the lowest annual nutrient loss rate of all crops.
- 4.37 This allocation policy reduces land use flexibility for a range of primary production options and reduces landowners’ ability to respond to market changes for their crop. While a water permit and the associated infrastructure for irrigation will add capital value to a property, value might decrease where there is insufficient water to meet all likely future crops’ demand for water. A decrease in value for primary production and a lack of water may push land use change to lifestyle lot or urban development.
- 4.38 The introduction of this policy has a potential effect on land values in areas where it was previously assumed that there was no limit to water resources and water permits could continue to be issued. This effect is compounded by the historic approach of allocating for crop type rather than in relation to the potential range of crops that could be grown on a given area. Water allocation based on area rather than crop type enables flexibility in land use as markets change, but it also results in some water being allocated but not used where there are low water use crops. It allows for possible ‘windfall gains’ in fully allocated areas when unused water is transferred to another user.
- 4.39 Reduced land value may well have flow on effects for the landowner’s business investment in so far as it depends on the capital value of the property. (The setting of limits before all allocatable water has been allocated in water permits would have meant there was time for the market and land values and investment decisions to adjust².)
- 4.40 Grape growing results in lower returns than other crops in the Heretaunga Plains according to the economic model. If low returns continue there will be pressure for land use change.
- 4.41 Other options for re-allocation were considered at meeting 36 where different priorities for water were debated. Priority for efficient urban water use was determined and seasonal water use is preferred over other uses if there are water shortages (it could include frost protection takes as well as irrigation and processing of annual crops).
- 4.42 Two other options involve re-allocation on a per hectare basis. These are summarised in table 1 below:

Table 1; Alternative Options for Re-allocation

OPTION	DESCRIPTION	BENEFITS	COSTS
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² No evidence to show this is true.

<p>1. Allocate the amount of water per hectare to all current water permit holders</p>	<p>Rules would specify how much water per hectare.</p> <p>Permit holders may choose to transfer water (subject to any rules about where the transfer can occur).</p>	<p>It has the advantage of being 'fair' as all landowners get the same pro-rata amount</p> <p>Where some crops/landowners need more water, they can seek to transfer from other water permit holders. Wealth can be transferred through water transfers rather than 'lost' by not being allocated to land.</p>	<p>It may not be considered equitable, as in order to continue with current land and water use activities (including associated flow-on processing), more water is needed by some land uses than others. The different water demand over time might not be able to be addressed. Council would need to manage water permit transfers. Systems may be set up to allow 'trading'. This approach likely to be more focussed on individual water management for private benefit rather than the more collective or community approaches that have recently been developing (e.g TIG)</p>
<p>2. Allocating a 'base' amount to all water users plus an additional amount for high water use crops that is gradually reduced over time and re-allocated to low water users</p>	<p>This is a regulatory approach to re-allocation rather than a market driven approach.</p>	<p>Provides for a transition to a more 'fair' allocation of water – it is not clear if this would be more equitable, however (see above).</p>	<p>This option would interfere with water users ability to respond to managing scarce resources in more flexible ways including through collective action. Reflects a approach that 'picks winners' and would interfere with market solutions</p>

4.43 Options 1 and 2 are both inconsistent with sections 104(2) and 124 of the RMA and some provisions of the RPS regarding existing uses. Both options also reinforce the current close link between land and water permits, and consequently on land value. A possible future in which allocatable water is mobile and can readily be moved between properties to reflect the

changing water demand across a range of crop types within the Heretaunga Plains is likely to be a better longer term goal.

- 4.44 The issue is now more explicitly addressed with changes to some of the policies, however it is only partly resolved;
- (i) acknowledging the need for flexible allocation and water permit management frameworks that enable allocatable water to be use efficiently and encourage collective management of scarce resources - note that the Plan does not need to prescribe solutions for every problem.
 - (ii) Identifying a role for Council in managing the adverse effects arising from this limit setting process in the Heretaunga Plains. It is expressed through Council involvement and support of water augmentation/storage proposals that seek to address this impact on some landowners and also to address the potential need to protect productive values of land where lack of water for primary production might be an issue as a result of limit setting for water.

Riparian Land Management – Karamu Catchment

- 4.45 A little more analysis around riparian land management milestones has been completed in relation to the shading and macrophyte objectives for the Karamu catchments.
- 4.46 The main environmental stressors in the lowland rivers in the Karamu catchment have been found to be low dissolved oxygen and high temperatures.
- 4.47 Macrophyte growth is a key element of healthy lowland stream ecosystems and the spring fed rivers in the Karamu catchment (and including the Ohiwia, Whaitio and Tutaekuri-Waimate Rivers that are Ngaruroro tributaries). However, where there is excessive growth in streams, macrophyte growth will adversely impact on oxygen levels and cause significant stress on other aquatic organisms. Macrophytes also take up space that is used by fish and limits the amount of habitat available for them. Weed growth also adversely affects recreational use of the river (rowing and swimming). Note this is unlike the role of macrophytes in shallow lakes, where they play an important part in reducing the occurrence of algal blooms.
- 4.48 The effect of macrophyte growth on the ecological health and mauri of these streams has led to objectives for riparian vegetation for shade being a priority component of the management regime for the Karamu catchment.
- 4.49 The removal of some macrophyte growth is also likely to have a consequential impact on the movement of sediment. Water flows more freely and there would be less plants trapping sediment within the waterway. Sediment losses to the river will also be reduced by other mitigation measures (soil conservation and erosion control in the hill country, stock exclusion and reduction of bank erosion).
- 4.50 The current objective (agreed at meeting 39) for the Karamu catchment rivers is for riparian vegetation improvement so that the water is shaded and macrophyte growth is reduced to 50% of the cross sectional volume.

- 4.51 Considerable investment into meeting this target is necessary. There is approximately 346km of stream in the catchment and Table 2 summarises the findings of an assessment of streambank vegetation. Of the total 346km, this some 220km is in poor condition.

Table 2; Condition of Riparian Vegetation in the Karamu Catchment

CATCHMENT	RIPARIAN VEGETATION CLASSIFICATION								TOTAL KM
	Poor		Fair		Good		Excellent		
	%	Km	%	Km	%	Km	%	km	
Poukawa	61	47.5	23	18	5	4	11	8.5	78
Paritua-Kawerawera	57	41	22	16	20	14	1	1	72
Awanui	68	28	24	10	7	3	1	.5	41
Louisa	64	16	25	6	11	3			25
Irongate-Southland	87	19	6	1	7	1			22
Havelock North Streams	20	5	36	9	44	11			25
Hastings streams	50	7.5	40	6.5	9	1			15
Raupare	88	16	11	2	1	.1			18
Mangateretere	61	3	19	1	20	1			5
Karamu-Clive corridor	90	21	8	2			2	.2	23
Muddy Creek	84	18.5	8	2	5	1	3	.5	22
TOTAL km		222.5		72		39.1		10.7	346

- 4.52 The economic analysis, which looks at costs to primary production land owners in the Plains indicates about \$3.6m is required to establish improved vegetation with another (approx.) \$1m per year for maintenance. An assessment of the costs of land not being available for production was also made. (It does not include riparian land in public ownership or the contribution the Council already makes through the Te Karamu strategy³. This is also not including additional mitigation costs necessary for reducing sediment or nutrient losses).
- 4.53 Landowners are beginning to understand the cumulative impact of their land uses on the health of aquatic ecosystems. This is illustrated by the Twyford Irrigators Group embarking on collective action to meet better environmental outcomes. This management approach supports landowners and also provides practical, economic and technical solutions through collective action.
- 4.54 The TANK members representing primary production on the Plains have been considering the mitigation measures and milestones necessary for meeting objectives for riparian planting. There is an acknowledged need for more information on how best to meet objectives for aquatic ecosystems as well as for land drainage and flood control.

³ Check LTP provisions

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Covering report; TANK Draft Plan Change



- 4.55 In association with the Council staff likely to be implementing this part of the Plan, there is a suggestion that a reasonable objective for the establishment of riparian vegetation would be 200km of riparian land assessed and planted where practicable. Staff note that improvements to aquatic ecosystem health will not be immediate as trees establish and grow over time. In some places structural solutions may be found.