

Addendum Report to the Hearing Report on Proposed Plan Change 9

Tūtaekurī, Ahuriri, Ngaruroro and Karamū
Catchment Area

19 May 2021
Hawkes Bay Regional Council

Addendum Report to the Hearing Report on Proposed Plan Change 9

- Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment Area

Report to: The Hearings Commissioners

Date: 19 May 2021

Subject: Proposed Plan Change 9: Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments

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Abbreviations

Abbreviations used throughout the text of this report are:

Abbreviation	Meaning
PPC9	Proposed Plan Change 9
TANK	Tūtaekurī, Ahuriri, Ngaruroro and Karamū
RPS	Regional Policy Statement
RRMP	Regional Resource Management Plan
RMA	Resource Management Act 1991
HBRC	Hawke's Bay Regional Council
HPUDS	Heretaunga Plains Urban Development Strategy
RPC	Regional Planning Committee
ANZECC	Australia New Zealand Environment and Conservation Council
HBLAWMS	Hawke's Bay Land and Water Management Strategy
JWG	Joint Working Group
NPSFM	National Policy Statement for Freshwater Management
NPSFM2020	National Policy Statement for Freshwater Management 2020
NPSFM2017	National Policy Statement for Freshwater Management 2017 amendments
NPSREG	National Policy Statement Renewable Energy Generation
NZCPS	New Zealand Coastal Policy Statement
NPSUD	National Policy Statement for Urban Development
NES	National Environmental Standard
RRMP	Regional Resource Management Plan
SPZ	Source Protection Zone

Attachments	
Appendix 1	<p>Analysis of submitter's evidence</p> <ul style="list-style-type: none"> • Table 1A: Analysis on general and cultural matters • Table 1B: Analysis on water quality provisions • Table 1C: Analysis on water quantity provisions • Table 1D: Analysis on stormwater management provisions • Table 1E: Analysis on Source Protection Zone provisions
Appendix 2	<p>Recommended changes to PPC9 as a result of submitter's evidence (including recommended changes from the Hearing Report in response to submissions)</p> <ul style="list-style-type: none"> • Appendix 2A – Recommended changes to PPC9 (excluding schedules and maps) • Appendix 2B – Schedules • Appendix 2C -Planning Maps
Appendix 3	Experience and qualifications of the Reporting Team
Appendix 4	Evidence from Ceri Edmunds, Manager Planning Policy, HBRC
Appendix 5	Evidence from Anna Madarasz-Smith, Team Leader Marine and Coasts, HBRC
Appendix 6	Evidence from Dr Sandy Haidekker, Senior Freshwater Quality scientist, HBRC
Appendix 7	Dr Barry Lynch, Team Leader Land science, HBRC
Appendix 8	Evidence from Dan Fake, Freshwater ecology scientist, HBRC
Appendix 9	Evidence from Dr Channa Rajanayaka, Surface water and groundwater modeller, NIWA
Appendix 10	Evidence from Rob Waldron, Surface water hydrologist. HBRC
Appendix 11	Evidence from Kathleen Kozyniak, Principal scientist Air, HBRC
Appendix 12	Evidence from Pawel Rakowski, Senior Groundwater modeller, Salt Lake Potash, Perth, Australia

1 Introduction

1. The Hearing Chairperson issued Minute 1 on 23 March 2021. This set out a timetable for circulation of the council's Hearing Report and expert evidence from submitters.
2. Minute 1 stated that pursuant to section 42A of the Resource Management Act 1991 (RMA) a Hearing Report must be made available by 15 April 2021. Council officers prepared the Hearing Report and it was made publicly available on the council's website on 15 April 2021. The Hearing Report evaluated the issues raised in submissions and provided reporting officers' recommendations to Proposed Plan Change 9 (PPC9).
3. Minute 1 also stated that submitter expert evidence is to be provided to the council by 5pm, Friday 7 May 2021. Minute 1 also stated that council may provide an additional response to submitter expert evidence by 5pm, Monday 17 May 2021. Any proposed further amendments to PPC9 must be included within this response. This report is the Addendum Report to the section 42A Hearing Report with a set of updated plan provisions in Appendix 2.
4. The Hearing Chairperson issued Minute 3 on Friday 7 May 2021 stating that there will be a short extension for expert evidence to be filed, and an equivalent extension for the provision of a response from the staff of the Regional Council. Memo 3 stated that the deadline for expert evidence was extended to 5pm on Tuesday 11 May and Council staff response must be lodged by 5pm on Wednesday 19 May.
5. The Council received evidence from 18 submitters. The Reporting Team has responded to these pieces of evidence in this Addendum Report. The Council also received letters from the Ministry of Education and Fire and Emergency that stated that they will not be attending the hearing. The letters responded to the Reporting Officers recommendations in the section 42A Hearing Report. The Reporting Team has not responded to these two letters and the two submitters have stated they do not wish to appear at the hearing.
6. This report does not cover all of the submitter evidence received on PPC9. This report provides commentary on submission topics where submitter evidence has raised new or additional information on PPC9, or where further clarification on matters raised in evidence is required in order to assist the Hearing Commissioners to reach their decision.
7. The reporting team has reviewed the evidence provided by the submitters. This report covers specific amendments to the following topics for which evidence was received:
 - (a) General and cultural matters
 - (b) Water quality
 - (c) Water quantity
 - (d) Stormwater
 - (e) Source Protection Zones.
8. For all other topics, the Reporting Team supports the analysis and recommendations in the section 42A Hearing Report and we do not repeat these in this report.
9. The discussion and recommendations in this report are intended to assist the Hearing Commissioners and those persons or organisations that lodged submissions on PPC9. This report is to be read in

conjunction with the section 42A Hearing Report. Appendix 2 that is attached to this report contains the most up to date version of PPC9 with changes recommended by the Reporting Team.

10. The recommendations contained within this report are not the decisions of the Hearing Commissioners. The Hearing Commissioners will consider all the information in the submissions together with the evidence presented at the hearing.
11. The reporting team has read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and we agree to comply with it. We confirm that we have considered all the material facts that we are aware of that might alter or detract from the opinions that we express, and that this evidence is within our area of expertise. The experience and qualifications of the reporting team is attached in Appendix 3.
12. I recommend that PPC9 be approved with the amendments set out in Appendix 2.

2 Corrections to the Hearing Report and Appendix 1 of the section 42A Hearing Report

13. After the Hearing Report was made available on the Council's website, the reporting team noticed errors in the Hearing Report and Appendix 1A and 1B - Recommended Changes to Proposed Plan Change 9 – Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment Area. Some of these errors were also picked up by the experts and mentioned in evidence.
14. Amendments are recommended to the following provisions due to formatting errors in tracked changes (~~strikethrough~~, underline, and **bolding**):
 - OBJ TANK 7
 - OBJ TANK 17
 - OBJ TANK 18
 - POL TANK 5
 - POL TANK 24
 - Table 6.10
 - RRMP Rule 12
 - RRMP Rule 33 Matters for Control/Discretion
 - RRMP OBJ 42
 - RRMP Table 10.
15. Amendments are recommended to the following provisions due to numbering errors:
 - POL TANK 8
 - POL TANK 39
 - Rule TANK 9 Matters of Control/Discretion
 - Rule TANK 14 Conditions/Standards/Terms

- RRMP Rule 37.
16. Amendments are recommended to the following provisions due to typing errors:
- Table 6.10 – consequential amendments to reflect recommended additional, deleted and changes in activity status were omitted.
 - Table 6.10.2 heading – a heading for an additional column was omitted.
 - RRMP Rule 62a Matters for Control/Discretion – the matters for control/discretion were replaced in error. No changes are recommended to these matters from the notified version.
 - RRMP Rule 62b name – no name for Rule 62b was included in the notified or recommended changes version of PPC9.
17. Amendments are recommended to the following provisions due to spelling errors:
- RRMP Rule 2 Matters for Control/Discretion.
18. Amendments are recommended to the following provisions to provide easier reading for users:
- RRMP Rule 67 Activity
 - RRMP Rule 69 Activity
 - Definition of Consumptive water use.
19. Amendments are recommended to the following provisions due to referencing errors:
- Incorrect reference to RPS POL LW 2B instead of RPS OBJ LW1 2B in Hearing Report paragraphs 1351, 1355, 1364, 1365, 1372, 1379, and 1510
 - Update reference to Heretaunga Plans Groundwater Quantity Area in POL TANK 38.
20. Amendments are recommended to the following provisions which are consequential amendments to the RRMP:
- RRMP POL 72A, RRMP POL 74A, RRMP POL 76A, RRMP POL 78A – amendments under RMA section 55(2A) to the RRMP to give effect to the NPSFM2020 make these consequential amendments unnecessary, and mean that these RRMP policies can be removed from PPC9.
 - RRMP OBJ 42 and RRMP Table 10 – the consequential amendments as notified could cause the objective and table to apply to the whole region. This was not the intention of the consequential amendments as notified.

3 Analysis of submitters' evidence

21. The Reporting Team has reviewed the evidence provided by the submitters. This report covers the following submission topics for which evidence was received:

Report section	Topic heading	Section author
4	General and cultural	Anne Bradbury
5	Water quality	Mary-Anne Baker
6	Water quantity	Ellen Robotham
7	Stormwater management	Kim Anstey
8	Source protection zones	Anne Bradbury

22. All recommended amendments to PPC9 in response to submissions and evidence, are provided in Appendix 2. This is the most up to date version of PPC9 as recommended by the reporting team. Appendix 2A shows all of PPC9 apart from the schedules and the maps. Appendix 2B shows the schedules of PPC9. Appendix 2C shows the maps of PPC9.
23. Red text with ~~strikethrough~~ and underline show changes that were recommended in the section 42A Hearing Report. Green text with ~~strikethrough~~ and underline show recommended changes proposed in this Addendum Report in response to expert evidence received from submitters.

4 General paragraphs on topics

4.1 Analysis on submitter's evidence on general and cultural matters

24. Statements of evidence were received from 18 submitters. We received evidence from tangata whenua, stakeholder groups, Territorial Authorities and an environmental group. The evidence from the submitter's narrowed down the main issues. The main issues coming through the evidence were about land use change, priority areas, the definition of actual and reasonable, the allocation of water for new uses, and Source Protection Zone maps. However, evidence received from two submitters, Ngati Kahungunu Iwi Incorporated and Te Taiwhenua o Heretaunga, discussed concerns with a wide range of issues.
25. I will address matters raised through evidence on general and cultural matters in table 1A of Appendix 1. I do not address all evidence on general and cultural matters. If I have not addressed the points in the evidence that means I support the analysis in the section 42A Hearing Report.

5 Analysis of submitter's evidence on water quality

5.1 Background

26. Statements of evidence were received from tangata whenua, stakeholder groups including primary industry and agricultural industry groups, landowners and an environmental group. The main themes through the evidence were about management of land use change, priority management areas, some details of the water quality target attribute states and requirements for Freshwater Farm Plans (FWFP). A main area of contention is in relation to the FWFPs and the consent requirements for productive land and the development of a nutrient load regulatory regime.
27. I am responding to some topics in table 1B in Appendix 1. I do not address all of submitter's evidence on water quality. If I have not addressed the points in the evidence that means I support the analysis in the section 42A Hearing Report.

6 Analysis of submitter's evidence on water quantity

6.1 Background

28. Statements of evidence that included discussion on the water quality provisions were received from stakeholder groups, tangata whenua, private companies, and district councils. The main themes through the submission were about the definition of Actual and Reasonable, provision of increased water use for certain uses, consideration of the relationship between the NPSFM2020 and NPSUD2020, definitions for irrigation efficiency, the Ngaruroro minimum flow, high flow allocation for Māori economic, cultural and social well-being, and ensuring clarity and consistency of provisions.
29. I am responding to topics in table 1C in Appendix 1. I do not address all of submitter's evidence on water quantity. If I have not addressed the points in the evidence that means I support the analysis in the section 42A Hearing Report.

7 Analysis of submitter's evidence on stormwater management

7.1 Background

30. Statements of evidence that included a discussion on the stormwater provisions were received from private companies and Territorial Authorities. This evidence seeks to amend TANK Pol 28 – 31 and TANK Rules 19 – 22. The evidence has provided further rationale and explanation where the section 42a Hearing Report did not amend PPC9 as a result of submissions. Some of the evidence is seeking consistency throughout PPC9 and provides wording suggestions to improve clarity.
31. I am responding to some topics in table 1D in Appendix 1. I do not address all of submitter's evidence on stormwater management. If I have not addressed the points in the evidence that means I support the analysis in the section 42A Hearing Report.

8 Analysis of submitter's evidence on Source Protection Zones

8.1 Background

32. Statements of evidence that included a discussion on Source Protection Zones (SPZ) were received from stakeholder groups and the territorial authorities. The evidence seeks to amend TANK OBJ 9, POL TANK 6-9, some of the TANK Rules and some of the RRMP rules. The evidence has pointed out a few errors in the section 42A Hearing Report where the Reporting Team has recommended accepting submission points but the changes were not added to the recommended changes version of PPC9. Some of the evidence is seeking to make things consistent throughout the plan and to provide more clarity.
33. I am responding to some topics in table 1E in Appendix 1. I do not address all of submitter's evidence on water quality. If I have not addressed the points in the evidence that means I support the analysis in the section 42A Hearing Report.

9 Conclusions

34. Having considered all of the submissions, submitters' evidence, the relevant statutory documents and the relevant non-statutory documents, I recommend that PPC9 be adopted subject to the amendments set out in Appendix 2 to this report.
35. Adoption of PPC9:
- (a) will assist the council in achieving the purpose of the RMA
 - (b) will help to give effect to the National Policy Statement on Freshwater Management 2020
 - (c) will give effect to the Regional Policy Statement, and
 - (d) is consistent with the RRMP.

10 Recommendations

36. That, the Hearing Commissioners accept, accept in part or reject the submission points as outlined in this Addendum Report and the Hearing Report.
37. That, as a result of the recommendations on the submissions and the submitters' evidence, the Regional Resource Management Plan be amended by:
- (i) Chapter 5.10 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments
 - (ii) A new section to Chapter 6, 6.10: TANK Catchments specific rules
 - (iii) Three new RRMP rules to Chapter 6 – Rule 33A, Rule 62a and Rule 62b
 - (iv) 11 new schedules, Schedules 26-36
 - (v) New terms to Chapter 9 Glossary, and
- (b) Consequential amendments to these parts of the RRMP:
- (i) Parts of Section 5 of the RRMP
 - (ii) 23 rules in Chapter 6 of the RRMP.

38. These amendments are set out in the Recommended Changes to Proposed Plan Change 9 as set out in Appendix 2 to this report.

11 Signatories

	Name and title of signatories
Authors	Anne Bradbury, Senior Policy Planner Ellen Robotham, Policy Planner Kim Anstey, Policy Planner Mary-Anne Baker, Senior Policy Planner
Reviewer / Approver	Ceri Edmonds, Manager Policy and Planning

Appendix 1 Analysis of submitter's evidence

This appendix includes the analysis of submitter's evidence.

This appendix is split into five parts:

- Table 1A: Analysis on general and cultural matters
- Table 1B: Analysis on water quality provisions
- Table 1C: Analysis on water quantity provisions
- Table 1D: Analysis on stormwater management provisions
- Table 1E: Analysis on Source Protection Zone provisions.

Table 1A: Analysis on general and cultural matters

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
Freshwater Management Units	<p><u>Submitter 132, Te Taiwhenua o Heretaunga</u> Maurice Black, paragraphs 188 – 190</p> <p>Mr Black states that the reporting officers are waiting on a separate process to occur before we can state the Freshwater Management Units for TANK.</p>	<p>In paragraph 124 of the section 42A Hearing Report I stated that there was a paper going to the Regional Planning Committee in April 2021 to confirm a region wide approach to Freshwater Management Units. I stated that I would provide an update at the hearing.</p>	<p>A Regional Planning Committee workshop was held in April 2021 and a region-wide approach to Freshwater Management Units was discussed at the workshop. As this was a workshop it was not open to the public therefore there is no paper available for it.</p> <p>A paper is being taken to the Regional Planning Committee in July where staff will seek a decision from the committee on a region-wide approach to Freshwater Management Units. Therefore, I am unable to provide an update as to how many Freshwater Management Units are in the TANK Catchments. I am able to update the Panel and submitters after the committee meeting in July.</p>	<p>I am not recommending any changes to PPC9 as the Regional Planning Committee has not yet decided on Freshwater Management Units.</p>
Te Mana o te Wai	<p><u>Submitter 63, Napier City Council and submitter 207, Hastings District Council</u> Mark Clews, paragraphs 13-14</p> <p>Mr Clews states that municipal supplies fall within the ambit of the second and third tier of the hierarchy of obligations.</p> <p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, paragraphs 25-34</p> <p>Mr Dooney states that food security falls into the second tier of the hierarchy of obligations and this</p>	<p>In paragraph 123 of the section 42A Hearing Report I state that the Council has not undertaken engagement with tangata whenua and communities to determine how Te Mana o te Wai applies in this region. This engagement is required under section 3.2 (1) of the NPSFM2020.</p> <p>I state that I do not think it is possible to fully give effect to the true intent of the NPSFM2020 until this engagement has occurred</p>	<p>I support my comments in the section 42A Hearing Report. Some of the evidence has stated what they think fits into the second and third tier of the hierarchy of obligations however I do not think we can be specific about these tiers until the engagement with tangata whenua and communities has been undertaken. This engagement will determine local issues.</p> <p>With regards to municipal supply, I do not see how Hastings District Council will be able to implement the hierarchy of obligations. That is, I am not sure what part of the municipal supply Mr Clews thinks fits into the second tier and what part fits into the third tier and how implementing the hierarchy will work in practice.</p>	<p>I am not recommending any changes to PPC9. I support the comments and analysis in the section 42A Hearing Report.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>includes vegetable and fruit production for domestic supply.</p> <p><u>Submitter 135, Ravensdown Limited</u> Carmen Taylor, paragraph 4.13</p> <p>Ms Taylor states that industrial and commercial uses fit in the third tier of the hierarchy of obligations.</p>	<p>and the local approach to giving effect to Te Mana o te Wai has been determined.</p>	<p>With regards to food security, Mr Dooney discusses vegetables and fruit for domestic supply. I am not sure how we could determine how much water we could allocate to grow fruit and vegetables for domestic supply. Or whether domestic supply includes other regions in New Zealand or just the Hawke's Bay region. Some horticulture may fit inside tier two of the hierarchy of obligations, but I am not sure that all horticulture produced in the region would. I am also unclear how we could split up industrial and commercial uses that would support the region which Ms Taylor discusses.</p> <p>The engagement to determine how Te Mana o te Wai applies in this region will help to answer these questions.</p> <p>With regards to the hierarchy, tier one is prioritised first so we must prioritise the health and well-being of water bodies and freshwater ecosystems. The Heretaunga aquifer is an over-allocated aquifer and Policy 11 of the NPSFM2020 states that over-allocation is phased out, and future over-allocation is avoided.</p>	
<p>National Policy Statement for Urban Development (NPSUD)</p>	<p><u>Submitter 82, Lowe Corporation Ltd</u> Gerard Willis, paragraphs 57-65</p> <p>Mr Willis discusses district council's obligations to provide for growth.</p> <p><u>Submitter 63, Napier City Council</u> and <u>submitter 207, Hastings District Council</u></p>	<p>In paragraph 1234 of the section 42A Hearing Report, Ms Robotham stated that that local authorities have obligations to both the NPSFM2020 and the NPSUD2020.</p>	<p>These submitters are concerned about obligations to provide for growth under the NPSUD2020. I agree with Ms Robotham, local authorities have obligations to meet all National Policy Statements.</p> <p>The NPSUD2020 states that local authorities over a tier 2 urban environment are jointly responsible for implementing parts of the NPSUD2020.</p> <p>Napier and Hastings are a tier 2 urban</p>	<p>I am not recommending any changes to PPC9 in response to these pieces of evidence.</p> <p>All three local authorities will have to ensure growth is met while aligning with the NPSFM2020 and other National Policy Statements.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>Annette Sweeney, paragraph 8</p> <p>Ms Sweeney states that one part of her evidence addresses the Territorial Authorities meeting the statutory obligations to provide for growth and give effect to the NPSUD2020.</p>		<p>environment. Therefore, Hawke's Bay Regional Council is jointly responsible, along with the Territorial Authorities for giving effect to the NPSUD2020. Section 67 (3)(a) of the RMA states that regional plans must give effect to any national policy statements which again shows that HBRC must give effect to the NSPUD.</p> <p>Section 75(3)(a) of the RMA states that district plans must give effect to any national policy statements. Therefore, Territorial Authorities also have to give effect to the NPSFM2020.</p>	
Kaitiaki Guardians	<p><u>Submitter 132, Te Taiwhenua o Heretaunga</u> Marei Apatu, point f) on page 14</p> <p>Mr Apatu states that it is an affront to have the HBRC referred to as Kaitiaki Guardians over the environment for the region and asks that this be removed from PPC9.</p>	<p>TANK OBJ 1 and TANK OBJ 2 were discussed in section 12 of the section 42A Hearing Report. These objectives refer specifically to the roles of mātauranga Māori and kaitiakitanga within the context of managing freshwater resources. OBJ TANK 2(c) specifically recognises and provides for the kaitiakitanga role of tangata whenua and their whakapapa and cultural connection with water.</p>	<p>I do not think it is the intent that PPC9 refers to HBRC as Kaitiaki Guardians. Through minor amendment to the text in the objectives and policies this could be made clearer and avoid confusion. OBJ TANK 2c) provides such clarity. I recommend that the wording in OBJ TANK 2c) is replicated elsewhere in PPC9.</p> <p>OBJ TANK 1, OBJ TANK 5, POL TANK 33 mention kaitiaki and I recommend that these provisions are amended to replicate OBJ TANK 2c) to provide clarity.</p>	<p>I recommend OBJ TANK 1, OBJ TANK 5 and Pol TANK 33 are amended to replicate OBJ TANK 2c). This will provide clarity. The amendments can be seen in Appendix 2A of this report.</p>
Mahinga kai	<p><u>Submitter 132, Te Taiwhenua o Heretaunga</u> Maurice Black, paragraph 15</p> <p>Mr Black states that some objectives refer to mahinga kai but not in a manner that aligns with its meaning</p>	<p>In Schedule 26 as amended by the section 42A Hearing Report, it is mentioned that the Kotahi review will finalise mahinga kai.</p>	<p>Mahinga kai is defined in the glossary section of PPC9. This definition expands on the definition of mahinga kai in the RRMP and it does include more than just 'collection'. However, TANK OBJ 15 mentions the collection of mahinga kai. I recommend "the collection" is deleted.</p>	<p>I recommend TANK OBJ 15 is amended. The amendments can be seen in Appendix 2A of this report.</p> <p>I recommend no further changes to PPC9, however HBRC will need</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>which is described in Appendix 1 of the NPSFM2020.</p>		<p>Mahinga kai has been identified as a water quality value and attributes that provide for it have been identified in Schedule 26. However, this has not been done in relation to the NPSFM2020 requirements. This will be addressed through Kotahi, the regional plan review.</p>	<p>to align with the NPSFM2020 requirements through their Kotahi plan review.</p>

Table 1B: Analysis on water quality provisions

Topic	Submitters' evidence	Section 42A Hearing Report summary of findings	Discussion	Recommendation
<p>OBJ TANK 3 POL TANK 21 Climate Change</p>	<p><u>Submitter 180, Horticulture NZ</u> Michelle Sands, paragraphs 84 – 96</p> <p>Ms Sands seeks a more general view of climate change that considers mitigation, rather than one focussed on the effects of climate change only. A policy regime that supports land use change to horticulture is also sought.</p>	<p>Section 42A Hearing Report confirms the need for TANK OBJ 3, although separates the provision into objective and policy.</p> <p>Section 42A Hearing Report did not consider providing for land use change that has GHG lower emissions.</p>	<p>TANK OBJ 3 and TANK POL 61 are focused on accounting for the effects of climate change in respect of changes on ecosystems, water supplies, farm systems etc. However, I agree that climate change requires a wider consideration that includes not only adaptation, but also mitigation. Climate change is a significant issue and Hawke's Bay Regional Council has recently stated that there is a climate emergency and that climate change underpins all our decision making both in respect of adaptation and mitigation.</p> <p>To that end I recommend that TANK OBJ 3 is further amended to delete reference to 'effects of' climate change in the objective and to insert another clause in TANK POL 61 to enable consideration of reducing greenhouse gas emissions alongside other contaminant losses. Mitigation is already included in TANK POL 20 in respect of afforestation and planting as recognised mitigation measure.</p> <p>However, I consider it inappropriate to amend the land use change TANK POL 21. The policy is currently too narrowly cast as a nitrogen loss measure and this suggestion is outside its scope. I consider reference to both policies is sufficient to guide decision</p>	<p>Accept in Part submission point 180.31.</p> <p>Delete "effects of" climate change in TANK OBJ 3 and insert a new clause in TANK POL 61 to refer to greenhouse gas emission reduction.</p> <p>Insert a new matter for control/discretion in TANK Rules 5/6 to refer also to TANK POL 61.</p>

Topic	Submitters' evidence	Section 42A Hearing Report summary of findings	Discussion	Recommendation
			<p>making at this time, by considering climate change effects while not allowing for increases in nitrogen losses. The available models for assessing GHG losses and science for mitigation measures across a range of land use systems are still relatively recent. As referenced in 180/5 para 96, there is a need for land use change that is within all the limits set. I recommend a more balanced approach with an alternative solution to that suggested by Sands. A further matter for discretion can be included in TANK Rules 5 and 6 that enables assessment of contaminant loss risks according to TANK POL 61 as well as TANK POL 21.</p>	
TANK OBJS 10-14	<p><u>Submitter 135, Ravensdown</u> Carmen Taylor, section 4</p> <p>Ms Taylor seeks reference to industrial and commercial water in the objectives.</p> <p><u>Submitter 120, Ngāti Kahungunu Iwi Incorporated (NKII)</u> Grey Wilson, Appendix 1</p> <p>Ms Wilson suggests the reference to the activities being managed in PPC9 in TANK OBJs 10 – 14 are unnecessary.</p>	<p>Para 264 etc considered this water use to be outside the hierarchy included in the NPSFM.</p> <p>This was not addressed in the Section 42A Hearing Report.</p>	<p>Industry and commerce allow communities to meet social and economic needs for community well-being and recognition of them should be added as a water use value. Note that PPC9 does not prioritise commercial end uses of water except to avoid moving water away from irrigation of productive land.</p> <p>I agree the reference to the list of activities is not necessary and the policies themselves reflect how objectives are to be met, including improvement activities as well as RMA Sec 14 and 15 activities. This was also sought by submitters 201 and 210.</p>	<p>Allow submissions 135.10, 135.12, 135.13, to insert reference to commercial and industrial water use.</p> <p>Allow submissions 120.13 201.25, 201.26 and several others seeking clarity in the objectives and delete the phrase '...the use and development of land, the discharge of contaminants and nutrients, and the taking, using, damming and diverting of freshwater' from the objectives 10 -14.</p>

Topic	Submitters' evidence	Section 42A Hearing Report summary of findings	Discussion	Recommendation
All	<p><u>Submitter 180, Horticulture NZ</u> Catherine Sturgeon, paragraph 91ff</p> <p><u>Submitter 135, Ravensdown</u> Carmen Taylor, section 8</p> <p>Ms Taylor seek consistency in terminology.</p>	<p>The section 42A Hearing Report sought to align terminology, but some aspects are still to be addressed, including in relation to determination of the Freshwater Management Units and alignment with national direction.</p>	<p>Terminology does need to be consistent and PPC9 has been further amended to reflect that.</p> <p>I do not agree that PPC9 needs to differentiate between river catchments and sub-catchments. This is a matter of scale and PPC9 considers both tributary as well as the mainstem catchments (TANK) and where appropriate, refers to waterbodies (a more comprehensive term than river). The reference to 'sub-catchments' should be deleted from PPC9 as it isn't used consistently and reference to catchment is sufficient. The priority catchment maps could be relabelled as 'priority areas' if considered necessary.</p>	<p>Allow submissions 180.10, 180.11 135.1, and allow in part submissions 180.9.</p> <p>Delete reference to sub-catchments. Amend to refer to good management practice (not industry good management).</p> <p>Refer consistently to 'target attribute states' as required.</p>
TANK POL 21 (Land use change)	<p><u>Submitter 180, Horticulture NZ</u> Catherine Sturgeon, paragraphs 87-90</p> <p>Ms Sturgeon suggests the policy be amended to refer to all contaminant loss that may arise from land use change and to provide for land use change where that results in negligible cumulative increase in N loss if the activity results in improvements to other water quality attributes.</p> <p><u>Submitter 66, Ngaruroro Irrigation Society (NIS)</u></p>	<p>The policy and rules were developed as a result of wide community concern about land use change (with a particular concern about change to dairy – likely a reflection of experiences elsewhere in NZ and concerns about impacts of increased irrigation for dairying). There is also concern about the health of the receiving estuary environment and the effects of increasing nutrient loads on estuary health.</p>	<p>Land use changes will result in various changes to contaminant loss risk (including nitrogen, E.coli, phosphorus or sediment) depending on what the change is. Experience around NZ in relation to land use change to dairying raises community concerns about managing N loss. Land uses involving frequent cultivation also increases risk of sediment and nutrient loss. Some contaminants are more directly controlled by recognised mitigation measures – and by land use rules that regulate (for example) cultivation and stock exclusion. Nitrogen loss, especially cumulative effects is harder to directly control.</p>	<p>Allow submissions 180.80, 180.31</p> <p>Insert "average" in relation to annual nitrogen loss in the policy and the meanings for nitrogen loss rates and targets.</p> <p>Refer to nitrogen loss in relation to crop rotations, and for completeness add meaning for 'crop rotation'.</p>

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	<p>Anthony Davoren, paragraphs 11- 16</p> <p>Mr Davoren seeks deletion of clauses (c) and (d).</p> <p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, page 14 and Stuart Ford, paragraphs 96-97</p> <p>They seek addition to 'average' in relation to modelled annual nitrogen loss, and reference to crop rotations</p> <p><u>Submitter 120, NKII</u> Grey Wilson, paragraph 68</p> <p>Ms Grey seeks strengthening of the policy and rules and addition of a nitrogen cap.</p>	<p>The section 42A Hearing Report did not consider allowances for increasing N loss in areas where N concentrations met or exceeded the target attribute state, nor did it consider allowing increases in N if other contaminant loss was reduced, given the overall direction to maintain or improve water quality.</p> <p>The section 32 and 42A reports also did not consider a land use change rule to regulate all contaminants.</p>	<p>I note that the NES for Freshwater Regulations 2020 address land conversions and contaminants generally but are interim provisions until 2025 and that the regulation was aimed at risk of contaminant loss from a very narrow range of land uses and originated from the concerns about N loss from dairying.</p> <p>TANK POL 21 Clause (c) allows for innovation and flexibility. It allows for mitigation measures to reduce N loss that cannot be modelled by Overseer to be taken into account when assessing impacts of land use change and which would support land use change (especially at a catchment scale). I recommended that it be retained.</p> <p>I agree that nitrogen loss can vary from year to year, especially for commercial vegetable growing which relies on crop rotation. Insertion of 'average' in TANK POL 21 is recommended.</p> <p>TANK POL 21 Clause (d) enables the Council to ensure that water quality is maintained or improved as a result of land use change. It provides a strong direction that land use change must be within the environmental limits being set by this Plan.</p>	
Schedule 29 Rules TANK 5 and 6	<u>Submitter 54, Apatu Farms</u> Anthony Davoren, paragraph 36ff	Section 42a Hearing Report recommended changes to complex model based	Changes to the Schedule were recommended to address issues with complexity, uncertainty, Overseer limitations	Allow in part submissions seeking clarity for land use change including

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	<p><u>Submitter 193, Heinz Watties</u> Anthony Daveron, paragraph 26ff</p> <p><u>Submitter 66, NIS</u> Anthony Daveron, paragraph 16ff</p> <p>Mr Daveron does not support new thresholds for consent for land use change or Schedule 29. He notes the rule cascade from TANK 5 to TANK 6 leads to capturing all land use change</p> <p><u>Submitter 180, Horticulture NZ</u> Stuart Ford, paragraph 98-101</p> <p>Mr Ford does not support the recommended changes to Schedule 29 and prefers the notified version</p> <p><u>Submitters 29,194,208, 238, Winegrowers</u> Mark St Clair, paragraph 116</p> <p>Mr St Clair supports the new Schedule and rule thresholds.</p> <p><u>Submitter 135, Ravensdown</u> Carmen Taylor, page B19</p> <p>Ms Taylor supports the new Schedule.</p> <p><u>Submitter 195, Federated Farmers</u> Rhea Dasent, paragraph 39</p>	<p>approach to setting thresholds for consent related using a risk-based approach, with two activities (winter grazing and irrigation) acting as a proxy for risk.</p> <p>The policy specifically allows mitigation measures that may not be able to be modelled to be accounted for.</p> <p>The nuances of acknowledging different N-loss within and between farming systems that was provided in the previous version are traded off for a much more streamlined resource consent trigger based on generic N loss data and a 10 ha threshold. The recommended approach reduces complexity and concerns about sources of data and methods of calculation, including use of Overseer to trigger a consent requirement and interpretations. It serves as a trigger for council oversight when risks of</p>	<p>and costs. I agree the recommended changes overly smooth the variations between and within farm systems. However, the rule was intended to provide a threshold of change that requires Council oversight and it takes a risk-based approach based on a generic assessment of loss risk from farm systems. Apart from distinguishing between collective management, any land use change from one level to a higher level is subject to a restricted discretionary consent – even if the risk of increased loss is low (and the section 42a Hearing Report para 813 recognises the trade-off).</p> <p>I agree that irrigation does not necessarily lead to increased nitrogen losses and can, for some changes, lead to reduced risk of contaminant losses.</p> <p>I therefore recommend including provision for a controlled activity pathway that reduces costs and uncertainty in situations where the land use change does not have significant nitrogen losses.</p> <p>This is to allow for land use changes between the levels in Schedule 29 that are low risk land use changes – but would require some assessment and modelling to confirm. I have suggested a 10% change in modelled N loss as an acceptable threshold. This loss does not account for attenuation that will reduce the impact of this loss on the receiving environment.</p>	<p>185.64 and many others, 193.2, 54.4, 54.9, 66.17, 180.69, 197.10</p> <p>Insert new condition in TANK Rule 5: “The change in modelled average annual N loss as a result of the land use change is less than 10% (using Overseer or an alternative nutrient budget model approved by the HBRC)”.</p> <p>Amend TANK Rule 6 to refer to land use change from low to high leaching risk (not all land use change).</p> <p>A small amendment to the Schedule 29 Table heading and make separate reference to irrigation land use as an activity with variable risk.</p> <p>Delete reference to “the property’ in matter 3 of Rule 5.</p>

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	<p>Ms Dasent supports the new Schedule 29.</p> <p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, page 46</p> <p>Mr Dooney suggests deletion of reference to 'property' in the matters for Rule 5.</p> <p><u>Submitter 197, Beef & Lamb</u> Tom Orchiston, paragraphs 119 – 124</p> <p>Mr Orchiston considers irrigation is not a good proxy for risk.</p>	<p>increased loss become potentially more significant.</p>	<p>An alternative approach is to insert a new permitted activity rule for land use change between lower to higher levels in Schedule 29, provided the modelled annual average N loss is less than 10%. This reduces transaction costs to landowners and addresses some of the concerns raised by Mr Davoren, and potentially Mr Ford. However, monitoring and compliance for this option results in more costs to Council. Ensuring compliance (especially if compliance is after the fact and where there has been incremental land use change over time) is more challenging and places more onus on the Council. Tracking land cover change by satellite imagery is relatively straightforward, compared to tracking land use change.</p> <p>I consider an amendment is required in TANK 6 so that all land use change is not captured inadvertently.</p> <p>Matter 5 allows for consideration of mitigation measures to reduce contaminant loss – but is limited to the subject property. Given this rule contemplates collective action at a catchment scale, it is reasonable to widen the location of potential mitigation measures. Note also the reference to TANK POL 61 regarding greenhouse gas emissions.</p>	
<p>Schedule 26/27</p>	<p><u>Submitter 197, Beef & Lamb</u> Dr Greer, paragraph 22ff</p>	<p>The section 42 Hearing Report included the</p>	<p>I refer to Dr Haidekker's assessment of evidence on the attribute states in Schedule</p>	<p>Allow in part submission 197.2, 197.3.</p>

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	<p>Dr Greer seeks a number of changes to Schedule 26 including removal of cyanobacteria and macrophyte attributes and seeks amendments to periphyton and MCI provisions, and considers the recommended DIN and DRP provisions to be flawed.</p> <p><u>Submitter 210, Forest and Bird</u> Thomas Kay, paragraph 70-71</p> <p>Mr Kay seeks addition of a new attribute for habitat quality.</p> <p><u>Submitter 132, Te Taiwhenua o Heretaunga</u> Maurice Black, paragraph 222 and Marei Apatu, page 14 III</p> <p>Mr Apatu seek mauri inserted as a critical value or key value for Karamū and Ngaruroro waterbodies.</p>	<p>technical memo by Dr Haidekker which described in detail the recommended changes to the Schedules 26 and 27.</p> <p>The habitat quality attribute was considered but not recommended for inclusion.</p> <p>Cyanobacteria is a community concern and impacts on animal and potentially human health.</p> <p>The section 42A Hearing Report discusses critical values as those which are the most sensitive to the attribute state. In addition, there is information available to establish thresholds for meeting the needs of those values. In adopting attribute states for the critical value, all of the other values will be provided for.</p> <p>The section 42A Hearing Report refers to the alert level triggers that are relevant for implementing</p>	<p>26. I agree with her findings and recommend that changes to reflect the long-term aspirations of the TANK Group for lowland tributaries MCI are made.</p> <p>I also concur with Dr Haidekker that the Schedule needs to continue to refer to macrophytes. Macrophytes, particularly in the Karamū lowland tributaries are a known and significant environmental stressor and the Plan contains a number of provisions aimed at managing that.</p> <p>I agree with Dr Haidekker's assessment of the DRP and DIN challenges. I also agree with her pragmatic response to levels of current science knowledge as well as responding to the concerns regarding algal proliferation, management of nutrient losses to the estuary and an integrated approach to ecosystem health. I refer also to Ms Madarasz-Smith's evidence in relation to the freshwater inputs into the estuaries and the need to manage contaminant loads to protect ecosystem health.</p> <p>PPC9 takes an outcomes-based approach that enables local solutions and measures to be adopted that address the key environmental issues. At the same time the Plan considers and accounts for the cumulative effects of contaminant loss to fresh and estuary receiving waters. Mr Greer</p>	<p>Amend in Schedule 26 the long-term state for MCI in lowland tributaries to be 'good' at 110 and consequentially amend the other MCI attributes.</p> <p>Insert into Schedule 26 a note for all cyanobacteria entries; 'The target attribute state for cyanobacteria is applicable only in relation to TANK POL 16 and any exceedance will trigger an alert level response by Council ((from the MfE Alert-level Framework: NZ Guidelines for cyanobacteria in recreational freshwaters)').</p>

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		TANK POL 16. Ref para 1148-1153.	<p>at para 93 raises concerns about other regional planning processes failed attempts to establish a correlative endpoint between nutrient and a range of biotic endpoints. In my opinion these failures will often arise because of the consequential impacts of using those nutrient thresholds to establish the regulatory framework, including nutrient limits and contaminant loss targets at a property or farm system scale, the costs associated with those measures and the narrow focus on contaminant management that result from these approaches.</p> <p>PPC9 avoids that debate by adopting a wider ki uta ki tai, ecosystem health approach and one that looks at identifying the key risks and focussing on effective mitigation opportunities and the regulatory framework enables progress to be made in a targeted and efficient manner.</p> <p>The term “critical value” might have been interpreted by some submitters as meaning the most important value – however, it is the value that is most sensitive to the attribute state. It should not be seen as conferring any more importance to that value. In addition, there must be information criteria or thresholds that enable the needs of that values to be assessed in relation to the attribute state. There is no information to establish what state the attribute must be in</p>	

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			<p>order to meet the needs of mauri. In comparison, Uu is a primary contact activity and value and therefore can be aligned with thresholds for protecting human health.</p> <p>The previously recommended amendment in relation to noting the alert level function for the cyanobacteria attribute still needs to be made. The concern about the further development of national guidance is noted, but along with the recommended changes in Schedule 26, I recommend the retention of the cyanobacteria attribute until national direction is provided.</p> <p>The suggested additional attribute for habitat quality considers mainly morphology of the river rather than a more comprehensive ecosystem quality assessment and Mr Kay appears to be primarily concerned with the management of activities in the beds of rivers such as those carried out to manage flooding and erosion risks. These activities are not the focus of the Plan change and while managing river form and function is essential for implementing the NPSFM I consider the use of tools such as the HQI could be more appropriately left to the wider plan review to be conducted as part of the Council's Kotahi programme than included in PPC9 at this late stage.</p>	
Schedule 28	<u>Submitter 180, Horticulture NZ</u> Catherine Sturgeon, paragraph 45ff	Refer to the section 42A Hearing Report at section	See the technical evidence by Dr S Haidekker for more detail.	Allow in part submission 180.68.

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	<p>Ms Sturgeon suggests replacement of priority maps to include, DRP and align TN with SOE data.</p> <p>Ms Sturgeon is concerned about a focus on N and seeks that more attention needs to be given to sediment, phosphorous and E.coli with new priority maps being produced for them. Ms Sturgeon also suggests changes to the TN priority maps.</p>	<p>14.2 which explains the overall management approach and meeting targets and objectives using a priority approach (places, pathways, practices). TANK OBJ 5 and TANK POL 2 – 5 further direct management to priority management approaches specific to those water bodies.</p> <p>Schedule 30 further directs FWFPs to attend to all contaminant sources and key mitigation measures. N management was identified as a particular concern to the wider community throughout the TANK process.</p> <p>Amendments to clarify the priority areas in Schedule 28 were made but need further clarification.</p> <p>Priority based on E.coli was not included or assessed in the section 42A Hearing Report.</p> <p>Further explanation about the basis for the priority</p>	<p>The (perceived) focus on N possibly arises from the land use change rule and the manner in which priority catchments were derived. Neither is intended to detract from the need to manage all contaminant sources (as particularly indicated by TANK OBJ 5.)</p> <p>The priority maps were developed to manage the resourcing implications for meeting water quality objectives and have adopted a risk-based approach to manage sources of contaminants using modelling data not SoE data as described in the technical evidence by Dr Sandy Haidekker. I agree that phosphorous management is necessary in TANK catchments and this is partly addressed in PPC9 by prioritising pathways (where P is part of sediment loss) and also through policy direction and Schedule 30 that requires all contaminant loss risks to be addressed). I also agree that pathways for all contaminants do not necessarily overlap everywhere, including in relation to tile drains.</p> <p>A phosphorous focus could be better provided for by including priority areas based on total phosphorous, although the limitations of modelling mean we cannot assess tile drains as a phosphorus source. A new TP map has been prepared to show where there would be priority because of</p>	<ol style="list-style-type: none"> 1. Amend TN Priority Maps 3 to align with Schedule 28 thresholds. A new Planning map for TN Yield is contained in Appendix 2 2. Insert new Schedule 28 Planning Map showing the priority catchments for total phosphorous A new Planning map for TP Yield is contained in Appendix 2. <p>In Schedule 28: Add reference to modelling at the end of item 2</p> <ol style="list-style-type: none"> 3. Delete “to the estuary’ in item 3 4. Insert new Schedule 28 Planning Map for TP 5. Insert new item 6 for TP 6. Insert new line for TP priority in the Table in Schedule 28.

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		<p>mapping should have been provided.</p> <p>See below also for assessment of the sediment priority area maps.</p> <p>I note an error was made in Schedule 28 for the thresholds used for TN. These had been updated during preparation of the maps but the Schedule was not also updated. I apologise for the confusion and additional work this has entailed for the submitters.</p> <p>I note with respect to paras 98 – 102 that while the priority maps do not show current water quality, the development of FWFPs, Industry programmes and Catchment Collective plans will depend on understanding local water quality state and to that end Council must ensure that information is readily available and work with stakeholders to ensure it is</p>	<p>phosphorous loss risk. This map is attached to my evidence.</p> <p>I concur with Dr Haidekker in proposing that this map is based on a modelled TP loss map that is consistent with the TN and sediment loss risk approach. This ensures a single contaminant approach is avoided when considering priority management areas and looks at likely sources (ref also to evidence at para 15 - 22 180-/2). Note that the priority catchment approach signals the need for a FWFP, which must then adopt an all contaminants management approach (including E.coli where local conditions require it).</p> <p>Much of the TP priority area aligns with the sediment loss risk areas so doesn't impact greatly on the resourcing needed for Plan implementation.</p> <p>I also concur with Dr Haidekker's evidence about the value of the TN concentration priority map and that the TN yield map provides sufficient direction to manage the areas where there is a higher risk of nitrogen loss. I recommend that the Schedule 28 Planning Map 2 is therefore deleted.</p> <p>Note that at para 3.1 of Dr Haidekker's evidence, she notes an inconsistency between thresholds and the TN yield priority</p>	

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		<p>communicated at a property scale.</p>	<p>map. A new map based on the thresholds in Schedule 28 has been produced (attached to my evidence as new Planning Map 1) and I recommend that it be used instead of the notified version. The impact of this change is on the priority 2 areas, which are reduced in area.</p> <p>A priority map for E.coli is not recommended as this contaminant is not a widespread issue across all catchments. Also, the focus on riparian land management and stock exclusion supports the pathways priority approach.</p> <p>I agree with Ms Sturgeon (see 180/2 para 98-105) that it would help landowners if there is a summary priority catchment map and an overlay of water quality information, but I consider this is an important part of plan implementation rather than through further planning maps.</p> <p>Schedule 28 requires further clarification to show that priority is based on source risk and modelling for total nutrients. See also recommended amendments to the sediment yield priority area below.</p>	
<p>Schedule 30 Freshwater Farm Plans</p>	<p><u>Submitter 197, Beef & Lamb Tom Orchiston, paragraph 107</u></p> <p>Mr Orchiston seeks protection of confidential data.</p>	<p>The section 42A Hearing Report discusses FWFPs and the regulatory requirements for them in section 14.5.</p>	<p>Schedule 30 sets out both that</p> <p>a) a FWFP is to be prepared and submitted to Council to ensure it meets the Schedule requirements and</p>	<p>Allow in part submissions 197.7, Amendment Schedule 30 to clarify information requirements.</p>

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	<p><u>Submitter 120, NKII</u> Grey Wilson, paragraph 75</p> <p>Ms Grey seeks deletion of references to FWFP provisions.</p>	<p>Security and confidentiality of data wasn't addressed</p>	<p>b) the information to be submitted to Council (although I recommended some small amendments to make this clearer).</p> <p>The data being sought is linked to mitigation measures and adoption of good industry practice, not farm production statistics or confidential information. The format is still to be defined by Council, but there is sufficient direction to understand the requirements.</p> <p>Section D of the Schedule also describes auditing and reporting by Council. It expects Council will report on delivery and implementation aspects of Farm Plans but not their full content.</p>	
<p>Schedule 30 Catchment Collectives</p>	<p><u>Submitter 180, Horticulture NZ</u> Catherine Sturgeon, paragraphs 95-97</p> <p>Ms Sturgeon seeks further refinement of the scale at which catchment collectives can operate.</p> <p><u>Submitter 197, Beef & Lamb</u> Gerry Kessels, paragraph 57</p> <p>Mr Kessels suggests reference to conflict resolution for catchment collectives</p> <p><u>Submitter 120, NKII</u></p>	<p>The section 42A Hearing Report did not address this directly although it does address flexibility in paras 888/889.</p> <p>The section 42A Hearing Report does not refer to this issue except in relation to the policy.</p>	<p>Schedule 30 could be improved to describe membership of a catchment collective.</p> <p>While provided for in policies, it is not separately referred to in Schedule 30. The Schedule could also be improved by reference to conflict resolution.</p>	<p>Allow in part submission points 180.10, 180.11, 197.9</p> <p>Insert reference to property in respect of membership of a collective in Schedule 30 and clarify reference to the applicable catchment.</p> <p>Insert reference to the conflict resolution.</p>

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	<p>Grey Wilson, paragraph 75</p> <p>Ms Wilson seeks deletion of references to FWFP provisions</p>			
<p>TANK POL 24</p> <p>Schedule 30 Industry Programmes</p>	<p><u>Submitters 29, 194, 209,238, Winegrowers</u></p> <p>Edwin Massey, paragraph 96</p> <p>Mr Massey seeks that the Plan accurately recognises transaction costs and to better align industry programmes auditing requirements with TANK requirements. That industry reporting includes water use.</p> <p><u>Submitter 180, Horticulture NZ</u></p> <p>Damien Farrelly, paragraphs 93, 96</p> <p>Mr Farrelly seeks amendments to TANK POL 24 (iv) in so that progress on progressive implementation of FWFPs plans is reported to Council, and not on the implementation of the mitigation measures or progress to meeting water quality targets.</p> <p>Mr Farelley seeks amendments to Schedule 30 for industry programmes in respect of auditing and reporting.</p> <p><u>Submitter 120, NKII</u></p>	<p>The efficiencies and administrative benefits of working collectively or building on industry programmes are recognised in the section 42A Hearing Report.</p>	<p>I agree that the SWNZ (Sustainable Winegrowing NZ) programme can form the basis of an industry programme that is compliant with PPC9 requirements and that opportunities exist to enable this. I am not sure what is being sought in relation to requests for 'equivalence' and further evidence may be required to elaborate on the particular problem. An acceptable industry programme needs to meet the requirements set out in the Schedule and it is apparent that the SWNZ is able to meet the requirements with some adjustments.</p> <p>I consider it reasonable to allow for targeted auditing depending on level of risk. Note that while an audit process is required along with an annual report, this does not require auditing of every property every year. I consider this element needs to be addressed upon application to the Council for approval of the Industry Programme. It may be an area where 'equivalence' is further determined.</p> <p>The Schedule does not specify the kind of information to be collected and reported to Council or the format in which this is to be</p>	<p>Insert into Schedule 30 Section C a requirement for information to be collected and reported to council in a format to be specified by Council in consultation with the industry group.</p> <p>Amend the auditing requirement in Schedule 30 so that it allows for less frequent auditing for low risk land use systems and TANK POL 24 so that it enables third party auditing.</p> <p>Submission points 180.33 and 180.70 give scope for this amendment (Hort NZ's submission on TANK POL 24 and Schedule 30). Also submission point 29.49 (HBWG).</p>

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	<p>Grey Wilson, paragraph 75</p> <p>Ms Grey for NKII seeks deletion of references to FWFP provisions.</p>		<p>done for industry programmes as it had been included in the notified version.</p> <p>This is an oversight as this requirement was previously included in Schedule 30. It is required to provide for the transparency and accountability being sought. I recommend that reference information requirements and report should be inserted into the Schedule with the format for any reporting to be specified by council in consultation with the Industry Group. This will allow Council to work efficiently with industry groups. This is despite the evidence of Farrelley (180/3 para 93) as reporting on information about the implementation of the key mitigation measures and milestones is a key component of the plan. I consider that Schedule 30 provides sufficient direction to understand what is required.</p> <p>The focus of the FWFPs is on contaminant management. In contrast water quality is managed through resource consent conditions and the obligations on permit holders are specific. I cannot see any reason why the industry cannot work with permit holders and the council to co-ordinate water use reporting, although it is potentially complicated by a range of reporting requirements across different consent conditions. I suggest this is a topic for</p>	

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			further discussion between industry groups and the Council.	
Schedule 28 Schedule 30 and Priority Catchments Map 1	<p><u>Submitter 180, Horticulture NZ</u> Catherine Sturgeon, paragraphs 48 – 60</p> <p>Ms Sturgeon seeks greater emphasis on hillslope erosion and suggests remodelling sediment loss priority areas to exclude riverbank sediment losses. Sturgeon also suggests reference to hill slope erosion in Schedule 30.</p>	<p>This issue is not directly addressed in the section 42A Hearing Report.</p> <p>However, we do have new data based on upgrades to the SedNet model.</p>	<p>Ms Sturgeon's evidence in 180/2 para 51 – 60 provides alternative approach to defining the priority areas for sediment loss which discounts the losses from riverbank erosion. While I agree that some riverbank and gully erosion will not be able to be managed by landowners (because of the scale and natural erosion processes and as described further by Dr Lynch in his evidence) there is some riverbank erosion where actual and potential erosion could be managed at a property scale. I recommend continuing with all the modelled sediment sources as the basis for the sediment priority. Future versions of SedNet will be able to further distinguish erosion types. In the interim I recommend reference to sediment loss management where it is within the means of landowners to manage. I acknowledge that the priority map will indicate management in areas where it cannot be managed but consider this is less significant than omitting areas where sediment loss can be managed.</p> <p>I advise that new SedNetNZ information is available as outlined in the evidence by Dr Barry Lynch. I recommend that this be used to amend the priority maps as being the best available information.</p>	<p>Schedule 28: Replace the Sediment Yield Planning Map 1 with a new map based on updated SedNet information. This Schedule 28 Planning Map 1 is contained in Appendix 2.</p> <p>Schedule 30 Section A: Separate clause 2.2 (c) (iv) into two clauses with the first ended at 'specified in TANK Pol 11.'</p> <p>Inserting at the end of the next clause: "and soil loss from hill country erosion where this can be managed by landowner mitigation"</p> <p>Re- number as necessary.</p> <p>Submission point 180.68 gives scope for this amendment (in relation to nutrients selected in Schedule 28 and requests they are linked to submissions on objectives and policies of the Plan).</p>

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			<p>The SedNetNZ upgrade has altered some sediment loss predictions. These changes have led to a change in the thresholds in order to provide a priority action regime for high to low priority management action distributed evenly across the catchment (in combination with the other priority areas). This is further explained by Dr Lynch. I recommend using the priority catchment areas shown in his evidence as Appendix 1.</p> <p>Schedule 30 refers to mass movement of soil in section A2.2 but explicit reference to hill country erosion (which includes land slide, surficial and gully erosion and earthflow) could be included for completeness. Other soil loss processes (including loss or movement of soil into water) are already included.</p>	
Glossary	<p><u>Submitter 135, Ravensdown</u> Carmen Taylor, Section 8</p> <p>Ms Taylor seeks that the meanings for farm plan be aligned with the RMA direction And that the meaning for nitrogen loss target be adjusted</p> <p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, page 44</p>	The section 42A Hearing Report sought to align terminology.	<p>Appropriate to update glossary regarding farm enterprise which is no longer a term used in the plan.</p> <p>I agree that the RMA meaning for 'farm' is a rather convoluted one, but that it better and more fully describes all the productive land use activities being managed by the Plan. I don't agree that the additional NESFM option for 'farm' as 'a landholding whose activities include agriculture' is sufficiently comprehensive and begs the question as to whether horticulture is included.</p>	<p>Allow submissions 135. 180.10, 180.11 135.1, and allow in part submissions 180.9.</p> <p>Amend Farm Environment Plan meaning to refer to Freshwater Farm Plan and remove brackets from nitrogen loss target.</p>

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	Mr Dooney notes the various meaning for farm in the NESFM and RMA			
	<p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, paragraphs 78-79</p> <p>Mr Dooney seeks meaning for Farming Enterprise be retained</p>	Paragraph 933 in the section 42A Hearing Report refers to alignment with national regulation, but did not specially refer to farming enterprises.	It is a consequential amendment to delete the meaning for 'farming enterprise', which is no longer used in the Plan. However, for clarity, I recommend adding to the end of the definition reference to where a farming enterprise comprises leased and owned land to satisfy concerns by Mr Dooney.	<p>Allow in part submission 180.82.</p> <p>Delete 'farming enterprise' from the glossary but refer to parcels held in single or multiple ownership with the meaning for farm.</p>
	<p><u>Submitter 180, Horticulture NZ</u> Stuart Ford, paragraph 106</p> <p>Mr Ford seeks a definition for Nitrogen Budget.</p>	Not addressed in the section 42A Hearing Report.	The term is used in the Plan and Mr Ford explains how a budget could be used differently for a single crop in a whole of farm approach. I accept that a definition that reflects this will be useful.	<p>Insert definition for nutrient budget.</p> <p>Submission 180.55, 56 and 69 provide scope for this amendment.</p>
	<p><u>Submitter 180, Horticulture NZ</u> Andrew Dooney, page 10 and 62</p> <p>Mr Dooney seeks meaning for flushing flow to be added.</p>	Not addressed in the section 42A Hearing Report.	<p>Flushing flows are higher river flows (small floods or freshes) that have the ability to flush fine deposited sediment (sand and silt) from the river bed and are sometimes called surface flushing flows. The movement of this sediment also erodes algae from the larger gravels, cobbles and boulders (substrate) leaving a "clean" river bed. Biggs et al. (2008) considered that flows usually in the range of 3-6 times the median flow or baseflow were necessary for flushing.</p> <p>The definition suggested by Mr Dooney unnecessarily links the definition to a specific flow statistic, which may be useful, but restrictive as it narrows the meaning of flushing flow which may alter depending on</p>	<p>Allow submission 180.27.</p> <p>Insert meaning for flushing flow.</p>

Topic	Submitters' evidence	Section 42A Hearing Report summary of findings	Discussion	Recommendation
			context. I suggest an alternative more general meaning.	
RRMP consequential amendments	<p data-bbox="398 376 813 435">Submitter <u>120, NKII</u> Grey Wilson, paragraph 37</p> <p data-bbox="398 472 813 531">Ms Wilson seeks deletion of an RRMP objective.</p>	Not addressed in the section 42A Hearing Report.	The amendments to the existing RRMP consequential on the notification of PPC9 included deletion of the reference to the Heretaunga Plains aquifer from RRMP Obj 42. This was because the management of groundwater including the Heretaunga Plains, in the TANK catchments is now included in PPC9. (The RRMP Obj 42 was previously amended to delete reference to the Ruataniwha aquifers with Plan Change 6). Now deleting reference to the Heretaunga Plains aquifer has left that objective mistakenly applying to the whole region which was not within the scope of PPC9. It is recommended that the entire objective be deleted from the RRMP as there are no groundwaters that it was intended to apply to.	<p data-bbox="1693 376 2103 435">Delete the remaining part of Objective 42 from the RRMP</p> <p data-bbox="1693 472 2103 499">Scope is provided by submission 120.</p>

Table 1C: Analysis on water quantity provisions

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
<p>Definition of Actual and Reasonable Use</p>	<p><u>29, 194, 208, 238 – Winegrowers</u> Dr Andrew Death, paragraph 27</p> <p>The evidence of Dr Death provides a reliability of supply analysis, comparing the 2012/13 and 2019/20 drought events. His analysis found that “the modelled demand in the 2019 – 2020 irrigation season was lower than the 2012-2013 season, and was equivalent to the 92nd percentile”.</p> <p><u>29, 194, 208, 238 – Winegrowers</u> Mark St. Clair, paragraph 85</p> <p><u>180 – Horticulture NZ</u> Andrew Dooney, paragraph 139 and Gillian Holmes, paragraph 102</p> <p>Support retention of ‘maximum’ rather than ‘average’.</p>	<p>Changes to the definition of Actual and Reasonable are discussed in paragraphs 2063-2064. I recommend that the ‘effective date’ of an Actual and Reasonable assessment be changed from the 10 years preceding August 2017, to the 10 years preceding May 2020. I also recommended replacing the word ‘maximum’ with ‘average’ to reflect that providing users their maximum annual use from the 10 years preceding May 2020 would include the higher usage in 2019-2020 drought year and not enable implementation of POL TANK 37 based on much higher water usage in the 2019-2020 year (Figure 12, Appendix 11, Technical Memo Water Quantity).</p>	<p>Dr Kozyniak demonstrates that rainfall during the 2012-13 and 2019-20 irrigation seasons sit within the lowest 5th percentile and, as a proxy for demand, are likely to represent requirements for 95% reliability of supply (paragraph 6.2).</p> <p>Revised analysis of estimated total annual water use from the Heretaunga Plains Aquifer undertaken by Mr Waldron indicates that the total water use was 91.1 Mm3/yr in 2012-2013 and 82.5 Mm3/yr in 2019-2020 (paragraph 3.12).</p> <p>Based on the evidence of Mr Waldron and Dr Kozyniak, I am comfortable that enabling the re-allocation of a permit holder’s maximum annual use in the ten years preceding 2 May 2020 will align with POL TANK 47(c) and support implementation of POL TANK 37.</p>	<p>I recommend rejecting the consequential amendment I recommended in the section 42A Hearing Report to amend ‘average’ to ‘maximum’ in the definition of Actual and Reasonable.</p> <p>This amendment can be seen in Appendix 2A.</p>
<p>Definition of Actual and Reasonable use</p>	<p><u>180 – Horticulture NZ</u> Gillian Holmes, paragraphs 106-107</p> <p><u>54 – Apatu Farms</u> Anthony Davoren, paragraphs 13-14</p> <p><u>193 – Heinz Watties</u></p>	<p>The section 42A Hearing Report does not consider extending the period over which metered water meter data could be considered when assessing Actual and Reasonable use.</p>	<p>Dr Kozyniak’s evidence demonstrates that the 10 years preceding 2 May 2020 includes two irrigation seasons which equate to drought years which are within or close to the 5th percentile of long-term records (paragraph 4.2). I understand this to mean the 10 years preceding 2 May 2020 is an</p>	<p>I do not recommend further changes to PPC9. I consider the 10 year timeframe is appropriate based on the evidence of Dr Kozyniak.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>Anthony Davoren, paragraph 18</p> <p>Do not agree with the length of water meter record specified in definition or consider longer length of record will better define the 95th percent reliability of supply.</p>		<p>appropriate timeframe for considering water use required to meet 95% reliability of supply.</p>	
POL TANK 50(a)	<p><u>82 – Lowe Corp</u> Gerard Willis, paragraph 45</p> <p>Mr Willis states that POL TANK 50(a) “implies that future community growth is dependent entirely on growth within the areas identified by HPUDS.”</p> <p>[HPUDS is the Heretaunga Plains Urban Development Strategy]</p>	<p>I do not recommend changes to sub-clause (a). Discussion in paragraphs 1634-1638 of the section 42A Hearing Report, which are relevant to POL TANK 50(a), focus on water allocation, rather than the areas identified by HPUDS2017 to accommodate population and urban development growth.</p>	<p>I agree that the current wording of POL TANK 50 could be understood to limit growth areas to those identified in HPUDS2017. The purpose of POL TANK 50 is to limit water allocation volumes to population and urban development projections estimated in HPUDS2017. New information may mean that to ensure the most efficient and effective use of NCC and HDC water allocations, growth could occur in areas other than those identified in HPUDS 2017.</p>	<p>I recommend accepting submission point 63.52 and amending POL TANK 50(a) as shown in Appendix 2A.</p>
Provision for some permit holders to increase actual water use	<p><u>82 - Lowe Corp</u> Gerard Willis, paragraphs 35-65</p> <p>Mr Willis considers regionally significant infrastructure should be able to expand.</p> <p><u>63 and 207 – NCC and HDC</u> Annette Sweeney, paragraphs 11-12, 21-30</p> <p>Ms Sweeney considers NCC and HDC should be enabled to increase</p>	<p>I provide an overview of the allocation framework and discuss the four key mechanisms PPC9 utilises to address over-allocation and the adverse effect of over-allocation in paragraphs 1198-1222.</p> <p>I discuss urban growth, use and efficiency and the NPSUD2020 in paragraphs 1233-1239.</p>	<p>I do not consider the limitations of the resource will expand to meet demand, therefore all human water uses must be managed within the limits of the resource.</p> <p>While Mr Willis considers that increases in water usage is not in itself contrary to the NPSFM2020, he does acknowledge that in order for some users to increase their use, others must “take a bigger ‘hit’” (paragraph 69). He does not specify which users should take this ‘hit’.</p>	<p>I do not recommend further changes to PPC9 as I agree with my comments in the section 42A Hearing Report.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	allocations in order to give effect to the NPSFM2020.		I consider the approach provided by PPC9 is an effective and efficient way of avoiding and phasing out over-allocation which balances multiple competing uses, and addresses the cumulative adverse effects of over-allocation.	
Transfer between HDC and NCC municipal supplies	<p><u>63 and 207 – NCC and HDC</u> Annette Sweeney, paragraphs 45-46</p> <p>Ms Sweeney explains the rationale for enabling transfers between NCC and HDC and considers Condition (i)(iii) of Rule 62a is unnecessarily limiting. She supports relief which would enable transfers from any use to municipal supply to not be considered as a change in use.</p>	I recommend re-wording POL TANK 48 to be a clearer list of matters for consideration which I consider covers the matters included in the policy as notified (paragraph 1594). I note an error in the section 42A Hearing Report where the Rule 62a matters for Control/Discretion were incorrectly replaced. I did not recommend changes to the Matters for Control/Discretion so these remain as notified.	I consider that Rules 62a and 62b align with POL TANK 48 which relates to transfers, however I agree that a transfer between municipal uses should not be considered a change. I consider that transfers from other uses (i.e. irrigation) should be considered as a change in alignment with POL TANK 48 to ensure alignment with the NPSFM2020 hierarchy of obligations and that all relevant conditions are considered.	I recommend accepting submission points 63.31 and 207.33 in part and including an advice note in Rule 62a which ensures changes from any municipal use to another municipal use is not considered a transfer.
Versatile soils or versatile land	<p><u>29, 194, 208 & 238 – Winegrowers</u> Mark St. Clair, paragraph 62</p> <p>Mr St. Clair suggests amended wording to reduce confusion around the different use of the terms “versatile soils” and “versatile land” in OBJ TANK 16(c).</p>	I do not recommend amendments to OBJ TANK 16(c) because I considered that the definition of versatile land in the RRMP glossary already includes highly productive viticulture soils (paragraph 1277).	I consider that my analysis in paragraph 1277 of the section 42A Hearing Report erred in the fact that the RRMP glossary definition is for “versatile land”, not “versatile soils”. It would provide greater consistency and improve the clarity of the plan to use one term consistently through PPC9 and the RRMP.	I recommend accepting in part submission point 29.7 and 33 other submission points that seek the same or similar relief, and amending OBJ TANK 16 to refer to ‘versatile <u>land</u> ’.
Zone 1 and stream flow maintenance	<p><u>29, 194, 208 & 238 – Winegrowers</u> Mark St. Clair, paragraphs 72-75</p>	I recommend replacing POL TANK 39, which relates to stream flow maintenance schemes, to more effectively	I consider it will improve clarity and consistency of the plan to amend POL TANK 45(d)(i) which requires applicants to contribute to applicable lowland stream	I recommend accepting submission points 29.25, 29.28, and 238.11 and amending POL TANK 45(d)(i) to clarify that cease take requirements

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>Mr St. Clair seeks amendments to POL TANK 45 to clarify that requirements to cease takes if not contributing to a stream flow maintenance scheme are only relevant if stream flow depletion schemes exist.</p> <p>He also identifies two shades of hatching denoting Zone 1 in Schedule 31C.</p>	<p>and efficiently achieve the objectives of PPC9 (paragraph 1429). I consider the matters raised by Mr St. Clair are consequential to changes to POL TANK 39.</p>	<p>enhancement programmes in accordance with POL TANK 39. I note the use of 'programme' instead of 'scheme' and recommend changes which provide greater consistency.</p> <p>Mr St. Clair is correct in his understanding that the two colours of hatching are to refer to Zone 1.</p>	<p>are applicable once schemes are operational in alignment with POL TANK 39(d). I also recommend correcting the colouring of the Zone 1 area in Schedule 31C.</p> <p>The amendments can be seen in Appendix 2A.</p>
Frost protection	<p><u>29, 194, 208 & 238 – Winegrowers</u> Mark St. Clair, paragraphs 109-113</p> <p>The discussion in Mr St. Clair evidence highlights that the drafting of POL TANK 11 as amended by the section 42A Hearing Report does not align with POL TANK 53.</p>	<p>I recommend that certain activities are listed separately so that the relevance and application of Schedule 31 to these activities can be determined by decision-makers in accordance with PPC9 policies (paragraph 1901).</p>	<p>I consider my discussion in paragraph 1901 of the section 42A Hearing Report conflates minimum flows and allocation limits. POL TANK 53 as notified ensures that minimum flows are considered as necessary while Rule TANK 11 as notified and as recommended by Mr St. Clair specify that Schedule 31 allocation limits are not relevant to takes for specific uses.</p>	<p>I recommend accepting submission point 194.47 in part and rejecting Hearing Report recommendations to amend rule TANK 11 b)(ii) and (iii). This amendment can be seen in Appendix 2A.</p> <p>Other amendments are recommended to POL TANK 53 in relation to other temporary water takes and non-consumptive water takes.</p>
Temporary dewatering for construction as a permitted activity	<p><u>203 - Oil Companies</u> Philip Brown, paragraphs 4.1-4.9</p> <p>Mr Brown provides background regarding the Oil Companies dewatering activities (paragraphs 4.1-4.4) and discusses the implications of the section 42A Hearing Report, namely that PPC9 does not provide a permitted activity pathway for dewatering activities</p>	<p>I considered that temporary dewatering was adequately provided by amendments relating to non-consumptive uses (Rule TANK 11, paragraph 1910), and that frost protection takes under POL TANK 53 were likely to have different effects than temporary takes for</p>	<p>Temporary dewatering groundwater takes for construction are not provided for as a permitted activity in the RRMP (Rule 53 limits daily takes to 20m³ and the rate of take to 10l/s without an exception for temporary dewatering takes), however, I agree that dewatering for construction should not be a prohibited activity and consider it appropriate to provide a consenting pathway for this use through Rule TANK 11.</p>	<p>I recommend accepting submission point 203.21 in part, accepting submission point 203.23, and adopting the recommended wording in POL TANK 53 and Rule TANK 11 (b)(i)iii.</p> <p>This amendment can be seen in Appendix 2A.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>and may not be in the scope of non-consumptive uses under Rule TANK 11, which could cause dewatering activities to be considered as a prohibited activity under Rule TANK 12.</p> <p>Mr Brown provides examples of other regional council permitted rules in Annexure 3 of his evidence.</p> <p>Paragraph 4.18 of Mr Brown's evidence highlights that amendments are also required to related policies to provide for temporary dewatering takes for construction (such as POL TANK 53 as requested in their original submission).</p>	<p>dewatering (paragraph 1694).</p>	<p>Based on Mr Brown's evidence, I consider amendments to POL TANK 53 appropriate in that the takes are for relatively short periods of time or temporary in nature but may have high rates of take. I note that while POL TANK 53 includes specific consideration of water quality, other water quality policies of PPC9 would be relevant in considering applications for temporary dewatering takes.</p> <p>Further pursuit of a permitted activity pathway may be more appropriately addressed in the Council's future plan review (Kotahi).</p>	
<p>Volumes for permitted activities, including for rootstock</p>	<p><u>180 – Horticulture NZ</u> Gillian Holmes, paragraph 90</p> <p>Ms Holmes supports root stock protection water being provided for as a permitted activity and believes restricting these takes to 20m³ p/d per property complies with the NPSFM 2020.</p> <p><u>180 – Horticulture NZ</u> Andrew Dooney, paragraphs 160-165</p> <p>Mr Dooney recommends amending Rule TANK 7 and 8 to specify a daily</p>	<p>I recommend points seeking a specific exemption for takes to assist the survival of horticultural crops are accepted in part because takes existing at 2 May 2020 may continue to take up to 20m³ per day. If takes to assist the survival of horticultural crops existed before 2 May 2020, then they may continue. If these takes did not exist before 2 May 2020 then they are</p>	<p>I consider it would improve clarity of PPC9 to specify take limits for permitted activities and clarify the linkage to existing takes under the RRMP.</p>	<p>I recommend accepting submission point 180.58 in part and amending Rules TANK 7 and 8 to more clearly account for the previously permitted water takes in RRMP Rules 53 and 54. The amendments can be seen in Appendix 2A.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>volume limit for water takes and identifies the criteria established by Section 3.17(2) of the NPSFM2020 (paragraph 164). He also points out that when Rules TANK 7 and 8 are read in isolation (i.e. without referring back to RRMP Rules 53) it is confusing and difficult to interpret that a limit applies.</p>	<p>subject to a 5m³ per day limit (paragraph 1848).</p>		
<p>Irrigation efficiency</p>	<p><u>66 – Ngaruroro Irrigation Society</u> Anthony Daveron, paragraphs 38-39</p> <p>Mr Daveron describes Application Efficiency (AE) and Distribution Uniformity (Du). He states that they must not be confused or used interchangeably. Mr Daveron states that AE is the most important and relevant term for PPC9.</p> <p><u>180 – Horticulture NZ</u> Andrew Dooney, Appendix 1, page 63</p> <p>Mr Dooney suggests definitions for application efficiency and distribution uniformity.</p>	<p>I requested submitters to provide further information on the difference between and the appropriateness of AE or DU (paragraph 1578) and recommended that term that is most appropriate be defined in the glossary of PPC9 (paragraph 2101).</p>	<p>It is clear from Mr Daveron's evidence that AE is considered to be the most appropriate term to use in POL TANK 47.</p> <p>The definitions provided by Mr Daveron and Mr Dooney refer to retention of water in the crop root zone "following an irrigation event <u>over the irrigation season</u>. Or in the target area, after an irrigation event." (Mr Daveron, paragraph 40), and "after an irrigation event <u>and/or for the irrigation season</u>" (Mr Dooney, page 63) (<u>emphasis added</u>). Irrigation New Zealand's definition does not include reference to the irrigation season¹.</p> <p>Without justification of why the definition should refer to the irrigation season as well as irrigation events, I am inclined to recommend a definition that aligns most closely to the Irrigation New Zealand definition.</p>	<p>I recommend accepting submission points 59.13, 59.41, and 66.49, accepting in part submission point 66.12, and rejecting submission points 59.15, 59.42, and 66.50.</p> <p>I recommend including a definition for Application Efficiency in the Glossary, but I do not recommend changes to POL TANK 47 because it already refers to application efficiency.</p>

¹ Irrigation New Zealand, New Zealand Irrigation Technical Glossary, page 3. https://www.irrigationnz.co.nz/KnowledgeResources/COP/Attachment?Action=Download&Attachment_id=47.

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
<p>Ngaruroro minimum flow</p>	<p><u>132 – Te Taiwhenua o Heretaunga</u> Maurice Black</p> <p>Mr Black discusses surface water from paragraph 191 of his evidence and discusses the existing minimum flow and allocation regime of the RRMP.</p> <p>Mr Black seeks that the Ngaruroro minimum flow is set at or amended in a staged manner to 4,200 l/s to achieve 90% habitat provision for trout (paragraphs 202-204).</p> <p><u>132 – Te Taiwhenua o Heretaunga</u> Marei Apatu, paragraph k, page 13</p> <p>Mr Apatu states that “Torrentfish MALF recommends 4700 lps to provide 100% survival and protection” and seeks a minimum flow of 3700 l/s for the Ngaruroro River.</p>	<p>Minimum flows for surface water bodies in the TANK catchments are specified in Schedule 31 of PPC9. I recommended amendments to the explanatory text of Schedule 31, but did not recommend changes to the allocation limits of minimum flows (paragraph 1520).</p> <p>The matters considered when setting minimum flows are discussed in Appendix 11, Technical Memo Water quantity, of the section 42A Hearing Report (Sections III.a and IV.d).</p>	<p>Mr Fake notes that increasing the minimum flow would not provide a significant increase in habitat protection for torrentfish (paragraph 4.8-4.9). Mr Waldron discusses the effect of minimum flows on the mean annual 7-day low flow (MALF) and Q95 low flow statistics, and demonstrates that raising the minimum flow would provide small improvements to low flows and increase the number of days on ban for irrigators (paragraphs 4.4-4.6).</p> <p>I consider the benefits to habitat protection of higher minimum flow are minimal but the costs could be significant. I do not consider increasing the Ngaruroro minimum flow is an efficient method of achieving the objectives of PPC9.</p> <p>I do not consider this is contrary to the NPSFM2020 hierarchy of obligations because PPC9 includes other methods to provide for water bodies and ecosystem health, such as reducing the Ngaruroro River allocation limit from 1581 l/s to 1300 l/s.</p>	<p>I do not recommend further changes to PPC9 based on the evidence of Mr Fake and Mr Waldron.</p>
<p>High flow allocation for Māori development</p>	<p><u>120 – Ngati Kahugnunu Iwi Incorporated</u> Grey Wilson, paragraph 96</p> <p>Ms Wilson considers it appropriate to remove POL TANK 56-58 from PPC9 because NKII consider that the process by which those provisions were developed was offensive and</p>	<p>I did not recommend significant changes to POL TANK 59 or 60 (see Sections 15.5.8-15.5.9).</p> <p>I discuss matters relevant to reform of the allocation regime proposed by PPC9 in paragraphs 1252-1253.</p>	<p>Many submitters are not supportive of POL TANK 59. Many submitters considered the policy should provide for the well-being of Hawke’s Bay generally, and some submitters sought amendments to the policy to enable allocation to specific people or entities.</p> <p>I acknowledge that NKII’s preference is to establish a new allocation regime where</p>	<p>I do not recommend further changes to PPC9 but I highlight these policies as matters the panel may like to explore further through the hearings process.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion	Recommendation
	<p>inadequate, and she notes that NKII seek a tangata whenua allocation to be provided for as part of a new allocation regime.</p> <p>I note that in paragraph 96 of her evidence, Ms Grey refers to POL TANK 56-58 however given the deletion to POL TANK 59-60 in Appendix 1 of her evidence, I take her discussion at paragraph 96 to refer to POL TANK 59-60.</p>		<p>tangata whenua are able to access 'low flow' allocations. Given the matters discussed in paragraphs 1252-1253 of the section 42A Hearing Report, I do not consider this can be provided for in PPC9.</p> <p>To date, resources under the RMA are generally allocated on a 'first-in, first-served' basis. The provision of this policy is intended to ensure that historical injustices are not perpetuated through the creation of a 'new' allocation. I consider it is worth retaining POL TANK 59 and 60 in order to avoid a situation where Māori are disadvantaged and excluded by the management of natural resources.</p>	

Table 1D: Analysis on stormwater management provisions

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
TANK POL 28	<p><u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 84 a) and 85</u> <u>Submitter 203, Oil Companies, Phillip Brown</u></p> <ol style="list-style-type: none"> 1. Evidence of Ms Sweeney requests to add the words 'or extents' to clause f) in order that site specific constraints to be taken into account include both source protection zones and source protection extents 2. Also requested to add the words 'where necessary' at clause d) when requiring detention and retention of stormwater as the need to hold off water at some sites is not always required 3. Evidence of Mr Brown seeks to include reference to industry best practice and guidelines in TANK Pol 28 	<p>A number of amendments were made to TANK POL 28 wording as a result of submissions in the section 42A Hearing Report. They were adopted when they improved the policy clarity while not altering its intent. Not all submission requests were considered necessary.</p>	<p>Ms Sweeneys evidence provides further rational to be considered. An assessment of these requests concludes that they either:</p> <ol style="list-style-type: none"> a) Add further clarity b) Make logical sense c) Reflect best practice. <p>I do not believe these changes alter the original intent of the policy so I am recommending that they be accepted.</p>	<p>I recommend that TANK POL 28 is amended as requested in the expert evidence by adding the words 'or extents' and 'where necessary'. Reference to industry guidelines has also been included.</p> <p>Refer to Appendix 2A for recommended changes.</p> <p>I recommend accepting submission points 207.53, 63.35 and 203.13.</p>
TANK POL 28 /ANZECC Guidelines	<p><u>Submitter 135 – Ravensdown, Carmen Taylor para 5.8 c)</u></p> <p>The evidence questions of the use of ANZECC guidelines, specifically the use of guideline percentiles (80%ile and 95%ile), while also acknowledging the role they play in assessing the effects of stormwater. Evidence recommends</p>	<p>The section 42A Hearing Report sought to justify the inclusion of ANZECC guidelines in TANK Pol 30 as a default mechanism for assessing stormwater discharges for contaminants not covered in Schedule 26 (para. 2138)</p>	<p>I reject the suggestion that ANZECC guideline targets of 80th and 95th percentile be removed from Policy 30 as discussed in the expert evidence of Carmen Taylor (paragraph 5.8 c). In regard to where Policy 30 applies, the definition of Stormwater network in the RRMP is a 'A system of piped or</p>	<p>I do not recommend any changes to TANK Pol 28 clause a) but I recommend a minor amendment to TANK Pol 30 to include the term 'after reasonable mixing'.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
	reference to ANZECC guidelines also be included in TANK Pol 28 clause a), (for contaminants not included in Schedule 26) although without the reference to a percentile target and to remove the percentile targets from TANK Pol 30 as well. Also to include 'after reasonable mixing' be included at TANK Pol 28 clause a).	To expand on this, the use of the guidelines on their own are, as Ms Taylor suggest, just guidelines that indicate further investigation is required. However, the inclusion of a percentile species protection target enables us to create a benchmark and therefore their inclusion is appropriate in PC9, for contaminants not covered by Schedule 26.	<i>open drains that drain an area to a point of discharge'</i> and therefore this policy covers other larger point source discharges, not just Territorial Authority network consents. Policy 30 should include the term 'after reasonable mixing' further up in the policy to improve clarity.	Refer to Appendix 2A for recommended changes. I recommend accepting in part submission point 207.54.
TANK POL 31	<u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 87</u> Ms Sweeney requests the addition of words that provide clarity around the roles and responsibilities for managing stormwater.	The section 42A Hearing Report did not consider any changes to this policy were necessary.	The evidence provided clarifies that the intention of the suggested amendments is to direct better coordination of compliance, monitoring and enforcement between local authorities and HBRC which is an integral aspect of improving stormwater discharges from urban areas. I do not believe this amendment alters the intent of the policy so are recommending it be accepted.	I recommended that TANK POL 31 is updated to make reference to the roles and responsibilities for compliance, monitoring and enforcement. Refer to Appendix 2A for recommended changes. I recommend accepting submission points 207.55 and 63.37.
Rule TANK 19/Permitted activity condition b): connection to	<u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 88</u> <u>Submitter 203, Oil Companies, Phillip Brown, paragraph 6.5</u>	The section 42A Hearing Report did not consider any changes to this activity condition were necessary, based on the submissions received.	The evidence provided raises several questions and concerns on the implication of this condition that appears in both TANK Rule 19 and 22 . However, the suggested relief for Rule 19 also raises	I recommend that condition b) of Rule TANK 19 is deleted.

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
reticulated networks	<p>Requests made to clarify the intent of condition b) <i>..the property cannot connect to a current or planned reticulated stormwater network.</i></p> <p>Expert evidence of Carmen Taylor provides an alternative condition: <i>The property is not located within a municipal or community stormwater serviced area, including areas which are planned to be serviced within 1 year of commencement of the activity.</i></p>		<p>questions and the condition remains problematic. The property not being located within a stormwater serviced area will by default be a discharge to water or land where it may enter water and a one year allowance for a service connection is arbitrary timeframe. Are they only permitted for one year until a connection becomes available? If they are within a stormwater serviced area does that mean they meet the condition and are therefore permitted? The problem still remains that if this condition is not met, then a HBRC restricted discretionary consent under Rule 20 is required. The original intention of this condition was to require connections to networks (where networks are available), instead of developers creating a discharge to land and trying to argue they are permitted under the RRMP rules. However, the permitted activity conditions for stormwater discharges to land have been strengthened so the options for a developer trying to evade connecting to a TLA network will likely be a RD consent under Rule 20. Therefore I recommend removing this condition. The issue of developers connecting to</p>	<p>Refer to Appendix 2A for recommended amendments.</p> <p>I recommend accepting in part submission points 207.56 and 63.8.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
			networks, whether networks have capacity and who pays for the provision of stormwater infrastructure to service development are matters for the Territorial Authority and a developer to address. This condition can also be deleted from Rule TANK 22 which will address the similar concerns raised in the expert evidence of Phillip Brown	
Rule TANK 21/Controlled activity condition a)(iv) Hazardous Substances	<p><u>Submitters 135, Ravensdown, Carmen Taylor</u> paragraph 5.8 d)</p> <p><u>Submitter 203, Oil Companies, Phillip Brown</u> paragraph 6.8</p> <p>Ms Taylor seeks to remove the requirement that precludes a stormwater network operators ability to meet condition iv) that a discharge does not come from sites that store, use or transfer hazardous substances.</p> <p>Mr Brown in his evidence requests the rule is deleted for similar concerns over this condition being impossible to meet with potential knock on effects for landowners.</p>	The section 42A Hearing Report did not recommend any changes to Rule 21 condition a).	I agree with the argument raised in the expert evidence from Ms Taylor in that precluding sites that store, use or transfer hazardous substances as a condition of a controlled activity rule renders this condition impossible to achieve for local authority network consents that by default drain industrial zoned land where these sites are commonplace. Not meeting this condition would mean that they would always fall to Rule 23 which is discretionary. Local Authorities have the available tools (such as bylaws) to regulate the discharge of hazardous substances from sites that are serviced by their networks to ensure they are able to meet this condition of a controlled activity consent. For this reason I disagree with the evidence of the Oil Companies that request this rule is	<p>I recommend that condition a) iv) of Rule TANK Rule 21 is amended to remove the requirement that the discharge must not come from a site used to store, use or transfer hazardous substances.</p> <p>Refer to Appendix 2A for recommended changes.</p> <p>I recommend accepting submission point 135.56.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
			deleted with the result that network consents would default to discretionary under Rule 23. A discretionary rule status would provide no certainty (as it could be denied) for local authorities who are required under the Local Government Act to also manage stormwater for flood control and drainage purposes.	
TANK Rule 21/Integrated Catchment Management Plans	<p><u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 98</u></p> <p>Evidence from Ms Sweeney highlights the fact that in moving the requirements of the Integrated Catchment Management Plan (ICMP) to a Schedule, we have inadvertently removed the requirement to develop an ICMP as a condition of consent.</p>	The section 42A Hearing Report recommended moving the requirements of the Integrated Catchment Management plan into a new Schedule.	I agree with the expert evidence provided on this aspect of Rule 21. The requirement for network discharges to produce an Integrated Catchment Management Plan as a condition of a controlled activity status was removed in error when formatting the Appendix 1A Recommended changes to PC9 document so will now be reinstated	<p>I recommend that Rule TANK 21 is amended by adding to the Condition/Standard/Terms:</p> <p>b) <u>An application for resource consent must include an Integrated Catchment Management plan in accordance with Schedule 35B</u></p>
TANK Rule 21 Condition/standards/terms	<p><u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 93</u></p> <p>Expert evidence recommends wording changes to the conditions for Rule TANK 21 to ensure they are reasonably able to retain controlled activity status. The change requests:</p> <p>a) Clarity in respect of where flooding can potentially occur</p>	The section 42A Hearing Report did not recommend any changes to this matter of control due to lack of explanation provided.	The intent of the rule conditions for TANK Rule 21 was not to make it impossible for Territorial Authorities to retain controlled status for network consent but to ensure the appropriate matters of control are included to ensure consent conditions instigate change and deal with legacy issues. I agree that the upcoming NES on wastewater overflows is likely to be an efficient means to address the widespread	<p>I recommend that the conditions in Rule TANK 21 are amended.</p> <p>Refer to Appendix 2A for recommended changes.</p> <p>I recommend accepting in part submission points 207.59 and 63.41.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
	<p>b) Correct a grammatical error around the repeated words cause to occur or contribute to'</p> <p>c) To alter the condition that precludes the presence of microbiological contaminants in stormwater, in particular animal effluent, when it will always be present in the form of domestic and wild animal droppings.</p>		<p>issue of wastewater overflows into stormwater networks. The Integrated Catchment Management Plan also requires a description of measures to address wastewater overflows and notwithstanding is the ability for HBRC to deal with this issue as a compliance matter at any stage. Therefore, I partly agree with the changes sought in the expert evidence to amend the rule conditions so that they reflect something achievable for retaining controlled activity status, with appropriate matters of control in place to ensure stringent conditions are placed on consents. However, I don't deem it appropriate to remove reference to sewage, blackwater or greywater as this is not considered appropriate to be contained in a discharge in any circumstances.</p>	
TANK Rule 22	<p><u>Submitter 203, Oil Companies, Phillip Brown</u> paragraph 6.5</p> <p>Evidence of Mr Brown seeks to remove the 1000m² impervious area threshold from the Activity description of Rule TANK 22 and ensure oil and grease that passes through interceptor systems is able to meet the standard for restricted discretionary status.</p>	<p>The section 42A Hearing Report introduced an 1000m² impervious area threshold into the activity description of Rule 19. As a consequence, it was also included in Rule TANK 22 as areas under this size were captured by Rule TANK 20 and the condition that they were not able to drain</p>	<p>The 1000m² impervious area threshold introduced into the activity description of Rule 19 in the section 42A Hearing Report would have been better included as a condition/standard/term. This would then negate the need to include it in the activity description of Rule 22 and thus narrowing its scope and ability to manage all discharges from industrial and trade</p>	<p>I recommend changes to Rules TANK 19 and 22 to remove the 1000m² imperious area threshold for the activity description and make it a condition for permitted activity Rule TANK 19.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
		hazardous substances, or be from a site used to store, use or transfer hazardous substances.	premises as a restricted discretionary activity, regardless of impervious area size. I agree with the expert evidence of submitter 203 to remove the 1000m2 impervious area threshold from Rule 22, and as a consequential amendment it will be moved in Rule 19 from the activity description to a condition/standard/term. I also agree that service station sites that contain oil interceptor systems should be able to meet the conditions of this restricted discretionary rule so are proposing an amendment to the condition to require sites to have interceptor systems and to bolster the matters of control so conditions are able to be placed on these resource consents to specify the design, construction and maintenance of such systems align with best practice standards.	Refer to Appendix 2A for recommended amendments. I recommend accepting in part submission point 203.28.
Schedule 35A/Item 5	<u>Submitters 63 and 207, NCC and HDC, Annette Sweeney, paragraph 98</u> Suggests an improvement to the requirements for stormwater management plans set out in Schedule 35A.	The section 42A Hearing Report did not recommend any changes to this Schedule.	The Councils provide a useful suggestion to Schedule 35A based on their experience with stormwater management plans that was overlooked in the section 42A Hearing Report. I agree with this suggested amendment to strengthen stormwater management plan actions for spills or hazardous events.	Add the following words to Section 35A/Item 5: ...identification of risks with the activities on the property and how they will be managed, <u>including contingency measures in the event of a spill or hazardous event.</u>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
				<p>Refer to Appendix 2A for recommended amendments.</p> <p>I recommend accepting submission points 63.48 and 207.66.</p>

Table 1E: Analysis on Source Protection Zones provisions

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
TANK OBJ 9	<p><u>Submitter 29, 194, 208, 238, Winegrowers</u> Mark St Clair, paragraphs 44-48</p> <p>Mr St Clair states that objectives should be written as outcome statements.</p>	<p>In paragraph 197 of the section 42A Hearing Report I state that objectives should be written as outcome statements. I recommended accepting submission points 120.78, 132.83, 210.2 that are seeking objectives to be amended so that they are outcome statements.</p>	<p>I agree with Mr St Clair that objectives should be outcome statements. I agree with Mr St Clair's amendment to OBJ TANK 9 as it turns OBJ TANK 9 into an outcome statement and it tidies up the objective.</p>	<p>I recommend that OBJ TANK 9 is amended. I recommend that submission points 194.22 and 120.78, 132.83, 210.2 are accepted.</p> <p>This amendment can be seen in see Appendix 2A.</p>
POL TANK 8	<p><u>Submitter 63, Napier City Council and submitter 207, Hastings District Council</u> Annette Sweeney, paragraph 58</p> <p>Ms Sweeney recommends including water takes in clause (iv) of POL TANK 8(b) as that directs the effects of takes to be considered in combination with other activities; or to amend clause (v) to include in combination with other existing activities.</p>	<p>POL TANK 8 was discussed in paragraphs 2275-2281 of the section 42A Hearing Report. I recommended accepting this submission point but I did not include the amendments to the policy in the recommended changes to PPC9. This was an error.</p>	<p>I agree that water takes should be included in (iv) because water takes are a water use activity and this policy will direct the effects of takes to be considered in combination with other activities.</p>	<p>I recommend that POL TANK 8 (b) (iv) is amended to include "water take". I recommend that submission point 207.41 is accepted.</p> <p>This amendment can be seen in Appendix 2A.</p>
POL TANK 8	<p><u>Submitter 180, Horticulture NZ.</u> Michelle Sands, paragraph 156-157</p> <p>Ms Sand points out that I recommended accepting their submission point however the submitter's wording has not been included.</p>	<p>In paragraph 2281 of the section 42A Hearing Report I recommended accepting submission point 180.25 however this was an error. I do not recommend accepting this submission point.</p>	<p>I recommend that submission point 180.25 is rejected because I do not think adding existing infrastructure and activities using existing infrastructure to this policy is necessary. The Source Risk Management Plan that is required by the Water Services Bill will discuss hazards, risks to the supply and measurements taken to address those</p>	<p>I recommend that submission point 180.25 is rejected. I do not recommend any changes to PPC9.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
			risks. I think existing infrastructure and existing activities can be included in the hazards and risks and will be assessed through the Source Risk Management Plan.	
POL TANK 8	<p><u>Submitter 63, Napier City Council and submitter 207, Hastings District Council</u> Annette Sweeney, paragraph 53(b).</p> <p>Ms Sweeney seeks to amend TANK POL 8(f)(vi) to improve clarity.</p>	I discussed TANK POL 8(f)(vi) in paragraphs 2275-2281 of the section 42A Hearing Report. In paragraph 2281 of the section 42A Hearing Report I recommended accepting submission point 203.10 and amending TANK POL 8(f)(vi) in response to submission point 203.10. This submission point sought to make reference to codes of practice and guidelines.	Annette Sweeney supports the amendment to POL TANK 8(f)(vi) however she as suggested that the wording could be improved. I agree Ms Sweeney's amendment because I think it improves clarity.	<p>I recommend that TANK POL 8 (f) (vi) is amended. I recommend that submission point 203.10 is accepted.</p> <p>This can be seen in Appendix 2A of this report.</p>
Matters of control and discretion for TANK Rules	<p><u>Submitter 63, Napier City Council and Submitter 207, Hastings District Council</u> Annette Sweeney, paragraphs 67-68</p> <p>Ms Sweeney seeks to add the wording "irrespective of any treatment process for the Registered Drinking Water Supply" to Rules TANK 2, 5, 20, 21, 22 and RRMP Rule 2.</p>	The amendment was included in Rule TANK 6 however it was not added to the other TANK Rules.	Not including the amendment in all the provisions was an error and I recommend that it is included.	<p>I recommend that TANK 2, 5, 20, 21, 22 and RRMP Rule 2 are amended. I recommend that submission point 207.45 is accepted.</p> <p>This can be seen in Appendix 2A of this report.</p>
RRMP Rule 6	<p><u>Submitter 63, Napier City Council and Submitter 207, Hastings District Council</u> Annette Sweeney, paragraph 71</p>	<p>The section 42A Hearing Report did not mention RRMP Rule 6.</p> <p>RRMP Rule 6 was not specifically included in the</p>	RRMP Rule 5 is a rule for feedlots and feedpads with a permitted classification. The notified version of PPC9 added a condition to RRMP Rule 5 that states that the feedpad or feedlot is not located in a Source Protection Zone.	<p>I recommend that a matter of discretion is added to RRMP Rule 6. I recommend that submission point 207.46 is accepted.</p> <p>This amendment can be seen in</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
	<p>Ms Sweeney seeks to add a matter of discretion to RRMP Rule 6. This matter of discretion seeks to add potential effects of the activity on the quality of source water for Registered Drinking Water Supplies in the TANK Catchment.</p>	<p>Hastings District Council submission however the submission did seek to amend RRMP rules to incorporate recommendations of the Joint Working Group.</p>	<p>The notified version of PPC9 included RRMP Rule 6 which is for activities for feedpads or feedlots that do not comply with Rule 5. RRMP Rule 6 has a restricted discretionary activity classification but the notified version of PPC9 did not add any matters for discretion to the rule.</p> <p>I recommend that the matter of discretion that Ms Sweeney states in paragraph 71 of her evidence should be added to RRMP Rule 6. This is to ensure that there is a matter of discretion for feedpads of feedlots within the TANK Catchment that require a consent.</p>	<p>Appendix 2A of this report.</p> <p>The applicable submission point is 207.46.</p>
<p>Protection of small communities around the periphery of the Heretaunga Aquifer system</p>	<p><u>Submitter 132, Te Taiwhenua o Heretaunga</u> Maurice Black, paragraphs 100 – 101</p> <p>Mr Black states that not expanding SPZs to areas on the periphery of the Heretaunga Plains Aquifer System will create a dual management approach where a more lenient approach towards management of land use activities that have the potential to degrade water quality will be enabled.</p>	<p>In paragraphs 2251 – 2253 in the section 42A Hearing Report I state that PPC9 identifies SPZs for Registered Drinking Water Supplies where they have been defined by technical methods. Where they are not able to be defined the policies recognises a default source protection extent and this is outlined in Schedule 35. For smaller scale supplies, the council must assess the risk from any consent application to that water supply. This includes the Source Protection Extent areas for small-scale</p>	<p>I support my comments in the section 42A Hearing Report. The National Environment Standard for Sources of Human Drinking Water Regulations 2007 directs that any risks to small scale supplies will be assessed during the resource consent process, therefore all communities will be protected.</p> <p>Schedule 35 outlines the method for calculating the area of a provisional Source Protection Extent. This covers drinking water supplies to between 25 to 500 people.</p> <p>Therefore, small communities are protected through the National Environment Standard for Sources of Human Drinking Water Regulations 2007 and through Schedule 35.</p>	<p>I do not recommend any changes to PPC9 as I agree with my comments in the section 42A Hearing Report.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
		registered drinking water supplies.		
Hastings SPZ map	<p data-bbox="394 339 804 464"><u>Submitter 63, Napier City Council and Submitter 207, Hastings District Council</u> Annette Sweeney, paragraphs 77-79</p> <p data-bbox="394 504 804 692">Ms Sweeney states that the Hastings SPZ map does not represent the full extent of the zone required to enable Hastings District Council to meet its obligations in respect of source water protection.</p> <p data-bbox="394 732 804 857">Hastings District Council in their submission wanted the numerical and the analytical model used to delineate the Hastings SPZ.</p>	<p data-bbox="831 339 1155 464">I discuss methodology for the SPZ maps in paragraphs 2387 - 2394 of the section 42A Hearing Report.</p> <p data-bbox="831 504 1155 823">I state that the numerical model is a more advanced approach than the analytical model. I recommend only using one model, the numerical model, in the maps as using two models is overly cautious. This approach was recommended in the section 32 Report.</p>	<p data-bbox="1182 339 1677 564">Mr Pawel Rakowski has provided evidence for HBRC on two models that have been used to delineate SPZs. Mr Rakowski states in paragraph 3.2 of his evidence that the numerical model of SPZ delineation is more appropriate to use for the Heretaunga Aquifer system than the analytical method.</p> <p data-bbox="1182 604 1677 692">Mr Rakowski also states in paragraph 3.4 of his evidence that the reason for using a more advanced model is to reduce uncertainty.</p> <p data-bbox="1182 732 1677 954">I agree with the Section 32 Report which said that combining both models would be overly cautious and impose a heavy burden on landowners. Mr Rakowski has stated that the numerical model is more advanced and I recommend only using the numerical model to delineate the Hastings SPZ.</p>	<p data-bbox="1704 339 2119 528">I do not recommend any changes to PPC9 as I agree with my comments in the section 42A Hearing Report. I recommend that only the numerical model is used to delineate the Hastings SPZ.</p>
Napier SPZ map	<p data-bbox="394 962 804 1054"><u>Submitter 135, Ravensdown</u> Carmen Taylor, section 7 of her evidence</p> <p data-bbox="394 1094 804 1319">Ms Taylor is opposed to the SPZ maps being planning maps. Ms Taylor states that the Napier SPZ map is a provisional map and it has not been determined in accordance with the criteria outlined in Schedule 35 (paragraph 7.11 of the evidence).</p>	<p data-bbox="831 962 1155 1219">In paragraph 2397 of the section 42A Hearing Report I state that I recommend that the SPZ maps should be planning maps because planning maps will be helpful in a resource consent process.</p> <p data-bbox="831 1259 1155 1378">In paragraph 2390 – 2392 in the section 42A Hearing Report I discuss the 3D aquifer mapping project that</p>	<p data-bbox="1182 962 1677 1219">I support my comments in the section 42A Hearing Report. The Napier SPZ map is the most up to date information we have for the Napier SPZ and I do not think we can wait until the new mapping project (SkyTEM study) is completed. We have to include a map now to address source protection issues.</p> <p data-bbox="1182 1259 1677 1378">Section 1.6 of the NPSFM2020 states that there is a requirement in the NPS to use the best information available at the time. Section 1.6.(3)(a) states that a person who is</p>	<p data-bbox="1704 962 2119 1121">I do not recommend and changes to PPC9 as I agree with my comments in the section 42A Hearing Report. I recommend that the Napier SPZ is kept as a planning map.</p>

Topic	Submitters' evidence	Sec 42A Hearing Report summary of findings	Discussion in response to evidence	Recommendation
		<p>will be completed by February 2023. I state that we cannot wait for the new information to be available as there are source protection issues that need to be addressed now.</p>	<p>required to use the best information available at the time must not delay making decisions solely because of uncertainty about the quality or quantity of the information available. Therefore I recommend we use the best available data and the Napier SPZ map is a planning map.</p> <p>HBRC is reviewing its regional plan and it will be notifying a new plan before December 2024 to align with the NPSFM2020. The updated information from the aquifer mapping project will be included in the new plan.</p>	

Appendix 2 Further recommended changes to PPC9 in response to submitters' evidence

This appendix includes all recommended changes to PPC9 in response to submissions and evidence.

Red text with ~~strikethrough~~ and underline show changes that were recommended in the section 42A Hearing Report. Green text with ~~strikethrough~~ and underline show recommended changes proposed in this Addendum Report in response to expert evidence received from submitters.

This appendix is split into three parts:

- Appendix 2A: PPC9 excluding the schedules and the planning maps
- Appendix 2B: Schedules
- Appendix 2C: Planning Maps.

Appendix 2C

We have included only the maps that have recommended changes in response to evidence.

The Maps that are **amended** are:

1. Schedule 28 Planning Map 1: Priority Catchments Sediment Yield
This map has been amended by updating it to use a more recent version of SedNet, the sediment loss prediction model.
2. Schedule 28 Planning Map 3: Priority Catchments Total Nitrogen Yield
This map is recommended to be updated to reflect the thresholds used in Schedule 28.
3. Schedule 31 Planning Map 31C: Ngaruroro Water Quantity Area
This map has been amended to ensure all the shading is consistent.

The Planning Map recommended for **deletion**

4. Schedule 28 Planning Map 2: Priority Catchments Total Nitrogen Concentration
This map is recommended to be deleted as it unnecessarily increases the attention on nitrogen.

The Planning Map recommended for **inserting**

5. Schedule 28 Planning Map (new map) 2: Priority Catchments Total Phosphorous Yield
This is a new map introduced to ensure a more holistic approach to contaminant loss management and meeting water quality outcomes.

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Recommended changes to Proposed Plan Change 9

Background deleted – 120.80, 123.19 and 132.33

Recommended changes to Proposed Plan Change 9

Amendments Proposed in Plan Change 9

The Proposed Plan Change makes the following amendments to the Regional Resource Management Plan.

Chapter 5.10 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments

A new chapter 5.10 inserts objectives and policies for the management of land and water in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū (TANK) Catchments.

This Plan Change also makes consequential amendments to parts of Section 5 of the Regional Resource Management Plan.

Chapter 6.9 Regional Rules

A new section 6.10 inserts new rules to manage land and water resources in the TANK catchments.

This Plan Change also makes consequential amendments to existing rules in Chapter 6. These amendments apply only where the activity is carried out in the TANK catchments.

Schedules

New Schedules 26 – 356 are inserted to support policy and rules.

Chapter 9 Glossary

New terms are inserted to support interpretation of the Plan.

Proposed Plan Change PC9 to the Hawke's Bay Regional Resource Management Plan – TANK Catchments

Insert at the end of Chapter 5 the following new chapter;

5.10 Introduction

Freshwater is essential to the region's economic, environmental, cultural and social well-being. The way in which these well-beings are provided for is informed by how the values for freshwater are understood and identified. Figure 1 provides an illustration of the wider community values for the TANK freshwater bodies expressed across the four well-being domains.

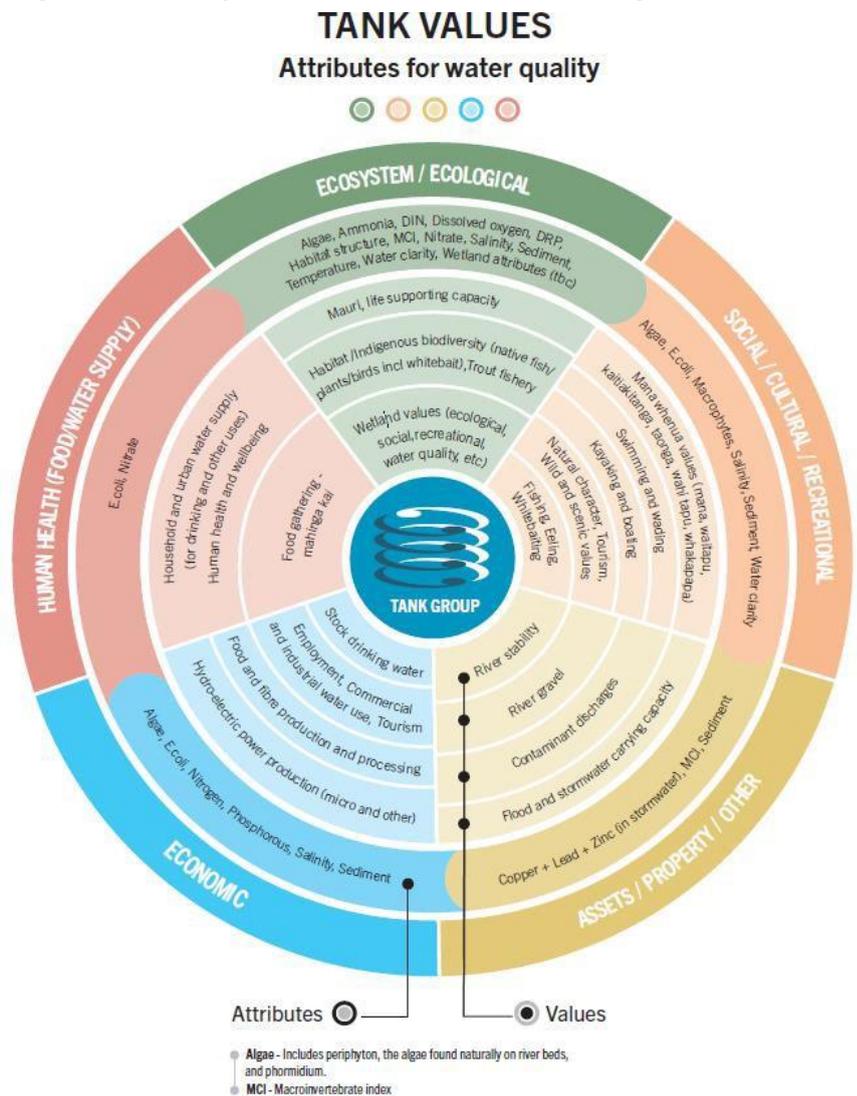
This Plan also recognises Te Mana o te Wai, which puts the mauri of the waterbody and its ability to provide for te hauora o te tangata (the health of the people), te hauora o te taiao (health of the environment) and te hauora o te wai (the health of the waterbody) to the forefront of freshwater management.

Water is viewed as a taonga by Māori; a treasure where mauri and ecosystem health are protected and provided for. Mauri is a spiritual value that is manifested by abundant and healthy water and aquatic resources, including plants and animals that depend on water.

Figure 2 below shows the interrelated nature and cultural connections of the values held by Māori for water. These core values are underpinned by a philosophy of etiquette, customs, harmony and timing.

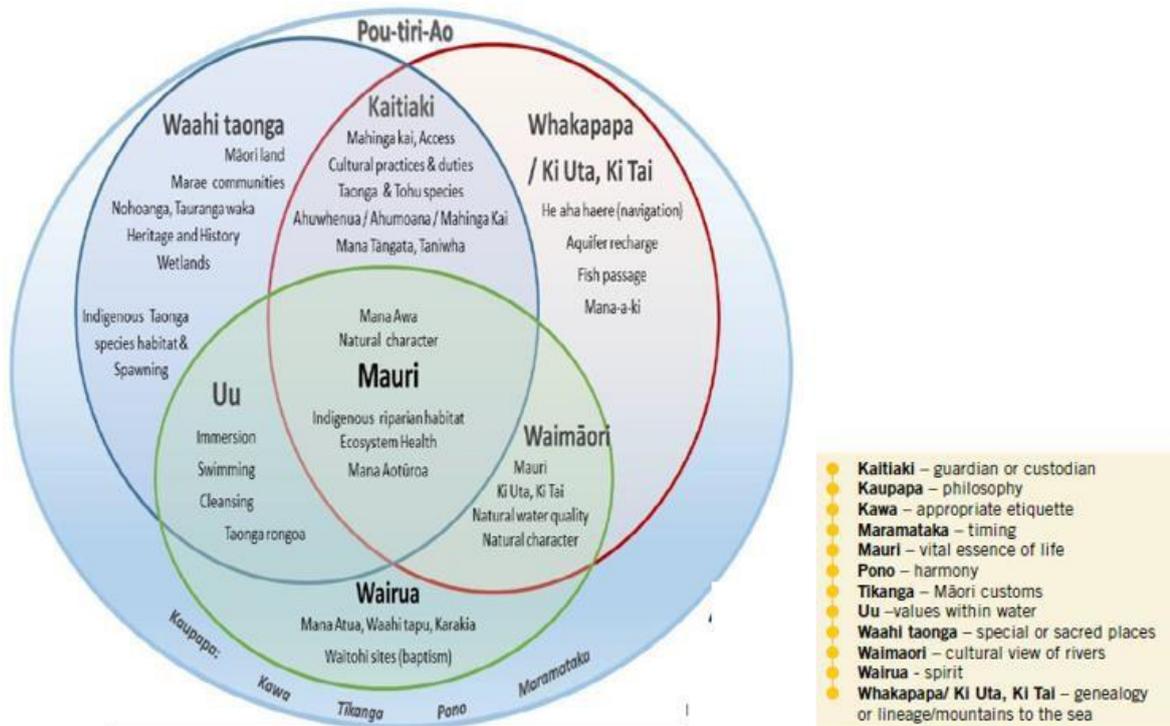
The two expressions of the values for freshwater complement and build on each other. They enable the directions of the National Policy Statement for Freshwater Management to be given effect to and ensure the Plan provides for all of the community's values.

Figure 1; community values and attributes for water management



Recommended changes to Proposed Plan Change 9

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



This articulation of community and Māori values has enabled decisions to be made about the use and management of waterbodies of the TANK catchments.

The Plan focuses on all the values for which water is to be managed by the setting of objectives, limits and other management measures that enable the needs of those values to be met. It also acknowledges the wider Māori perspectives of kawa, kaupapa and tikanga that support Māori values for water and its management and ensures the outcomes that are being sought are consistent with those cultural principles and approaches.

Key attributes that allow the state of the values to be assessed and monitored have been developed and objectives established for them. Attributes for both water quality and water quantity have been identified and the desired attribute state has been agreed. For some water bodies, the desired state meets the actual state, however, for others, the state is less than desired and the plan provides measures and introduces new rules that will enable the objectives to be met. This includes objectives for water quality attributes as well as limits and flows for managing quantity of water.

Recommended changes to Proposed Plan Change 9

5.10.1 TANK Objectives

General Objectives

OBJ TANK 1 Freshwater management in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments will be achieved by the Council, tangata whenua and the urban and rural community working together in a way that:^{194.18, 210.2, 132.83}

- a) recognises the tangata whenua as kaitiaki and other resource users as guardians and the guardianship roles they each play in freshwater management ~~and;~~
- b) recognises the importance of monitoring, resource investigations and the use of mātauranga Māori to inform decision making and limit setting for sustainable management;
- c) ensures good land and water management practices are followed and where necessary, mitigation or restoration measures adopted; ~~and~~
- d) supports good decision making by resource users including rural and urban communities through marae and hapū initiatives, community or other catchment management programmes and monitoring initiatives, urban stormwater programmes, landowner collectives, farm management plans and industry good practice programmes.^{201.16}

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

- a) Te Mana o te Wai¹¹ and ~~integrated mountains to the sea~~ the connection between freshwater, land and the coast, ki uta ki tai principles, and the connection between surface water and groundwater are upheld and recognised;^{126.6}
- b) A continuous improvement approach to the use and development of natural resources and the protection of indigenous biodiversity and the habitat of trout and salmon^{58.4} is adopted and life-supporting capacity and the aquatic ecosystem processes are safeguarded^{126.6}
- c) ~~b)~~ the collective management of sustainable^{135.5} freshwater is enabled;^{120.78}
- d) ~~e)~~ The kaitiakitanga role of tangata whenua and their whakapapa, customs^{120.12} and cultural connection with water are recognised and provided for;
- e) ~~d)~~ The responsibilities of people and communities for sustainable resource use and development is recognised and supported; and
- f) ~~e)~~ The significant values of wetlands,^{126.6} ~~the~~ outstanding water bodies in Schedule 25 and the values in the plan objectives are appropriately protected and provided for.

Climate change

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

- a) ~~The effects on aquatic ecosystems, including indigenous biodiversity, freshwater bodies, water supply and human health, primary production and infrastructure from the predicted:~~
 - (i) ~~increases in intensity and frequency of rainfall;~~
 - (ii) ~~effects of rainfall on erosion and sediment loss;~~
 - (iii) ~~increases in sea level, and the effects of salt water intrusion;~~
 - (iv) ~~increasing frequency of water shortages;~~
 - (v) ~~increasing variability in river flows;~~
- b) ~~The amount of information available and the scale and probability of adverse effects, particularly irreversible effects, as a consequence of acting or not acting;~~
- c) ~~The timeframes relevant to the activity;~~
- d) ~~Opportunities to improve community resilience for changes occurring as a result of (a)(i) to (iv).~~

¹ From Objective AA and Policy AA in NPSFM 2017

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Water Quality General

- OBJ TANK 4** ~~Land and water use, contaminant discharge and nutrient loss activities are carried out so that~~^{201.19} ~~†~~The quality of the TANK freshwater bodies is maintained where objectives are currently being met, or is improved in degraded waterbodies so that they meet water quality target^{180.10} attribute states in Schedule 26 by 2040 provided that:
- for any specific water body where the attribute state is found to be higher than the target attribute state ~~that~~ given in Schedule 26, the higher state is to be maintained; ~~and~~
 - progress is made over the life of this Plan towards the long term target attribute states by the mixture of regulatory and non-regulatory provisions in this Plan. ~~Maintenance of a state is at the measured state~~².
- OBJ TANK 5** Te Mana o te Wai, the kaitiakitanga role of tangata whenua and the needs for the values set out in Schedule 26, particularly mauri and ecosystem health are achieved through collectively managing all of the specified attributes.
- ~~**OBJ TANK 6** The quality of the TANK freshwater bodies set out in Schedule 27 will be achieved through future plan changes.~~^{203.4}
- ~~**OBJ TANK 7** Land use is carried out in a manner that reduces contaminant loss including soil loss and consequential sedimentation in freshwater bodies, estuaries and coastal environment.~~^{126.11}
- OBJ TANK 8** Riparian margins are protected or improved where necessary to provide for Aquatic ecosystem health and mauri of water bodies in the TANK catchment ~~is improved by appropriate management of riparian margins and~~ to: ^{23.30, 180.16, 195.24, 210.22}
- reduce effects of contaminant loss from land use activities;
 - improve aquatic habitat and protect indigenous species including fish spawning habitat;
 - reduce stream bank erosion;
 - enhance natural character and amenity;
 - improve indigenous biodiversity;
 - reduce water temperature in summer;
 - reduced nuisance macrophyte growth.
- OBJ TANK 9** Activities in source protection areas for Registered Drinking Water Supplies are managed to ensure that ~~they~~ do not cause source^{203.4} water in these zones areas to become unsuitable for human consumption. ~~and that risks to the supply of safe drinking water are appropriately managed.~~^{194.22}

Catchment Objectives

- OBJ TANK 10** In combination with meeting the water quality target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the Ahuriri freshwater catchments so that~~ the mauri, water quality and water quantity of the Ahuriri freshwater catchments^{120.13, 210.25} are maintained and enhanced where necessary to enable:
- Ahuriri estuary sediments to be healthy and not accumulate excessively;
 - healthy ecosystems that contribute to the health of the estuary;
 - healthy and diverse indigenous aquatic plant, fish and bird populations;
 - people and communities to safely meet their domestic water needs;
 - primary production water for community social and economic well-being; and provide for;
 - contribution to the healthy functioning of the Te Whanganui a Orotū (Ahuriri)^{126.15} estuary ecosystem

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

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and enable people to safely carry out a wide range of social, cultural and recreational activities including swimming and the collection of mahinga kai in the estuary.

OBJ TANK 11 In combination with meeting the water quality target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using, ²⁹⁻⁵³ damming and diverting of freshwater is carried out in the~~ **Ngaruroro River catchment so that** the mauri, water quality and water quantity in the Ngaruroro River catchment ^{120.13, 210.25} are maintained in the mainstem above the Whanawhana Cableway and in the Taruarau River, and are improved in the tributaries and lower reaches where necessary to enable;

- a) healthy ecosystems;
- b) healthy and diverse indigenous aquatic plant, animal and bird populations especially whitebait, torrent fish, macroinvertebrate communities, bird habitat on braided river reaches and a healthy trout fishery;
- c) people to safely carry out a wide range of social, cultural and recreational activities especially swimming and cultural practices of Uu and boating, including jet-boating in the braided reaches of the Ngaruroro;
- d) protection of the natural character, instream values and hydrological functioning of the Ngaruroro mainstem and Taruarau and Omahaki tributaries;
- e) collection of mahinga kai to provide for social and cultural well-being;
- f) people and communities to safely meet their domestic water needs;
- g) primary production, industrial and commercial ^{135.1} water needs and water required for associated processing and other urban activities to provide for community social and economic well-being;

and provide for;

- h) contribution to water flows and water quality in the connected Heretaunga Plains Aquifers;
- i) contribution to the healthy functioning of Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of mahinga kai in the estuary.

OBJ TANK 12 In combination with meeting the water quality target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the~~ **Tūtaekuri River catchment so that** the mauri, water quality and water quantity in the Tūtaekuri River catchment ^{120.13, 210.25} are maintained in the upper reaches of the mainstem and are improved in the tributaries and lower reaches where necessary to enable:

- a) healthy ecosystems;
- b) healthy and diverse indigenous aquatic and bird populations especially , whitebait, torrent fish, macroinvertebrate communities and a healthy trout fishery;
- c) people to safely carry out a wide range of social, cultural and recreational activities, especially swimming and cultural practices of Uu and boating;
- d) protection of the natural character, instream values and hydrological functioning of the Tūtaekuri mainstem and Mangatutu tributary;
- e) collection of mahinga kai to provide for social and cultural well-being;
- f) people and communities to safely meet their domestic water needs;
- g) primary production, industrial and commercial ^{135.10} water needs and water required for associated processing and other urban activities to provide for community social and economic well-being;

and provide for;

- h) contribution to the healthy functioning of Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of mahinga kai in the estuary.

OBJ TANK 13 In combination with meeting the water quality target attribute states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater is carried out in the~~ **Karamū and Clive Rivers catchment so that** the mauri, water quality and water quantity in the Karamū and Clive Rivers catchment ^{120.13, 210.25} are improved to enable;

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- a) healthy ecosystems;
- b) healthy and diverse indigenous aquatic and bird populations, especially black patiki, tuna and whitebait, and healthy macroinvertebrate communities;
- c) people to safely carry out a wide range of social, recreational, and cultural activities, including swimming and cultural practices of Uu and rowing and waka ama in the Clive/Karamū;
- d) collection of mahinga kai to provide for social and cultural well-being;
- e) people and communities to safely meet their domestic water needs;
- f) primary production, **industrial and commercial**^{135.10} water needs and water required for associated processing and other urban activities to provide for community social and economic well-being;

and provide for;

- g) contribution to the healthy functioning of the Waitangi Estuary ecosystem and to enable people to safely carry out a wide range of social, cultural and recreational activities and the collection of mahinga kai in the estuary.

OBJ TANK 14 In combination with meeting the **water quality target attribute** states specified in Schedule 26, ~~the use and development of land, the discharge of contaminants and nutrients, and the taking and using of freshwater is carried out so that~~^{120.13, 210.25} the mauri, water quality, water quantity and groundwater levels are maintained in the **Groundwater** connected to the Ngaruroro, Tūtaekurī and Karamū rivers and their tributaries **is managed** to enable;

- a) people and communities to safely meet their domestic water needs and to enable the provision of safe and secure supplies of water for municipal use;
- b) primary production, **industrial and commercial**^{135.12} water needs and water required for associated processing and other urban activities to provide for community social and economic well-being;

and provide for;

- c) the maintenance of groundwater levels at an equilibrium that accounts for annual variation in climate and prevents long term decline or seawater intrusion;
- d) contribution to water flows and water quality in connected surface waterbodies.

OBJ TANK 15 ~~In combination with meeting the water quality states specified in Schedule 26, the use and development of land, the discharge of contaminants and nutrients, and the taking, using damming and diverting of freshwater connected to the~~ **Wetland and lake waahi taonga** within the TANK catchments **are is** managed so that mauri, water quality and flows, and levels are maintained and improved to enable; ^{58.12, 123.36, 201.28}

- a) healthy and diverse indigenous **and valued introduced**^{58.16} fish, bird and plant populations in wetland and lake areas and connected waterways;
- b) improved hydrological functioning in wetland and lakes and in connected waterways;
- c) people to safely carry out a wide range of social, **recreational**^{58.9} and cultural activities;
- d) ~~collection of~~ mahinga kai **and the abstraction of water** to provide for **human or animal health and** social and cultural well-being;^{124.21}
- e) contribution to improved water quality in connected surface waters;
- f) the protection of the outstanding values of the Kaweka Lakes, Lake Poukawa and Pekapeka Swamp and the Ngamatea East Swamp;

and to;

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

Water quantity

OBJ TANK 16 ~~Subject to limits, targets and flow regimes established to meet the needs of the values for the water body, water quantity allocation management and processes ensure water allocation~~ **Ground and surface water in**

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the TANK Catchment is allocated, subject to limits, targets and flow regimes which provide for the values of each water body,^{210.2, 132.83} in the following priority order:

- a) Water for t~~The essential reasonable domestic~~ needs of people, livestock drinking and fire-fighting supply^{13.8, 35.76, 195.28;}
- b) ~~The allocation and reservation of water for e~~Existing and future demand for domestic supply including marae and papakāinga, and municipal uses supply as described in HPUDS (2017) ~~can be met within the specified limits;~~
- c) Primary production on versatile land-soils;^{29.7, etc.}
- d) Other primary production,^{30.1} food processing, industrial and commercial end uses;
- e) Other non-commercial end uses.

OBJ TANK 17 The allocation and use of water results in;

- a) the development of Māori economic, cultural and social well-being supported through regulating the use and allocation of the water available at high flows for taking, storage and use;
- b) water being available for abstraction at agreed reliability of supply standards;
- c) efficient water use[;];
- d) ~~Allocation regimes that are flexible and responsive, allowing water users to make efficient use of this finite resource;~~^{132.84}

OBJ TANK 18 The current and foreseeable water needs for mauri and ecosystem health and of future generations ~~and for mauri and ecosystem health~~^{58.12} are secured through;

- a) avoiding future over-allocation and phasing out existing over-allocation^{123.39, 233.9}
- b) ~~a)~~ water conservation, water use efficiency, and innovations in technology and management;
- c) ~~b)~~ flexible water allocation and management regimes;
- d) ~~e)~~ water reticulation;
- e) ~~d)~~ aquifer recharge and flow enhancement;
- f) ~~e)~~ water harvesting and storage.

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5.10.2 Policies: Surface Water and Groundwater Quality Management

Priority Management Approach

- POL TANK 1** The Council ~~will regulate land use activities and will work with mana whenua, with~~ landowners, local authorities, industry and community groups, ~~mana whenua~~ and other stakeholders ~~will regulate or to~~ manage land use activities ~~and surface and groundwater bodies~~ so that ~~the 2040 target water quality attribute states described in Schedule 26 attributes~~ are maintained at their current state or where required show an improving trend towards the ~~water quality target attribute states shown in Schedule 26~~^{180.10, 180.11, 135.1} by focussing on:
- water quality improvement in ~~priority sub~~-catchments^{180.10 et al} (as described in Schedule 28) where water quality is not meeting specified freshwater quality targets;
 - sediment management as a key contaminant pathway to also address phosphorus and bacteria losses;
 - the significant environmental stressors of excessive sedimentation and macrophyte growth in lowland rivers and nutrient loads entering ~~the Te Whanganui ā Orotu (Ahuriri)~~ and Waitangi estuaries;
 - the management of riparian margins;
 - the management of urban stormwater networks and the reduction of contaminants in urban stormwater;
 - the protection of water quality for domestic ~~use and registered drinking water supplies, and municipal water supply.~~^{201.32, 135.18, 195.31, 233.10}
- POL TANK 2** In the **Clive/Karamū Rivers** and their tributaries, in addition to ~~Policy POL TANK~~ 1 the Council will work with mana whenua, landowners and the Hastings District Council to:
- reduce water temperature and increase the level of dissolved oxygen by;
 - the establishment of riparian vegetation to shade the water and reduce macrophyte growth while accounting for flooding and drainage objectives ;
 - reducing excessive macrophyte growth by physical removal of aquatic plants in the short term;
 - adopt flow management regimes to remedy or mitigate the effects of surface and ground water abstraction;
 - reduce the amount of sediment and nutrients entering the freshwater from adjacent land;
 - improve stormwater and drainage water quality and the ecosystem health of urban waterways and reduce contamination of stormwater associated with poor site management practices, spills and accidents in urban areas (refer also to ~~Policies POL TANK~~ 28 -31).
- POL TANK 3** In **lakes and wetlands** in the TANK Catchments, in addition to ~~Policy POL TANK~~ 1 the Council will work at a catchment scale with land owners in the wetland or lake catchments (refer ~~also~~ to ~~Policies POL TANK~~ 23 to 25) to:
- reduce sediment and nutrient inputs into the waterbody;
 - improve water quality by increasing macrophyte plant growth in shallow lakes;
 - improve ecosystem health and water quality by excluding stock and improving riparian management;
 - meet ~~water quality target attribute states objectives~~ in Schedule 26 for water bodies downstream of the lake or wetland;
 - support and assist landowners to protect, increase or restore existing wetlands or create new wetlands including for the management of urban stormwater.
- POL TANK 4** In the **lower Ngaruroro and Tūtaekuri Rivers** and their tributaries, in addition to ~~Policy POL TANK~~ 1 the Council will work with landowners to:
- improve water clarity and reduce deposited sediment by reducing the amount of sediment being lost from land;
 - reduce risk of proliferation of algae by reducing nutrient losses from land, including by reducing phosphorous loss associated with sediment;

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- c) improve ecosystem health and water quality by excluding stock from surface water bodies and improving riparian management.

POL TANK 5 In the tributaries of **Te Whanganui ā Orotu(the-Ahuriri Estuary)**^{126.15}, in addition to **Policy POL TANK 1** the Council will work with mana whenua, landowners and the Napier City Council to:

- a) improve water clarity and reduce deposited sediment by **reducing** the amount of sediment being lost from land and river banks;
- b) reduce risk of proliferation of algae by reducing nutrient losses from land, including through management of phosphorous loss associated with sediment;
- c) improve stormwater and drainage water quality and the ecosystem health of urban waterways and reduce contamination of stormwater associated with poor site management practices, spills and accident in urban areas;
- d) carry out further investigations to understand the estuary hydrology, functioning and environmental stressors.

Protection of Source Water

POL TANK 6 The quality of **groundwater of the Heretaunga Plains and surface waters used as source water** for Registered Drinking Water Supplies will be protected, in addition to **Policy POL TANK 1**, by the Council:

- a) identifying a source protection extent for small scale drinking water supplies or Source Protection Zones for large scale drinking water supplies by methods defined in Schedule 35; and
- b) regulating activities within Source Protection Zones that may actually or potentially affect the quality of the source water or present a risk to the supply of safe drinking water because of:
 - (i) direct or indirect discharge of a contaminant to the source water including by overland flow **and/** ^{207.39} or percolation to groundwater;
 - (ii) an increased risk to the safety of the water supply as a result of a non-routine event :
 - (iii) potentially impacting on the level or type of treatment required to maintain the safety of the water supply;
 - (iv) shortening or quickening the connection between contaminants and the source water, including damage to a confining layer **of the aquifer**; ^{207.39};
 - (v) in the case of groundwater abstraction, the rate or volume of abstractions causing a change in groundwater flow direction or speed and/ or a change in hydrostatic pressure that is more than minor.

POL TANK 7 When considering applications to take water for a Registered Drinking Water Supply, the Council will:

- a) provide for the replacement or amendment of a source protection extent or Source Protection Zone which reflects the level of protection required for that supply, according to a method specified in Schedule 35;
- b) provide for the amendment of a Source Protection Zone where new information changes the outputs from the method specified in Schedule 35;
- c) require applications to include an assessment of the Source Protection Zone required, taking into account the factors set out in Schedule 35;
- d) have regard to:
 - (i) the extent to which the application reflects the factors and methodology in Schedule 35 when establishing the Source Protection Zone; and
 - (ii) the impacts, including any costs and benefits, of any additional restrictions in the Source Protection Zone;
 - (iii) the level of consultation with land owners **and occupiers** ^{203.9} in the Source Protection Zone.

POL TANK 8 The Council will, when considering applications to discharge contaminants or carry out land or water use activities within:

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- a) ~~e)~~ the source protection extent for Registered Drinking Water Supplies, take into account possible contamination pathways and risks to the quality of the source water for the water supply,
- b) ~~f)~~ A Source Protection Zone, avoid or mitigate risk of contamination from the activity of the source water for the water supply by taking into account criteria including but not limited to:
 - (i) the amount, concentration and type of contaminants likely to be present as a result of the activity or in any discharge;
 - (ii) the potential pathways for those contaminants, including any likely or potential preferred pathways;
 - (iii) the mobility and survival rates of any pathogens likely to be in the discharge or arising as a result of the activity;
 - (iv) any risks the proposed land use, water take^{207.41} or discharge activity has either on its own or in combination with other existing activities, including as a result of non-routine events;
 - (v) any risks ensuring the water supplier is aware of any abstraction of groundwater where abstraction has the potential to have more than a minor impact on flow direction or speed and/or hydrostatic pressure;
 - (vi) the effectiveness of any mitigation measures to avoid or mitigate risk of contaminants entering the source water and the extent to which the effectiveness of the mitigation measure can be verified, including whether the activity is regulated by and/or complies with regard to^{203.10} relevant codes of practice or guidelines;
 - (vii) notification, monitoring or reporting requirements to the Registered Drinking Water Supplier;
 - (viii) outcomes of consultation with the Registered Drinking Water Supplier with respect to the risks to source water from the activity, including measures to minimise risks and protocols for notification to the Registered Drinking Water Supplier should an event presenting a risk to groundwater occur. ^{180.25, 195.36, 203.10, 2017.41}

POL TANK 9

The Council will work with the agencies which have roles and responsibilities for the provision of safe drinking water, including local government agencies, the national regulator, health agencies and registered water suppliers Napier City Council, Hastings District Council, Hawkes Bay District Health Board and Drinking Water Assessors and through multi-agency collaboration to:^{119.7}

- a) implement a multi-barrier approach to the delivery of safe drinking water for Registered Drinking Water Supplies, through the consideration of source protection measures, water treatment and supply distribution standards;
- b) understand the nature and extent of the water resources used to supply communities, their connectivity with other waterbodies and their recharge sources;
- c) understand the nature of the relationship between water age and water quality, the use of water age as an attribute and implications for its management;
- d) understand risks to the quality of water used for Registered Drinking Water Supplies, including through consultation on any applicable resource applications in Source Protection Zones;
- e) maintain shared databases of activities, including information in consents for land and water use, that have the potential to adversely affect quality of water used for community supply;
- f) develop solutions that address risks to water quality including wastewater reticulation solutions in Source Protection Zones.;
- ~~g) implement a multi-barrier approach to the delivery of safe drinking water for Registered Drinking Water Supplies, through the consideration of source protection measures, and water treatment and supply standards. ^{29.56, 129.1, 207.42, 203.11}~~

Managing point source discharges

POL TANK 10

The Council will manage point source discharges (that are not stormwater discharges) so that after reasonable mixing, contaminants discharged either by themselves or in combination with other discharges do not cause the 2040 target attribute states objectives for water quality in Schedule 26 to be exceeded and when considering applications to discharge contaminants will take into account:

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- a) measurement uncertainties associated with variables such as location, flows, seasonal variation and climatic events;
- b) the degree to which a discharge is of a temporary nature, or is associated with necessary maintenance work.
- c) when it is an existing activity, identification of mitigation measures, where necessary, and timeframes for their adoption that contribute to the meeting of water quality target attribute states quality objectives
- d) The extent to which the discharge activity complies with industry^{180.9} good management standards
- e) The necessity for requiring best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant. ^{126.16, 120.106, 201.34}

Riparian Land Management

- POL TANK 11** The Council will promote and support the establishment of riparian vegetation, including in conjunction with stock exclusion and setback regulations, that:
- a) contributes to the health of aquatic ecosystems especially for indigenous species;
 - b) provides shading to reduce macrophyte growth and water temperature especially in lowland tributaries of the Karamū River;
 - c) reduces contamination of water from land use activities;
 - d) reduces river bank erosion;
 - e) improves local amenity;
 - f) enhances recreational activities;
 - g) improves fish spawning habitat;
 - h) assist in weed control.
- POL TANK 12** When making decisions about riparian land management in accordance with Policy POL TANK 11, the Council will account for management objectives related to land drainage and flood control, and regional biosecurity and where appropriate, support establishment of native plant species in riparian margins to contribute to improving the region's indigenous biodiversity, the collection of mahinga kai, taonga raranga and taonga rongoa and the mauri of the river. ^{180.21, 99.104, 99.7}
- POL TANK 13** The Council will support improvement of riparian management to meet the specified timeframes (in Policy POL TANK 27) consistent with to provide for the values in Policies POL TANK 11 and 12 by; ^{123.49, 210.134}
- a) working with industry groups and land owner collectives to identify where riparian management is to be improved;
 - b) providing information about appropriate riparian planting that assists in meeting the outcomes sought for riparian land values;
 - c) regulating cultivation, stock access^{consequential} and indigenous vegetation clearance activities that have a significant adverse effect on functioning of riparian margins in relation to water quality and aquatic ecosystem health in adjacent waterbodies;
 - d) providing funding assistance for riparian vegetation improvements;
- and
- e) when making decisions on applications for resource consent to;
 - (i) take into account benefits arising to the outcomes values in Policy POL TANK 11 and 12 as a result of the activity;
 - (ii) consider whether to waive the fees and charges required to process the application where;
 1. there is significant public benefit from the activity or the nature and scale of the activity results in significant ecosystem benefits; and
 2. the activity is not a requirement of any other resource consent.

Wetland and Lake Management

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

- ~~a) biodiversity and as a habitat for indigenous flora and fauna species;~~
- ~~b) recreation (where appropriate);~~
- ~~c) cultural uses including for tikanga Māori and mahinga kai;~~
- ~~d) their role in the hydrological cycle, including their effects on both high and low flows;~~
- ~~e) enhancement of water quality in connected waterbodies;~~
- ~~f) fishery habitat.~~ ^{123.5, 210.35, 210.36}

POL TANK 15 The Council will regulate activities in and adjacent to wetlands and lakes and will support and encourage the restoration and extension of natural wetlands and lakes and the reinstatement or creation of additional wetlands to provide for or improve the wetland values ~~(a) – (f) in Policy 14~~ by working with mana whenua, industry and community groups, land owners, the Hawke's Bay Fish and Game Council and other stakeholders in alignment with the Regional Biodiversity Strategy to:

- a) identify priority areas where wetland and lake management can be improved
- b) identify priority areas where wetland extent can be increased
- c) provide information to landowners about wetland and lake values and their management;
- d) provide funding assistance for wetland and lake protection and for construction of new wetlands and lakes;
- e) target resources where multiple objectives can be met;

and

- f) when making decisions on applications for resource consent to:
 - (i) take into account benefits arising to the values listed in OBJ TANK 15 Policy 14 as a result of the activity;
 - (ii) consider whether to waive the fees and charges required to process ~~the an~~ application to improve or maintain wetland or lake values where;
 - 1. there is significant public benefit from the activity or the nature and scale of the activity result in significant ecosystem benefits; and
 - 2. the activity is not a requirement of any other resource consent. ^{123.5, 210.35, 210.36, 58.17, 145.5}

Phormidium Management

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

- a) regular monitoring and reporting on the incidence of algae, including toxic phormidium and nutrient concentrations and ratios of nutrients in freshwater related to phormidium establishment;
- b) adopting applicable national guidelines for the monitoring and management of toxic algae;^{210.37}
- c) supporting national investigations into the incidence of toxic phormidium, the reasons for its establishment and measures to reduce the incidence;
- d) reducing nutrient and sediment inputs in accordance with Policies POL TANK 17 and 20;
- e) maintaining flushing flows;
- f) ensuring the public has information about phormidium risk, including as a result the accumulation of toxic algal mats as specified in Schedule 26.

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5.10.3 Policies: Managing Adverse Effects From Land Use on Water Quality (Diffuse Discharges)

Adaptive Approach to Nutrient and Contaminant Management

POL TANK 17 The Council will achieve or maintain the ~~2040 freshwater~~ target ~~attribute states or freshwater objectives in~~ Schedule 26 with landowners, industry groups, and other stakeholders and will implement the following measures;

- a) establish programmes and processes through Farm Environment Plans, Catchment Collectives and Industry Programmes to ensure land managers;
 - (i) adopt ~~industry~~ good ~~management~~^{180.9} practice;
 - (ii) identify critical source areas of contaminants at both property and catchment scale;
 - (iii) adopt effective measures to mitigate or reduce contaminant loss;
 - (iv) ~~ensuring prepare~~ nutrient management plans ~~are prepared~~ in catchments not meeting targets for dissolved nitrogen ~~according to the priority order specified in Schedule 28, the farm plan required for the property shall include the nitrogen loss rate and nitrogen loss target.~~ ^{124.54, 126.20, 135.25, 210.40}

POL TANK 18 The Council will achieve or maintain the ~~2040 freshwater attribute~~ target ~~attribute state or freshwater objectives in~~ Schedule 26 by;

- a) gathering information to determine sustainable nutrient loads;
- b) developing nutrient limits and a nutrient allocation regime if the management framework in ~~Policy POL TANK 17~~ is not leading to improved ~~nutrient~~ attribute states by the time this plan is reviewed;
- c) regulating land use change ~~to manage where there is a~~ significant risk of increased nitrogen loss;
- d) gathering and assessing information about environmental state and trends and the impact of land use activities on these;
- e) working with industry groups, landowners and other stakeholders to undertake research and investigation into;
 - (i) ~~contaminant nutrient~~ pathways, concentrations and loads in rivers and coastal receiving environments;
 - (ii) nutrient uptake and loss pathways at a property scale;
 - (iii) measures to reduce ~~contaminant nutrient~~ losses at a property as well as catchment scale including those delivered through industry programmes. ^{180.29}

~~**POL TANK 19** In catchments that do not meet objectives for dissolved nutrients specified in Schedule 26, the Council will ensure landowners, landowner collectives and industry groups have nutrient management plans according to the priority order in Schedule 28.~~ ^{124.54, 126.20, 135.25, 210.40}

Sediment Management

POL TANK 20 The Council will reduce adverse effects on freshwater and coastal aquatic ecosystems from eroded sediment, and from the phosphorus associated with this, by prioritising the following mitigation measures;

- a) regulating cultivation, ~~stock access~~ and vegetation clearance activities; ^{35.83, 124.32, 88.13, 140.5 consequential}
- b) targeting priority areas and activities for sediment loss management where there is high sediment loss risk and working with land managers to identify and manage critical source areas of contaminants at both property and catchment scale;
- c) informing land managers where land is vulnerable to erosion, using tools such as SedNet and LUC; and providing information about measures that reduce soil loss;
- d) recognising the benefits provided by tree planting and retirement of land for erosion control as well as for mitigating climate change effects and improving indigenous biodiversity by;
 - (i) targeting resources where multiple objectives can be met;
 - (ii) and supporting landowners to retire land, establish forests where appropriate, and plant trees on land with high actual or potential erosion risk;

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- e) Supporting and encouraging improved riparian management across all TANK catchments. ^{195.45}

Land Use Change and Nutrient Losses

POL TANK 21 The Council will ~~regulate production land use change to manage the remedy or mitigate~~ the potential impact of ~~increases in~~ diffuse discharge of nitrogen on freshwater quality objectives ~~by regulating land and water use changes that modelling indicates are likely to result in increased nitrogen loss~~ (modelled on an ~~average~~ annual, whole of ~~property or whole of farm or collective enterprise~~ basis, ~~while taking into account changes as a result of crop rotations~~^{180.31, 180.80}) and in making decisions on resource consent applications, the Council will take into account:

- a) whether ~~freshwater quality objectives or target attribute states~~ are being met in the catchment where the activity is to be undertaken ~~as a result of modelled nitrogen losses from the land use change;~~
- b) where any relevant TANK Industry Programme or Catchment Collective is in place the extent to which the changed ~~production~~ land use activity is consistent with the Industry Programme or Collective outcomes, mitigation measures and timeframes;
- c) any mitigation measures required, ~~(including those where model results are not available)~~ and timeframes by which they are to be implemented that are necessary to ensure the actual or potential ~~nitrogen~~ contaminant loss occurring from the property, in combination with other ~~nitrogen~~ contamination losses in the catchment will be consistent with meeting ~~2040 freshwater quality target attribute states in Schedule 26 objectives~~^{consequential}, including performance in relation to ~~industry good management~~ practice, efficient use of nutrients and minimisation of nutrient losses;

and will;

- d) avoid land use change that will result in increased nitrogen loss that contributes to ~~water quality objectives and~~ target ~~attribute states~~ in Schedule 26 for dissolved nitrogen not being met. ^{210.37, 210.42, 180.31, 135.27, 195.46, 54.73 et al consequential}

Stock Exclusion

~~**POL TANK 22** — The Council will regulate the exclusion of cattle, deer and pigs from rivers, lakes and wetlands, and when considering an application for resource consent or when making decisions about stock exclusion in Industry or Catchment Collective Plans or when making decisions about Farm Environment Plan requirements to take into account the following matters:~~

- ~~a) — assessment of sources, scale and significance of adverse effects of sediment, phosphorus, nitrogen and bacterial inputs to the water body that could effectively or efficiently be reduced by stock exclusion, bridging or culverting;~~
- ~~b) — identifying whether there are alternative measures to meet water quality outcomes and improve ecosystem health, including by managing bank erosion or reducing sediment losses to water in contributing areas, altering land uses, or providing reticulated water for stock;~~
- ~~e) — whether stock exclusion is practicable in the circumstances including in relation to:
 - ~~(i) — total costs of stock exclusion measures compared to expected water quality benefit; assessed in (a) and other possible adverse effects including stock welfare;~~
 - ~~(ii) — technical or practical challenges of any works required for stock exclusion to be effective;~~
 - ~~(iii) — potential costs and benefits provided by alternative measures compared to stock exclusion.~~~~

~~35.83, 124.32, 88.13, 140.5.~~

Industry Programmes and Catchment ~~Management Collectives~~ ^{29.14, 194.41, 58.22}

POL TANK 23 The Council will support the establishment and operation of Industry Programmes and Catchment Collectives and:

- a) ~~support development of industry good management practice by industry groups and support provision of ensure any~~ relevant information or expertise for making sustainable land management decisions ~~is~~

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- ~~available to farm operators land managers; consequential~~
- b) support local investigation and water monitoring programmes where information gaps exist;
- c) support development and use of ~~catchment scale~~ models that assist in identification and management of critical source areas;
- d) support collective catchment and farm scale decision making to meet target attribute states freshwater objectives and encourage local solutions and innovative and flexible responses to water quality issues; ~~58.22, 194.41, 29.14, 129.15 and 129.16 et al~~
- e) ~~work with water permit holders to encourage and support establishment of catchment collectives that address both freshwater quality objectives and stream flow management through environmental management programmes as specified in Schedule 30 and Schedule 36 and within the timeframes specified in Schedule 28.~~ ~~210.140 and 216, .222~~

POL TANK 24 The Council will continue to work with farm operators landowners, industry groups and other stakeholders to manage land and water use activities so that they meet 2040 target attribute states objectives for freshwater/aquatic ecosystems by: ~~194.41, 58.22, consequential~~

- a) further supporting the development of **Industry Programmes** ~~that contribute to meeting applicable freshwater objectives and~~ that;
 - (i) identify practices that contribute to meeting applicable target attribute states freshwater objectives;
 - (ii) specify timeframes for completion or adoption of measures to ~~reduce mitigate~~ contaminant losses;
 - (iii) ensure individual performance under an Industry Programme is ~~monitored audited~~;
 - (iv) provide annual reports to the Council on progressive implementation of measures identified in Industry Programme ~~s~~ Freshwater Farm Plans^{180.10 et al} established under Schedule 30 and progress towards meeting applicable target attribute states objectives for water quality;
 - (v) promote adoption of good ~~industry management~~ practice;
 - (vi) ensure that Industry Programmes are consistent with the requirements of Schedule 30;
- b) supporting farm operators landowners to establish **Catchment Collectives** to develop and implement environmental management plans that contribute to meeting applicable freshwater objectives and that;
 - (i) identify and adopt measures at a property scale and, collectively with other farm operators land managers, identify and adopt measures at a catchment scale that reduce contaminant losses or remedy or mitigate the effects of land use on target attribute states freshwater objectives;
 - (ii) specify timeframes for completion or adoption of measures to ~~reduce mitigate~~ contaminant losses; ~~135.29~~
 - (iii) ensure individual performance under a catchment collective is monitored;
 - (iv) provide annual reports to the Council on progressive implementation of measures identified in ~~landowner Catchment~~ Collectives established under Schedule 30 and progress towards meeting applicable target attribute states objectives for water quality;
 - (v) promote adoption of good ~~management agricultural~~ practice;
 - (vi) ensure programmes prepared by a Catchment Collective are consistent with the requirements of Schedule 30;
- c) Approving any ~~Landowner Catchment~~ Collective or Industry Programme developed under Schedule 30;
- d) Requiring^{29,194,209,238,180.33, 180.7} Auditing ~~of Catchment Landowner~~ Collective or Industry Programmes prepared and approved under Schedule 30 including auditing of member properties. ~~Consequential, 180. 135.29 et al~~

POL TANK 25 Where a farm operator landowner is not part of an Industry Programme or Catchment Collective, the Council will require development and implementation of a Freshwater Farm Environment Plan for the farm. ~~194.41, 58.22~~

Management and compliance.

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POL TANK 26 Where farm operators individuals are members of a **Catchment Collective** or **Industry Programme** but do not undertake their activity in accordance with the approved plan prepared in accordance with Schedules 28 or 30, or do not follow the agreed terms of membership of a Catchment Collective or Industry Programme the Council will;

- a) provide a conflict resolution service;
- b) where a farm operator n individual is no longer, or is deemed through conflict resolution processes not to be, a member the Council will;
- c) require the development of a Freshwater Farm Plan for that property within 6 months or;
- d) require an application for a land use consent to be made;
- e) take appropriate enforcement action. ^{194.41, 58.22}

Timeframes; Water and Ecosystem Quality

POL TANK 27 The Council will develop an implementation plan for this Plan Change with industry groups, landowners, water permit holders, tangata whenua, and other stakeholders and to ensure that the farm operator land owners and lease holders are engaged in industry or landowner Catchment Collective programmes or have prepared freshwater farm plans farm environmental plans within the timeframes in Schedule 28 and to ensure reporting (as specified in Schedule 30) on the milestones in Table 1 below. ^{120.102, 180.35, 126.21, 135.32, 123.61, 120.117, 124.32, 195.51 consequential}

Table 1: Milestones and Timeframes

Action	Activity	Milestone	Output to be reported on
Stock and Riparian Land Management			
1; Stock exclusion and Riparian planting	Stock excluded from rivers in flat and rolling hill country Riparian margins planted	Stock excluded by 2023	Km of stream with stock exclusion- Km of riparian margins planted
2; Stock exclusion and sediment mitigation	Stock access and sediment mitigation in hill country managed through environmental programme or farm plan	According to priority set out in Schedule 28 ⁹	Soil erosion and critical source area mitigation measures and timeframes for implementation
3; Riparian management	Shading and planting in Karamū catchment and Heretaunga plains	200km of waterway subject to planting programmes	River and streams in Karamū catchment with riparian planting for shade
Wetlands			
4; wetland management and improvement	Protection and restoration of existing wetlands	100ha in 5 years and 200ha in ten years from operative date	Hectares of protected and restored wetland
	Reinstatement or creation of additional wetland	100 ha reinstated or additional wetland	Hectares of new wetland
Nutrient Management			
5; Nutrient management	Nutrient management plans	<u>Farms have plans</u> according to priority set out in Schedule 28	Number of <u>farms properties</u> subject to nutrient plan

Amendments to table - 35.83, 124.32, 88.13, 140.5. consequential

5.10.4 Policies: Stormwater Management

Urban Stormwater Infrastructure

POL TANK 28 The adverse effects of stormwater quality and quantity on aquatic ecosystems and community well-being arising from existing and new urban development (including infill development) industrial ~~or and~~ trade premises and associated infrastructure, will be reduced or mitigated no later than 1 January 2025, by: ^{203.13}

- a) Requiring, through consent conditions, measures to help achieve the target attribute states in Schedule 26: ^{120.137, 127.22, 123.16, 210.49}
- b) ~~a)~~ Local Authorities adopting an integrated catchment management approach to the collection, treatment and discharge of stormwater; ^{63.33, 207.53}
- c) ~~b)~~ requiring stormwater to be discharged into a reticulated stormwater network where such a network is available or will be made available as part of the development;
- d) ~~b)~~ requiring ~~increased~~ retention or detention of stormwater where necessary ^{63.35, 207.53}, while not exacerbating flood hazards; ^{63.35, 207.53}
- e) ~~b)~~ having particular regard to significant values of the receiving environment being either a TANK estuarine system, outstanding waterbody or wetland; ^{126.22}
- f) ~~b)~~ taking into account site specific constraints including areas with high groundwater and, source protection zones and extents ^{207.53, 63.35}; ~~and/or an outstanding water body~~
- g) ~~b)~~ taking into account the collaborative approach of HBRC, Napier City and Hastings District councils in managing urban growth on the Heretaunga Plains as it relates to stormwater management;
- h) ~~b)~~ taking into account the effects of climate change when providing for new and upgrading existing infrastructure;
- i) ~~b)~~ adopting, ~~where practicable~~, a good practice approach to stormwater management including adoption of Low Impact Design for stormwater systems; ^{123.62} and adherence to relevant industry guidelines ^{203.13}
- j) ~~b)~~ amending district plans, standards, codes of practice and bylaws to specify design standards for stormwater reticulation and discharge facilities through consent conditions, that will achieve the freshwater objectives set out in this plan;
- k) ~~b)~~ developing and making available to the public advice about good stormwater management options (including through HBRC's guidelines);
- l) ~~b)~~ encouraging, through education and public awareness programmes, greater uptake and installation of measures that reduce risk of stormwater contamination;
- m) ~~b)~~ requiring, no later than 1 January 2025, the preparation and implementation of a site management plan and good site management practices on industrial and or trade premises with a high risk of stormwater contamination in the TANK catchments and those in the high priority areas: ^{10.4}
 - (i) of the Ahuriri catchment;
 - (ii) of the Karamū River and its tributaries;
 - (iii) of land over the unconfined aquifer; and
 - (iv) within identified drinking water Source Protection Zones.

Source Control

POL TANK 29 Sources of stormwater contamination and contaminated stormwater will be reduced by:

- a) specifying requirements for the design and installation of stormwater control facilities on sites where there is a high risk of freshwater contamination arising from either the direct discharge of stormwater to freshwater, the discharge of stormwater to land where it might enter water or the discharge to a stormwater or drainage network;
- b) requiring the implementation of good site management practices on all sites where there is a risk of stormwater contamination arising from the use, or storage of contaminants including the management of solid contaminants and debris to avoid these entering stormwater; ^{233.16}
- c) controlling, and if necessary avoiding, activities that will result in water quality standards not being

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able to be met.

Dealing with the Legacy

POL TANK 30 Aquatic ecosystem health improvements and community wellbeing and reduced stormwater contamination will be achieved by HBRC working with the Napier City and Hastings District Councils requiring discharges from stormwater networks to meet, after reasonable mixing^{207.54}:

- a) ~~water quality objectives (where they are degraded by stormwater) and the identification of measures that ensure stormwater discharges will achieve at least:~~
- ~~(i) the 80th percentile level of species protection in receiving waters by 1 January 2025; and~~
 - ~~(ii) the 95th percentile level³ of species protection by 31 December 2040.~~^{10.5, 123.64, 132.92, 162.23, 135.35, 210.51}

and

- a) ~~b) except as in (a) above,~~ The 2040 target attribute states management objectives in Schedule 26 for freshwater and estuary health through resource consent conditions, including requirements;
- (i) to apply the Stream Ecological Valuation methodology to inform further actions;
 - (ii) to install treatment devices within the drainage network where appropriate,
 - (iii) to avoid solid contaminants and debris entering stormwater;^{233.18}
 - (iv) for stream planting/re-alignment for aquatic ecosystem enhancement;
 - (v) for wetland creation, water sensitive design and other opportunities for increasing stormwater infiltration where appropriate;
 - (vi) recognise existing and planned investments in stormwater infrastructure.
- b) for attributes not accounted for in Schedule 26, the ANZECC Guidelines 2018 will be used to achieve, after reasonable mixing;^{63.36}
- (i) the 80th percentile level of species protection in receiving waters by 1 January 2025; and
 - (ii) the 95th percentile level of species protection by 31 December 2040.

Consistency and Collaboration; Integration of city, district and regional council rules and processes.

POL TANK 31 To assist in achieving the freshwater quality objectives 2040 target attribute states in this Plan Schedule 26A^{consequential}, HBRC, with the Napier City and Hastings District Councils will, no later than 1 January 2025, implement similar stormwater performance standards including through the adoption of:

- a) good practice engineering standards;
- b) consistent plan rules and bylaws;
- c) shared information and approaches to education and advocacy;
- d) shared information and processes for monitoring and auditing individual site management on sites at high risk of stormwater contamination, including clarification of roles and responsibilities for compliance, monitoring and enforcement^{207.55, 63.37};
- e) consistent levels of service for stormwater management and infrastructure design;
- f) an integrated stormwater catchment management approach, including roles and responsibilities for managing stormwater^{207.55, 63.37};
- g) undertaking a programme of mapping the stormwater networks and recording their capacity;
- h) aligning resource consent processes and having joint hearings to achieve integrated management of proposals for urban activities particularly in respect of stormwater, water supply and wastewater provisions and implementation of the Heretaunga Plains Urban Development Strategy (2017).

Ahuriri Catchment

Pol tank 32 The Council will support the development of a Te Whanganui a Orotū (Ahuriri Estuary)^{consequential} Integrated

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

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Catchment Management Plan by;

- a) improving the quality of freshwater entering ~~the~~ Te Whanganui a Orotū (Ahuriri Estuary) ^{consequential} through the measures included in this plan; and
- b) carrying out investigations to help better understand processes and functions occurring within the estuary and its connected freshwater bodies.

5.10.5 Policies: Monitoring and Review

POL TANK 33 The Council will recognise and support monitoring according to mātauranga Māori and will recognise and support local scale monitoring to assess ecosystem health and mauri including water quality in relation to identified values and its contribution to:

- a) understanding local ecosystem health and land and water use impacts on it;
- b) enabling the kaitiaki role of tangata whenua and resource users' responsibilities for sustainable freshwater management to be met;
- c) assessing effectiveness of mitigation measures adopted to meet freshwater objectives;
- d) understanding state and trends of local water quality;
- e) adding to the regional knowledge about environmental state and trends;

by;

- f) developing protocols and procedures for monitoring appropriate to the purpose of the monitoring;
- g) providing assistance and advice;
- h) supporting the provision of monitoring materials;
- i) collating and reporting on data as appropriate.

POL TANK 34 Council will meet regularly with representatives from TANK stakeholder groups to:

- a) review and report on the TANK implementation plan;
- b) identify issues arising and develop measures to enable their resolution.

POL TANK 35 The Council will monitor and report on the effectiveness of the TANK water quality management policies and rules and to assist in making decisions about reviewing or changing this management framework, the Council will:

- a) continue to monitor instream water quality and review and report on the progress towards and achievement of the water quality objectives in Schedule 26 and according to Objectives 2 and 3 of this Plan in its regular State of the Environment monitoring;
- b) monitor and report on the state of riparian land and wetlands, and carry out regular ecosystem habitat assessments, including native fish monitoring and through the application of mātauranga Māori tools and approaches when they are developed;
- c) monitor the progress towards the milestones listed in Policy POL TANK 27, according to timeframes specified in Schedule 28 and collate and report annually on information about;
- d) the nature and extent of the mitigation measures being adopted to meet water quality and/or quantity outcomes through Catchment Collectives, Industry Programmes and Farm Plans;
- e) the establishment of Catchment Collectives and assess progress in implementing the measures specified in their environment plans;
- f) the preparation of Farm Environment Plans and assess progress in implementing the measures specified in that plan;
- g) work with Industry Groups to collate information annually on the functioning and success of any Industry Programme in implementing measures specified in the Industry Programme;
- h) along with the Napier City Council and Hastings District Council, report annually on progress towards the improvement of the stormwater network, including reporting on the preparation of Site Management Plans for activities at risk of contaminating stormwater in urban areas;

And

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- i) ~~commence a review of these provisions within ten years of <operative date> in accordance with section 79 of the RMA.~~^{-195.59, 135.38}

5.10.6 Policies: Heretaunga Plains Groundwater Levels and Allocation Limits

Heretaunga Plains Aquifer Management

POL TANK 36 The Council recognises the actual and potential adverse effects of groundwater abstraction in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~ on:

- a) groundwater levels ~~and aquifer depletion~~^{123.72};
- b) flows in connected surface waterbodies;
- c) flows of the Ngaruroro River;
- d) groundwater quality through risks of sea water intrusion ~~and water abstraction~~^{123.72};
- e) tikanga and mātauranga Māori;

and will adopt a staged approach to groundwater management that includes;

- f) avoiding further adverse effects by not ~~allowing granting new consents to take and use groundwater new water use~~^{63.4, 99.12}
- g) reducing existing levels of water use;
- h) mitigating the adverse effects of groundwater abstraction on flows in connected water bodies;
- i) gathering information about actual water use and its effects on stream depletion;
- j) monitoring the effectiveness of stream flow maintenance and habitat enhancement schemes;
- k) including plan review directions to assess effectiveness of these measures.

POL TANK 37 In managing the allocation and use of groundwater in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~, the Council will;

- a) adopt an interim allocation limit 90 million cubic meters per year based on ~~the A~~actual and Rreasonable water use ~~prior to 2017~~^{99.105}
- b) avoid re-allocation of any water that might become available within the interim groundwater allocation limit or within the limit of any connected water body until there has been a review of the relevant allocation limits within this plan;
- c) manage the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~ as an over-allocated management unit and prevent any new allocations of groundwater;
- d) when considering applications in respect of existing consents due for expiry, or when reviewing consents, to;
 - (i) allocate groundwater the basis of the maximum quantity that is able to be abstracted during each year or irrigation season expressed in cubic meters per year;
 - (ii) apply an assessment of aActual and rReasonable use ~~that reflects land use and water use authorised in the ten years up to August 2017~~^{194.50} (except as provided by ~~Policy POL TANK 50~~);
- e) mitigate stream depletion effects on lowland streams by providing for stream flow maintenance and habitat enhancement schemes.

POL TANK 38 The Council will restrict the re-allocation of groundwater^{29.24} to holders of permits to take and use water in the Heretaunga Plains Groundwater Quantity Area ~~Water Management Unit~~ issued before 2 May 2020 and will review permits or allocate water according to the plan policies and rules either:

- a) upon expiry of the consent; or
- b) in accordance with a review of all applicable permits within ten years of <the operative date>; whichever is the sooner.

Flow maintenance

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POL TANK 398 ~~When assessing applications to take groundwater in the Heretaunga Plains Water Management Unit the Council will:~~

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

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

- a) consult with iwi and other relevant parties to investigate the environmental, technical, cultural, social^{180.42} and economic feasibility of options for stream flow maintenance and habitat enhancement schemes including water storage and release options and groundwater pumping and discharge options that:
 - (i) maintain stream flows in lowland rivers above trigger levels where groundwater abstraction is depleting stream flows, and
 - (ii) improve oxygen levels and reduce water temperatures.
- b) determine the preferred solutions taking into account whether:
 - (i) wide-scale aquatic ecosystem benefits are provided by maintaining stream flow across multiple streams
 - (ii) multiple benefits can be met including for flood control and climate change resilience
 - (iii) the solutions are efficient and cost effective
 - (iv) scheme design elements to improve ecological health of affected water bodies have been incorporated
 - (v) opportunities can be provided to improve public access to affected waterways.
- c) develop and implement a funding mechanism that enables the Council to recover the costs of developing, constructing and operating stream flow maintenance and habitat enhancement schemes from permit holders, including where appropriate,
 - (i) management responses that enable permit holders to manage local solutions and
 - (ii) develop any further plan change within an agreed timeframe if necessary to implement a funding solution.
- d) where schemes are operational, either
 - (i) require abstraction to cease when applicable stream flow maintenance trigger is reached;
 - or
 - (ii) require permit holders to contribute to and participate in the scheme
- e) ensure that stream flow maintenance and habitat enhancement schemes are constructed and operating within ten years of the operative date of the Plan while adopting a priority regime according to the following criteria:
 - (i) solutions that provide wide-scale benefit for maintaining stream flow across multiple streams
 - (ii) solutions that provide flow maintenance for streams that are high priority for management action because of low oxygen levels.

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- f) ~~review as per POL TANK 42 if no schemes are found to be feasible.~~ ^{129.2. 194.53}

POL TANK 40 When assessing applications for a stream flow maintenance and habitat enhancement scheme the Council will have regard to:

- a) opportunities for maximising the length of waterbodies where habitat and stream flow is maintained or enhanced;
- b) any improvements to water quality, especially dissolved oxygen, and ecosystem health as a result of the stream flow maintenance and habitat enhancement schemes;
- c) the duration and magnitude of adverse effects as a consequence of flow maintenance scheme operation;
- d) the extent to which the applicant has engaged with mana whenua;
- e) ~~and will;~~
 - (i) ~~allow site to site transfer of water to enable the operation of a flow enhancement scheme;~~
 - (ii) ~~enable water permit holders to work collectively to develop and operate stream flow maintenance and habitat enhancement schemes consistent with the requirements of Schedule 36~~
 - (iii) ~~impose consent durations of 15 years that are consistent with the term for groundwater takes affected by stream flow maintenance requirements, except where stream flow maintenance is being provided by significant water storage infrastructure in which case consent duration is consistent with the scale of the infrastructure.~~ ^{Consequential to POL TANK 39}

POL TANK 41 The Council will ~~remedy/mitigate~~ ^{99.16} the stream depletion effects of groundwater takes in the Heretaunga Plains Water Management Unit on the Ngaruroro River, in consultation with mana whenua, land and water users and the wider community through:

- a) further investigating the environmental, technical, cultural, social, ^{180.42} and economic feasibility of a water storage and release scheme to off-set the cumulative stream depletion effect of groundwater takes; and
- b) if such a scheme is feasible, ~~to developing~~ ing options for funding, construction and operation of such a scheme including through a targeted rate;
or
- c) if such a scheme is not feasible, ~~to reviewing~~ ing alternative methods and examine the costs and benefits of those.

Groundwater management review

POL TANK 42 After water has been re-allocated and consents reviewed in accordance with ~~Policies POL TANK~~ 36 - 38, the Council will commence a review of these provisions within ten years of <operative date> in accordance with Section 79 of the RMA and will determine:

- a) the amount of water allocated in relation to the interim allocation limit;
- b) the total annual metered groundwater use for the Heretaunga Plains Groundwater Quantity Area Water Management Unit during the ten years prior to the time of review;
- c) if any changes in the relationship between groundwater abstraction and the flows of rivers and groundwater levels have occurred;
 - (i) the extent of any stream flow maintenance, augmentation, or and ^{194.58} habitat enhancement schemes including in relation to;
 - (ii) the length of stream subject to flow maintenance;
 - (iii) the extent of habitat enhancement including length of riparian margin improvements, and new or improved wetlands;
 - (iv) the magnitude and duration of stream flow maintenance scheme operation;
 - (v) trends oxygen and temperature levels in affected streams.

And will;

- d) In relation to plan objectives and adverse effects listed in Policy POL TANK 36, assess;

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- (i) the effects of the groundwater takes on stream flows;
 - (ii) effectiveness of any^{29.27} stream flow maintenance, augmentation, or habitat enhancement^{194.58} schemes in maintaining water flows, groundwater levels^{29.27} and improving water quality;
 - (iii) effectiveness of habitat enhancement including through improved riparian management and wetland creation in meeting freshwater objectives;
- e) review the appropriateness of the allocation limit in relation to the freshwater objectives;
 - f) develop a plan change to ensure any over-allocation is phased out.

5.10.7 Policies: Surface Water Low Flow Management

Flow Management Regimes; Tūtaekurī, Ahuriri, Ngaruroro and Karamū

POL TANK 43 The Council will manage river flows and lake or wetland water levels affected by surface water abstraction activities, including groundwater abstraction in Zone 1, during low flow periods so that they meet objectives for aquatic ecosystem health, mauri, tikanga Māori values, and other instream values by;

For the **Ngaruroro River**;

- a) maintaining the existing minimum flows for the Ngaruroro River and its tributaries;
- b) reducing the effects of abstraction from the mainstem and connected groundwater in Zone 1 by reducing the allocation limit for consumptive use at times of low flow^{129.3} for the Ngaruroro River;
- c) establishing allocation limits for the river, connected groundwater in Zone 1 and tributaries to account for the cumulative effects of all abstraction and provide water for abstraction at a reasonable security-reliability of supply;
- d) establishing a limit for groundwater abstraction in the upper Ngaruroro Catchment based on existing ~~a~~Actual and ~~r~~Reasonable use until more information about the nature and extent of that resource is available.

For the **Tūtaekurī River**;

- e) increasing the minimum flow for the Tūtaekurī River and the Mangaone tributary and maintaining the minimum flow for the Mangatutu tributary;
- f) reducing the effects of abstraction from the mainstem and connected groundwater in Zone 1 by reducing the allocation limit for consumptive use at times of low flow^{129.3} for the Tūtaekurī River;
- g) establishing allocation limits for the river, connected groundwater in Zone 1 and tributaries to account for the cumulative effects of all abstraction and provide water for abstraction at a reasonable security-reliability of supply;
- h) establishing a limit for groundwater abstraction in the upper Tūtaekurī Catchment based on existing ~~a~~Actual and ~~r~~Reasonable use until more information about the nature and extent of that resource is available.

For the **Karamū River**;

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

For the **Ahuriri Catchment Freshwater Streams**;

- k) establishing limits for ground and surface water abstraction based on existing ~~a~~Actual and ~~r~~Reasonable use until more information about the nature and extent of that resource is available.

Paritua/and Karewarewa Streams

POL TANK 44 The Council ~~will~~recognises the connectivity between ground and surface water abstraction on the

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flows in the Paritua/ ~~and~~ Karewarewa Streams and their tributaries, acknowledges the contribution of flows from these streams to the flows in the Awanui Stream, Karamū River and the Heretaunga Plains ~~Groundwater Quantity Area Water Management Unit~~, and their importance to local marae and will work with water permit holders, landowners and tangata whenua to; ^{120.49, 123.79, 195.66}

- a) further refine the Heretaunga Plains Aquifer Model to improve model outputs for this catchment;
- b) investigate opportunities for wetland creation to improve hydrological functioning and water quality in the river, especially during low flows;
- c) improve riparian management to provide shade, reduce macrophyte growth, increased dissolved oxygen levels and decrease water temperature;
- d) carry out resource investigations to understand natural stream flow regimes and feasible options for remediation including;
 - (i) managed aquifer recharge;
 - (ii) flow enhancement from groundwater;
 - (iii) streambed modification to reduce losses to groundwater in highly conductive reaches;
- e) enable and support water permit holders and landowners to collectively manage the maintenance of specified flows in the Paritua/Karewarewa Streams;
- f) provide for water to be diverted from the Ngaruroro for the enhancement of flows in the Paritua Stream.

General Water Allocation Policies

POL TANK 45 When assessing applications to take water the Council will;

- a) provide that the ~~taking and use abstraction~~ of water that has been taken and impounded or stored at times of high flow ~~and stored~~ and released for subsequent use, is not subject to allocation limits; ^{58.26}
- b) require water meters to be installed for all water takes authorised by a water permit and water use to be recorded and reported via telemetry provided that telemetry will not normally be required where the consented rate of take is less than 5l/sec ~~or where there are technical limitations to its installation~~; ^{123.80, 203.19}
- c) ensure water allocation from tributaries is accounted for within the total allocation limit for the relevant zone and that the total abstraction from any tributary does not exceed 30% of the MALF for that tributary unless otherwise specified in Schedule 31;
- d) offset the stream depletion effects of any groundwater takes in Zone 1, that were not previously considered stream depleting, by managing them as if they were in the Heretaunga Plains Groundwater Quantity Area Water Management Unit; and
 - (i) require contributions to an applicable lowland stream enhancement programme scheme at a rate equivalent to the stream depletion effect consistent with Policy POL TANK 39 once such schemes are operational; ^{29.25, 29.28, and 238.11}or
 - (ii) require the water take to cease when the minimum flow for the affected river is reached if a permit holder does not contribute under clause (i) where there is an applicable lowland stream enhancement; and
 - (iii) allow further technical assessments to determine the extent of stream depletion effect.

Water Use and Allocation – Efficiency

POL TANK 46 The Council will ensure efficient management of the allocation of water available for abstraction by:

- a) ensuring allocation limits and allocations of water for abstraction are calculated with known ~~security~~ reliability of supply;
- b) ensuring water is allocated to meet Aactual and Rreasonable requirements use ^{29.61, 194.64};
- c) encouraging and supporting flexible management of water by permit holders so that the allocatable water can be used efficiently and within specified limits;

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- d) on-going data collection and monitoring of water resources and water use to better understand patterns of water availability and water use and further develop efficient and effective water management provisions.

POL TANK 47 When considering applications for resource consent, the Council will ensure water is allocated and used efficiently by:

- a) ensuring that the ~~technical means of using~~ use of water ~~is are physically~~ efficient through;
 - (i) allocation of water for irrigation end-uses based on soil, climate and ~~plant crop~~ needs;
 - (ii) requiring the adoption of good practice water use technology and processes that minimise the amount of water ~~lost from the soil profile-wasted~~; and^{59.11, 60.10, 118.2}
 - (iii) the use of water meters;
- b) using the IRRICALC water demand model ~~if available for the land use being applied for (or otherwise by a suitable equivalent approved by Council)^{192.13} that utilises crop type, soil type and climatic conditions^{8.44}~~ to determine efficient water allocations for irrigation uses;
- c) allocating water for irrigation on the basis of an 80% minimum water application efficiency, ~~standard of 80% and 95% reliability of supply on a reliability standard that meets demand 95% of the time,^{59.14, 66.12, 118.3, 58.27, 201.43}~~
- d) requiring all non-irrigation water takes (except as provided by ~~POL TANK Policy~~ 50 for municipal and papakāinga supplies) to show how water use efficiency of at least 80% is being met and is consistent with any applicable ~~industry~~ good management practice;
- e) requiring new water takes and irrigation systems to be designed and installed in accordance with industry codes of practice and standards;
- f) requiring irrigation and other water use systems to be maintained and operated to ensure on-going efficient water use in accordance with ~~any^{29.30}~~ applicable industry codes of practice.

Water Use Change/Transfer

POL TANK 48 When considering any application to change the water use specified by a water permit, or to transfer a point of take to another point of take, ~~to consider~~ the Council will take into account:

- a) changes to the nature, location, scale and intensity of effects on:
 - (i) total water use
 - (ii) specified minimum flows and levels or other water users' access to water
 - (iii) the water body values listed in Schedule 25 and in the objectives of this Plan
 - (iv) the patterns of water use over time, including changes from seasonal use to water use occurring throughout the year or changes from season to season
 - (v) water quality^{132.77, 132.109, 195.69}
- and will consider declining applications:
- b) ~~declining applications~~ where the transfer is to another water quantity area management zone unless;
 - (i) new information provides more accurate specification of applicable zone boundaries;
 - (ii) where the lowland tributaries of the Karamū River are over-allocated, whether the transfer of water take from surface to groundwater provides a net beneficial effect on surface water flows;
 - c) to change/transfer water away from irrigation of the versatile land of the Heretaunga Plains for primary production especially food production, except where a change of use and/or transfer is for;
 - (i) a flow enhancement or ecosystem improvement scheme, subject to clause (a); or
 - (ii) the efficient delivery of water supplies and to meet the communities' human health needs for water supply, including for marae and papakāinga, subject to clause (a)^{3.19}
 - d) in over-allocated quantity areas, to transfer allocated but unused water
 - e) for a change of use from frost protection to any other end use.^{210.69}
- ~~a) effects on specified minimum flows and levels or other water users' access to water resulting from any changes to the rates or volume of take;~~

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- ~~b) any alteration to the nature, scale and location of adverse effects on the water body values listed in Schedule 25 and in the objectives of this Plan;~~
- ~~c) effects of the alteration to the patterns of water use over time, including changes from seasonal use to water use occurring throughout the year or changes from season to season;~~
- ~~d) except where a change of use and/or transfer is for the purpose of a flow enhancement or ecosystem improvement scheme, declining applications to transfer water away from irrigation end uses in order to protect water availability for the irrigation of the versatile land of the Heretaunga Plains for primary production especially the production of food;~~
- ~~e) in Water Quality Management Units that are over-allocated, ensuring that transfers do not result in increased water use and to prevent the transfer of allocated but unused water;~~
- ~~f) declining applications for a change of use from frost protection to any other end use;~~
- ~~g) enabling the transfer of a point of take and change of water use to municipal water supplies, including for marae and papakāinga, (not including transfer to industrial uses above 15m³/day) from any other use for the efficient delivery of water supplies and to meet the communities' human health needs for water supply, subject to clause (b).~~

Water Allocation - Permit Duration

POL TANK 49 When ~~considering making decisions about~~ applications ~~for resource consent~~ to take and use water, the Council will set common expiry dates ~~for water permits to take water in each water management zone,~~ that enables consistent and efficient management of the resource, and will set durations that provide a periodic opportunity to review effects of the cumulative water use and to take into account potential effects of changes in:

- a) knowledge about the water bodies;
- b) over-allocation of water;
- c) patterns of water use;
- d) development of new technology;
- e) climate change effects;
- f) ~~efficacy of~~ flow enhancement and aquifer recharge^{29.32} schemes and any riparian margin upgrades; and the Council;
- g) will impose consent durations of 15 years according to specified water quantity area Management Unit expiry dates. Future dates for expiry or review of consents within that catchment are every 15 years thereafter;
- h) will impose a consent duration of up to 30 years for municipal supply ~~consistent with the most recent HPUDS~~^{63.13, 207.13} and will impose consent review requirements that align with the expiry of all other consents in the applicable quantity area management unit;
- i) will impose a consent duration for significant water storage infrastructure that is consistent with the scale of infrastructure^{99.17, 99.107, 180.45, 193.8};
- j) may grant consents granted within three years prior to the relevant common catchment expiry date with a duration to align with the second common expiry date, except where the application is subject to section 8.2.4 of the RRMP).

Water Allocation - Priority

POL TANK 50 In making decisions about resource consent applications for municipal and papakāinga water supply the Council will ensure the water needs of future community growth are met within water limits and;

- a) allocate water for population and urban development projections ~~for the area~~^{63.52} according to estimates provided by the HPUDS (2017) to 2045;
- b) calculate water demand according to existing and likely residential, non-residential, and non-residential (e.g. schools, hospitals, commercial and industrial)^{63.14, 207.14} demand within the expected reticulation areas; and

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- (i) require that water demand and supply management plans are developed and adopted and industry good management practice targets for water infrastructure management and water use efficiency including whether an Infrastructure Leakage Index of 4 or better can be achieved;
- (ii) seek that the potential effects of annual water volumes are reflected in level of water supply service and reliability of supply objectives in asset management plans and bylaws for water supply;
- c) work collaboratively with Napier City and Hastings District Councils to:
 - (i) develop an integrated planning approach ~~thorough HPUDS~~ that gives effect to the National Policy Statements within the limits of finite resources;
 - (ii) develop a good understanding of the present and future regional water demand and opportunities for meeting this;
 - (iii) identify communities at risk from low water reliability or quality and investigate reticulation options.

POL TANK 51 When making water shortage directions under Section 329 of the RMA, occurring when rivers have fallen below minimum flows and water use has decreased or ceased according to permit conditions, the Council will establish and consult with an emergency water management group that shall have representatives from Napier ~~Council, and~~ Hastings District Councils, ~~Fire and Emergency New Zealand~~ NZ Fire Service, Hawke's Bay District Health Board, iwi authorities and Ministry of Primary Industries^{13.12}, to make decisions about providing for water uses in the following priority order;

- a) water for the maintenance of public health;
- b) water necessary for the maintenance of animal welfare;
- c) water essential for community well-being and health;
- d) water essential for survival of horticultural tree crops;
- e) uses where water is subject to seasonal demand for primary production or processing;
- f) uses for which water is essential for the continued operation of a business, not provided for by (e) except where water is subject to seasonal demand for primary production or processing.^{135.48}
- g) The following uses will not be authorised under a water shortage direction:
 - (i) use of water not associated with the continued operation of a business or community well-being;
 - (ii) non-essential amenity uses such as private swimming pools and car washing.

Takes not subject to any restrictions are:

- h) firefighting uses;
- i) non-consumptive uses;

Over-Allocation

POL TANK 52 The Council will phase out over-allocation by;

- a) preventing any new allocation of water (not including any reallocation in respect of permits issued before 2 May 2020, or high flow allocations);^{29.34, 99.19, 180.47, 193.9, 194.72}
- b) for applications in respect of existing consents due for expiry or when reviewing consents, to:
 - (i) allocate water according to Actual and Reasonable use demonstrated actual and reasonable need^{194.72} (except as provided for by POL TANK Policy 50)
 - (ii) impose conditions that require implementation of industry good management practice for efficiency of water use gains to be made, including through altering the volume, rate or timing of the take, and requesting providing information to verify efficiency of water use relative to industry good management practice standards;^{82.12}
- c) provide for, within the duration of the consent, meeting water efficiency standards where hardship can be demonstrated;
- d) reducing the amount of water permitted to be taken without consent, including those provided for by

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- Section 14 (3)(b) of the RMA, except for authorised uses existing before 2 May 2020;
- e) encouraging voluntary reductions, site to site transfers (subject to clause (f)) or promoting water augmentation/harvesting;
 - f) prevent site to site transfers of allocated but unused water that does not meet the definition of ~~a~~Actual and ~~R~~ use;
 - g) enabling and supporting permit holders to develop flexible approaches to management and use of allocatable water within a management zone including through catchment collectives, water user groups, consent or well sharing or global water permits;
 - h) enabling and supporting the rostering of water use or reducing the rate of takes in order to avoid water use restrictions at minimum or trigger flows.

Frost Protection, temporary, and non-consumptive water takes

POL TANK 53 When considering applications to take water for frost protection, temporary, and non-consumptive water takes,^{203.21} the Council will avoid, remedy or mitigate actual and potential effects of the take on its own or in combination with other water takes;

- a) from groundwater in the Heretaunga Plains Groundwater Quantity Area Water Management Unit on;
 - (i) neighbouring bores and existing water users;
 - (ii) connected surface water bodies;
 - (iii) water quality as a result of any associated application of the water onto the ground where it might enter water;
- b) from surface water on;
 - (i) instantaneous flow into the surface water body;
 - (ii) fish spawning and existing water users;
 - (iii) applicable minimum flows during November to April;
 - (iv) water quality as a result of any associated application of the water onto the ground where it might enter water;

By;

- c) requiring applicants to demonstrate non-water reliant alternatives have been investigated and provide evidence as to why they are not appropriate;^{8.45}
- d) ~~e~~taking into account any stream depletion effects of groundwater takes;
- e) ~~d~~imposing limits in relation to minimum flows or groundwater levels;
- f) ~~f~~requiring water metering, monitoring and reporting use of water for frost protection, and other activities if necessary. Consequential.

5.10.8 Policies: High Flow Allocation

Adverse Effects - Water Damming

POL TANK 54 When assessing applications to dam water and to take water from the dam impoundment, the Council will avoid, remedy or mitigate adverse effects of;

- a) potential changes to water quality arising from subsequent changes to land use activities that may occur as a result of water being allocated for take and use from the dam and whether relevant freshwater quality objectives can be met;
- b) the dam and any associated lake or reservoir, and any effects of the volume, velocity, frequency, and duration of flow releases from the dam, either by itself or cumulatively with other storage structures or dams, on;
 - (i) the uses and values for any water body identified in the objectives or Schedule 25;
 - (ii) water levels and flows in connected water bodies, including lakes and wetlands;
 - (iii) water quality, including effects on temperature and management of periphyton in connected water bodies;

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- (iv) river ecology and aquatic ecosystems, including passage of fish and eels, indigenous species habitat and riparian habitat, including in relation to the storage impoundment;
 - (v) groundwater recharge;
 - (vi) downstream land, property and infrastructure at risk from failure of the proposed dam;
 - (vii) other water users;
 - (viii) downstream river bed stability, including through sediment transfer and management of vegetation in river beds;
- c) whether there are practicable alternatives;

and, except as prohibited by [Policy POL TANK 58](#), will limit the amount of flow alteration so that the damming of surface water either on its own or in combination with other dams or water storage in a catchment does not cumulatively adversely affect the frequency of flows above three times the median flow by more than a minor amount and provided that any dam in combination with other dams or high flow takes shall not cause changes to the river flow regime that are inconsistent with specified flow triggers.

Adverse Effects - Water Take and Storage

POL TANK 55 When assessing applications to take water for off-stream storage or to take water from the impoundment the Council will avoid remedy or mitigate adverse effects of;

- a) potential changes to water quality arising from subsequent changes to land use activities as a result of water being allocated for take and use from the impoundment and whether relevant freshwater quality objectives can be met;
- b) the magnitude, frequency, duration and timing of water takes either by itself or cumulatively with other storage structures or dams, on;
 - (i) the uses and values for any water body identified in the objectives;
 - (ii) water levels and flows in connected water bodies, including lakes and wetlands;
 - (iii) water quality, including effects on temperature and management of periphyton in connected water bodies;
 - (iv) river ecology and aquatic ecosystems, including passage of fish and eels, indigenous species habitat and riparian habitat, including in relation to the storage impoundment;
 - (v) groundwater recharge;
 - (vi) downstream land, property and infrastructure at risk from failure of the proposed storage structure;
 - (vii) other water users;

and will limit the amount of flow alteration so that the taking of surface water does not cumulatively adversely affect the frequency of flows above three times the median flow by more than a minor amount and provided that;

- (viii) the high flow take ceases when the river is at or below the median flow;
- (ix) such high flow takes do not cumulatively exceed the specified allocation limits;
- (x) any takes to storage existing as at 2 May 2020 will continue to be provided for within new allocation limits and subject to existing flow triggers.

Benefits of Water Storage and Augmentation

POL TANK 56 The Council will recognise beneficial effects of water storage and augmentation schemes, including water reticulation in the TANK catchments and out-of-stream- storage, and when considering applications for resource consent will take into account the nature and scale of the following criteria;

- a) benefits for aquatic organisms and other values in Schedule 25 or in relation to the objectives of this plan in affected water bodies;
- b) whether water availability is improved or the level to which the security of supply for water users is enhanced;
- c) whether the proposal provides for the productive potential of un-irrigated land or addresses the

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adverse effects of water allocation limits on land and water users, especially in relation to primary production on versatile land;

- d) whether the proposal provides benefits to downstream water bodies at times of low flows provided through releases from storage or the dam;
- e) the nature and scale of potential ecosystem benefits provided by the design and management of the water storage structure, its margins and any associated wetlands;
- f) benefits for other water users including recreational and cultural uses and any public health benefits;
- g) other community benefits including improving community resilience to climate change;
- h) whether the proposal provides for renewable electricity generation.

POL TANK 57 The Council will carry out further investigation to understand the present and potential future regional water demand and supply including for abstractive water uses and environmental enhancement and in relation to climate [prior to the review of the planning provisions as per POL TANK 42^{63.17, 207.17}](#). It will consider water storage options according to the criteria in [Policy POL TANK 56](#) in consultation with local authorities, tangata whenua, industry groups, resource users and the wider community when making decisions about water augmentation proposals in its Annual and Long Term Plans.

POL TANK 58 The Council will protect the instream water values and uses identified in Objectives 11 and 12 for the Ngaruroro and Tūtaekurī Rivers and their tributaries, the Taruarau, Omahaki, Mangatutu and Mangaone Rivers by prohibiting the construction of dams on the mainstem of those rivers.

High Flow Reservation

POL TANK 59 The Council will allocate 20% of the total water available at times of high flow in the Ngaruroro or Tūtaekurī River catchments [as specified in Schedule 32^{108.5}](#) for abstraction, storage and use for the following activities;

- a) contribution to environmental enhancement that is in addition to any conditions imposed on the water storage proposal;
- b) improvement of access to water for domestic use by marae and papakāinga;
- c) the use of water for any activity, provided that:
 - (i) it includes contribution to a fund managed by the Council in consultation with mana whenua; and
 - (ii) the fund will be used to provide for development of Māori wellbeing;
 - (iii) the contribution to the fund is proportional to the amount of reserved water being taken and any commercial returns resulting from the application
- d) the development of land returned to a Post-Settlement Governance Entity (PSGE) through a Treaty Settlement.

And in making decisions on applications to take and store this water the Council will;

- e) require information to be provided that demonstrates how the activity will provide for Māori economic, cultural or social well-being;
- f) have regard to the views of any affected PSGE or iwi authority arising from consultation about the application and any assessment of the potential to provide part, or all of the 20% high flow allocation;
- g) have regard to any relevant provisions for the storage and use of high flow allocation water for Māori development in any joint iwi/hapū management plans relevant to the application (where more than one PSGE, iwi/hapū is affected, the iwi management plan must be jointly prepared by the affected iwi/hapū).

POL TANK 60 When making decisions about resource consent applications to take and store high flow water, the Council will take into account the following matters:

- a) whether water allocated for development of Māori well-being is still available for allocation;
- b) whether there is any other application to take and use the high flow allocation for development of Māori well-being relevant to the application;

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- c) the scale of the application and whether cost effective or practicable options for taking and using the highflow allocation for Māori development can be incorporated into the application;
- d) the location of the application and whether cost effective or practicable options for including taking and using water for Māori development can be developed as part of the application;
- e) whether there has been consultation on the potential to include taking and using all or part of the water allocated for Māori development into the application;
- f) whether it is the view of the applicant that a joint or integrated approach for the provision of the high flowwater allocated to Māori development is not appropriate or feasible, and the reasons why this is the case.

5.10.9 Climate change

POL TANK 61 The Council will require decisions on land and water management to consider:

- a) The effects on climate change on aquatic ecosystems, indigenous biodiversity, trout and salmon, ^{58.5} freshwater bodies, water supply, human health, primary production and infrastructure from the predicted:
 - (i) Increases in intensity and frequency of rainfall;
 - (ii) effects of rainfall on erosion and sediment loss;
 - (iii) increases in sea level and the effects of salt water intrusion;
 - (iv) increasing frequency of water shortages;
 - (v) increasing variability in river flows.
- b) the amount of information available
- c) the scale and probability of adverse effects, particularly irreversible effects, as a consequence of acting or not acting;
- d) the timeframes relevant to the activity; and
- e) how to improve community resilience for changes. ^{201.2, 132.83, 120.78}
- f) opportunities to reduce greenhouse emissions alongside other contaminant losses^{180.31}

Chapter 6 New Regional Rules

Amend; Summary of Existing Rules to insert a new Section 6.10

6.10 TANK Catchments specific rules	Classification	Page (to come)
6.10.1 Use of Production Land		
Rule TANK 1 Use of Production Farm Land	Permitted	
Rule TANK 2 Use of Production Farm Land	Controlled	
Rule TANK 3 Stock Access	Permitted	
Rule TANK 4 Stock Access	Restricted-Discretionary	
Rule TANK 5 Use of Production Land (land use change)	Controlled	
Rule TANK 6 Use of Production Land (land use change)	Restricted Discretionary	
6.10.2 Take and Use of Water		
Rule TANK 7 Take and use of surface water	Permitted	
Rule TANK 8 Take and use of groundwater	Permitted	
Rule TANK 9 Take and use groundwater (Heretaunga Plains)	Restricted Discretionary	
Rule TANK 10 Take and use ground or surface water	Restricted Discretionary	
Rule TANK 11 Take and use water	Discretionary	

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Rule Tank 12 Take and use water	Prohibited	
Rule Tank 13 Take and use water (high flow)	Discretionary	
Rule Tank 14 Damming water	Discretionary	
Rule Tank 15 Take and use water (from an impoundment)	<u>Restricted</u> Discretionary	
<u>Rule Tank 15a Take and use water</u>	<u>Discretionary</u>	
Rule Tank 16 Take and use water (from an impoundment)	Non-complying	
Rule Tank 17 Damming water	Prohibited	
Rule TANK 18 Stream flow maintenance	<u>Restricted</u> Discretionary	
<u>Rule TANK 18 Stream flow maintenance</u>	<u>Discretionary</u>	
6.10.3 Discharge of Stormwater		
Rule Tank 19 Stormwater	Permitted	
Rule Tank 20 Stormwater	Restricted Discretionary	
Rule Tank 21 Stormwater	Controlled	
Rule Tank 22 Stormwater	Restricted Discretionary	
Rule Tank 23 Stormwater	Discretionary	

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Insert the following rules as new Section 6.10

6.10 Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment Rules (TANK)

6.10.1 Use of Production Land

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 1 Use of Production Land	The use of production farm land where: (a) 20 or more hectares of the farm is arable land use; or (b) 5 or more hectares of the farm is horticultural land use; or (c) 20 or more hectares of the farm is pastoral land use; or (d) 20 or more hectares of the farm is a combination of any 2 or more of the land uses described above on farm properties or farming enterprises in the TANK catchments that are greater than 10 hectares pursuant to	Permitted	a) The farm property or farming enterprise land area has less than 75% plantation forest cover ⁴ . b) Either; (i) The owner or manager of the farm operator property or enterprise is either a member of a TANK Industry Programme or a member of a TANK Catchment Collective within the timeframes specified in Schedule 28 and accordance with the requirements of Schedule 30; Or; (ii) The farm operator property or enterprise owner or manager of the property shall prepare a <u>Freshwater Farm Environment Plan</u> in accordance with the requirements of Schedule 30 and within the timeframes specified in Schedule 28; and the <u>Freshwater Farm Environment Plan</u> is being implemented and; 1. the Council shall be provided with the <u>Freshwater Farm Environment Plan</u> upon request; 2. information about the implementation of the mitigation measures identified for the property-farm shall be supplied to the Council on request. c) <u>Where a farm is in a high priority catchment for total nitrogen concentration or nitrogen yield as shown on the Planning Maps for Schedule 28 the freshwater farm plan shall include in accordance with Schedule 30 the:</u> (i) <u>nitrogen loss rate (kg/ha/year) and</u> (ii) <u>nitrogen loss rate target</u> ^{110, 123, 210, 126, et al}		

⁴ The National Environmental Standards; Plantation Forestry also apply where there is plantation forest. This rule only applies if a property has less than 75% plantation forest cover

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	<p>Section 9(2) RMA and associated non-point source discharges pursuant to Section 15 of the RMA 135.50,29.37, 180.53</p>				
<p>TANK 2 Use of Productio n Farm Land</p>	<p>The use of farm production land where: <u>(a) 20 or more hectares of the farm is arable land use; or</u> <u>(b) 5 or more hectares of the farm is horticultural land use; or</u> <u>(c) 20 or more hectares of the farm is pastoral land use; or</u> <u>(d) 20 or more hectares of the farm is a combination of any 2 or more of the land uses described above on farm properties or farming enterprises that are greater than 10 hectares in the TANK catchments pursuant to Section 9(2) RMA and associated</u></p>	<p>Controlled</p>	<p>The activity does not meet <u>the conditions (b)</u> of Rule TANK 1.</p>	<p>1. The freshwater water quality objectives and target attribute states in Schedule 26 for the catchment where the activity is being undertaken and any measures required to reduce the actual or potential contaminant loss occurring from the property, taking into account their costs and likely effectiveness and including performance in relation to industry <u>good management</u>^{180.10 et al} practice and requirements for;</p> <ul style="list-style-type: none"> a) Efficient use of nutrients and minimisation of nutrient losses, b) Wetland management c) Riparian management d) Management of farm wastes e) Management of stock including in relation to water ways and contaminant losses to ground and surface water f) Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways, and damage to soil structure g) Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply <u>irrespective of any treatment process for the Registered Drinking Water Supply</u>^{207.45} <p>2. Nature and scale of actual and potential contamination loss from the property in relation to the objectives specified in Schedule 26</p>	<p><u>Consent applications will generally be considered without notification and without the need to obtain written approval of affected persons.</u></p>

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	non-point source discharges pursuant to Section 15 of the RMA 35.50,29.37, 180.53			3. Timeframes for any alternative mitigation measures 4. Duration of consent 5. Lapsing of consent 6. Review of consent conditions; 7. The collection, recording, monitoring and provision of information concerning the exercising of the consent Consent applications will generally be considered without notification and without the need to obtain written approval of affected persons	
TANK 3 Stock Access 124.32, 129	Stock Access to rivers lakes and wetlands	Permitted	(a) — The entry into or over the bed of any river lake or wetland by cattle, deer and pigs is a permitted activity provided that; (i) — stock are at a stocking rate less than 18su/ha in the paddock adjacent to the river the stock have access to; and (ii) — The slope over 60% or more of the paddock is greater than 15 degrees of slope. (b) — Rivers that are crossed by formed stock races are bridged or culverted by 31 May 2023. (c) — The entry into or over the bed of any river, lake or wetland by cattle, deer and pigs not permitted by condition (a) is a permitted activity until 31 May 2023. (d) For rivers, conditions (a) to (c) apply only to rivers with an active formed channel.		
TANK 4 Stock Access	Stock Access to rivers lakes and wetlands	Restricted-Discretionary	The activity does not meet any one of the conditions (a)–(d) of Rule TANK 3.	1. — An assessment of sources, scale and significance of adverse effects of sediment, phosphorus, nitrogen and bacterial inputs to the waterbody that could be effectively or efficiently reduced by stock exclusion, bridging or culverting 2. — Alternative measures to meet water quality outcomes and improve ecosystem health, including by managing bank erosion or reducing sediment losses to water in contributing areas, altering land uses, or providing reticulated water for stock; 3. — Whether stock exclusion is practicable in the circumstances including in relation to;	10. —

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<p>a) — total costs of stock exclusion measures compared to expected water quality benefit as assessed in relation to matter 1 and other possible adverse effects including stock welfare</p> <p>b) — technical or practical challenges of any works required for stock exclusion to be effective</p> <p>c) — potential costs and benefits provided by alternative measures compared to stock exclusion</p> <p>4. — Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply</p> <p>5. — Timeframes for any alternative mitigation measures</p> <p>6. — Duration of consent</p> <p>7. — Lapsing of consent</p> <p>8. — Review of consent conditions;</p> <p>9. — The collection, recording, monitoring and provision of information concerning the exercising of the consent</p>	
<p>TANK 5 Use of Productio n Land</p>	<p><u>A change in land use</u> The changing of a use of production land on farm properties or farming enterprises that are greater than 10 hectares in the TANK catchments pursuant to Section 9(2) RMA and associated non- point source discharges pursuant to</p>	<p>Controlled</p>	<p>a) <u>A change in land use types means a change from one leaching level to a higher leaching level as shown in Table 1 of Schedule 29</u></p> <p>b) a) A change in land use is a Any change to the production land use activity from what existed commencing after on 2 May 2020</p> <p>c) The <u>change in land use</u> is over more than <u>10ha</u> 40% of the property or farming enterprise area.</p> <p>d) The <u>owner of the production land subject to the changed land use is a member of subject to a Catchment Collective which has a Catchment Collective Plan Programme meeting the requirements of Schedule 30AB by a TANK Catchment Collective which meets the requirements of Schedule and 30BA.</u></p> <p>c) The Council may require information to be provided about production land use changes (note that the Schedule 30 requires collectives to record land use-</p>	<p>1. Modelling using Overseer, or alternative model approved by Council to demonstrate the change in land use activity will be consistent with the requirements of Policy POL TANK 21.</p> <p>2. <u>Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with Policy 61^{180.31}</u></p> <p>3. The measures being undertaken by the TANK-Landowner Catchment Collective in- <u>undertaking measures to meet the 2040 target attribute states water quality objectives, including measures required as a result of the proposed land use change.</u> ^{37, 131.8, 122.68}</p> <p>4. 2-Measures to be undertaken on the property which contribute to meeting ,including how the effect of the new land use activity on-</p>	<p><u>If the 2040 target attribute states in Schedule 26 are being met in the catchment, consent applications in that catchment will be considered without public notification and without the need to, obtain written approval of affected persons.</u></p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	Section 15 of the RMA		<p>changes-</p> <p>d) The change in land use results in a modelled average annual N loss change of less than 10% (using Overseer or alternative nutrient loss model approved by HBRC).</p>	<p>contributing to the 2040 target attribute states water quality objectives is being collectively addressed including by;</p> <p>a) Efficient use of nutrients and minimisation of nutrient losses,</p> <p>b) Wetland management</p> <p>c) Riparian management</p> <p>d) Management of farm wastes</p> <p>e) Management of stock including in relation to waterways and contaminant losses to ground and surface water</p> <p>f) Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways, and damage to soil structure</p> <p>g) Measures to prevent or minimise any adverse effects</p> <p>on the quality of the source water used for a Registered Drinking Water Supply <u>irrespective of any treatment process for the Registered Drinking Water Supply</u>^{207.45}</p> <p>5. 3. Timeframes for any alternative mitigation measures</p> <p>6. 4. Duration of consent</p> <p>7. 5. Lapsing of consent</p> <p>8. 6. Review of consent conditions</p> <p>9. 7. The collection, recording, monitoring and provision of information including Overseer or alternative model files.</p> <p>If water quality limits and in Schedule 26 are being met in the catchment, consent applications in that catchment will be considered without public notification and without the need to obtain written approval of affected persons. Consent applications will generally be considered without notification and without the need to obtain written approval of affected persons.</p>	
TANK 6	<u>A change in land</u>	Restricted	a) A change in land use types means a change from one	1. Modelling using Overseer, or alternative	<u>If 2040 target</u>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
Use of Production Land	The changing of a use of production land on farm properties or farming enterprises that are greater than 10 hectares in the TANK catchments pursuant to Section 9(2) RMA and associated non-point source discharges pursuant to Section 15 of the RMA use type	Discretionary	<p>leaching level to a higher leaching level as shown in Table 1 of Schedule 29^{54,193,66}</p> <p>b) The activity does not meet the conditions of TANK 5.</p> <p>c) Any change to a production land use activity over more than 10ha of the property or enterprise area commencing after 2 May 2020 that results in the annual nitrogen loss increasing by more than the applicable amount shown in Table 2 in Schedule 29.</p> <p>d) <u>The change in land use type is a change to the activity from what existed on 2 May 2020.</u></p> <p>e) <u>The change in land use type is over more than 10ha of the property or farming enterprise area.</u></p>	<p>model approved by Council to demonstrate the change in land use activity will be consistent with the requirements of Policy POL TANK 21.</p> <p>2. <u>Impact of the land use change on other contaminant loss risks including greenhouse gas emissions consistent with Policy 61^{180,31}</u></p> <p>3. <u>The measures being undertaken by any relevant Catchment Collective to meet 2040 target attribute states water quality objectives, including measures required as a result of the proposed land use change.</u></p> <p>4. Whether <u>water quality limits and 2040 target attribute states</u> in Schedule 26 are being met in the catchment where the new activity is to be undertaken.</p> <p>5. The extent to which the land use change will affect the ability to meet water quality objectives.</p> <p>6. Any measures required to reduce the actual or potential contaminant loss occurring from the property, taking into account their costs and likely effectiveness and including performance in relation to industry good <u>management</u> practice and requirements for;</p> <ol style="list-style-type: none"> Efficient use of nutrients and minimisation of nutrient losses, Wetland management Riparian management Management of farm wastes Management of stock including in relation to waterways and contaminant losses to ground and surface water Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks 	<p><u>attribute states in Schedule 26 are being met in the catchment, consent applications in that catchment will be considered without public notification and without the need to obtain written approval of affected persons.</u></p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<p>of erosion, movement of soil into waterways, and damage to soil structure</p> <p>g) Measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply <u>irrespective of any treatment process for the Registered Drinking Water Supply</u> 207.45</p> <p>7. Timeframes for any alternative mitigation measures</p> <p>8. Duration of consent</p> <p>9. Lapsing of consent</p> <p>10. Review of consent conditions</p> <p>11. The collection, recording, monitoring and provision of information including Overseer or alternative model files</p> <p>If water quality limits and Schedule 26 are being met in the catchment, consent applications in that catchment will be considered without public notification and without the need to obtain written approval of affected persons.</p>	

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6.10.2 Water – Take and Use

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>TANK 7 Surface Water take</p>	<p>The take and use of surface water in the TANK water <u>quantity areas Management Zones</u> including under Section 14(3)(b) of the RMA <u>and from a dam or water impoundment</u> ^{194.83}</p>	<p>Permitted</p>	<p>a) Any take first commencing after 2 May 2020 is not from any of the following: Maraekakaho Water Management Unit <u>Quantity Areas</u> Ahuriri Water Management Unit <u>Quantity Areas</u> Awanui Stream <u>Water Quantity Area and its tributaries</u> Poukawa Water Management Unit <u>Quantity Areas</u> Louisa Stream <u>Water Quantity Area and its tributaries</u> Paritua-Karewarewa Water Quantity Area. ^{132.21}</p> <p>b) The take does shall not exceed 5 cubic metres per day per any one property except: (i) <u>Lawful Takes</u> existing as at 2 May 2020 <u>may continue to take up to 20 cubic metres per property per day may continue to take up to 20 cubic metres per property per day and to meet the reasonable needs of animals for drinking water;</u> (ii) <u>New Takes to meet reasonable domestic needs may take up to 15 cubic metres over any 7 day period per dwelling house on the property</u> ^{17.7} (iii) <u>Lawful Takes for stock drinking water on the property existing as at 2 May 2020.</u> ^{129.8, 180.58} (iv) Takes occurring for a period of less than 28 days within any 90 day period, the total volume taken on any property shall not exceed 200 cubic metre per 7 day period.</p> <p>c) The taking of water does shall not cause any stream or river flow to cease.</p> <p>d) Fish, including eels, shall be prevented from entering the reticulation system.</p> <p>e) The activity shall not cause changes to the flows or levels of water in any connected wetland.</p> <p>f) The take shall not prevent from taking water any other lawfully established efficient groundwater take, or any lawfully established surface water take, which existed prior to commencement of the take.</p> <p>g) <u>The rate of take shall not exceed 10% of the</u></p>		

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>instantaneous flow⁵ at the point of take. ^{123.102}</p> <p>A Means of Compliance for Condition d)</p> <p>Installation of a screen or screens on the river intake that has a screen mesh size not greater than 3 millimetres and is constructed so that the intake velocity at the screen's outer surface is less than 0.3 metres per second and is maintained in good working order at all times.</p> <p>Note – Conditions a) and b) do not apply to the take and use of water for emergency or training purposes in accordance with RMA Section 14(3)(e). ^{13.13}</p>		
<p>TANK 8 Groundwater take.</p>	<p>The take and use of groundwater in the TANK Water Management Zones including under Section 14(3)(b) of the RMA</p>	<p>Permitted</p>	<p>a) Any take first commencing after 2 May 2020 is not from the Poukawa Water Quantity Area Freshwater Management Unit (quantity)</p> <p>b) There is only one point of take per property and the take does not exceed 5 cubic metres per day except;</p> <p>(i) Lawful Takes existing as at 2 May 2020 <u>may continue to take up to 20 cubic metres per property per day may continue to take up to 20 cubic metres per property per day and to meet the reasonable needs of animals for drinking water.</u> ^{129.9}</p> <p>(ii) New Takes to meet reasonable individual domestic needs <u>may take up to 15 cubic metres over any 7 day period per dwellinghouse on the property</u> ⁶ ^{17.7}</p> <p>(iii) Lawful Takes for stock drinking water on the property existing as at 2 May 2020 ^{129.9}</p> <p>(iv) Takes occurring for a period of less than 28 days within any 90 day period, the total volume taken on any property shall not exceed 200 cubic metres per 7 day period.</p>		

⁵ ~~The taking of water for an individual's reasonable domestic needs and the reasonable needs of an individual's animal drinking water is not restricted by this rule.~~

⁶ ~~Refer to Glossary for definition of "reasonable domestic needs".~~

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>(v) The taking of water for <u>non-consumptive uses including</u> aquifer testing is <u>not restricted limited to 20 cubic metres per day</u>^{203.17, 203.18, 203.22, 210.89}</p> <p>c) The rate of take shall not exceed 10 l/s other than aquifer testing for which the rate of take is not restricted.</p> <p>d) The take shall not prevent from taking water, any other lawfully established efficient groundwater take, or any lawfully established surface water take, which existed prior to commencement of the take.</p> <p>e) The take shall not cause changes to the flows or levels of water in any connected wetland.</p> <p>f) Backflow of water or contaminants into the bore shall be prevented.</p> <p><u>Note – Conditions a) and b) do not apply to the take and use of water for emergency or training purposes in accordance with RMA Section 14(3)(e).</u>^{13.13}</p>		
<p>TANK 9 Groundwater Take – Heretaunga Plains</p>	<p><u>Replacement of an existing Resource Consent to Take of water from the Heretaunga Plains Groundwater Quantity Area Management Unit where Section 124 of the RMA applies (applies to existing consents)</u> ^{63.20} ^{207.22.}</p>	<p>Restricted Discretionary</p>	<p>a) The activity does not comply with the conditions of Rule TANK 8.</p> <p>b) An application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global application that replaces these existing water permits previously held separately or individually.</p> <p>Actual and Reasonable Re-allocation</p> <p>c) The quantity taken and used <u>for irrigation, other than provided for under d)</u>, is the aActual and rReasonable amount.^{194.85}</p> <p>d) The quantity taken and used for municipal, community and papakāinga water supply is:</p> <p>(i) the quantity specified on the permit being renewed; or</p> <p>(ii) any lesser quantity applied for.</p> <p><u>e) Other than as provided in (c) or (d) the quantity taken and used is the least of:</u> <u>(i) — the quantity specified on the permit due for</u></p>	<p>1. The extent to which the need for water has been demonstrated and is aActual and rReasonable provided that the quantities assessed or calculated may be amended after taking account of:</p> <ol style="list-style-type: none"> the completeness of the water permit and water meter data record; the climate record for the same period as held by the Council (note: these records will be kept by the Council and publically available) and whether that resulted in water use restrictions or bans being imposed; effects of water sharing arrangements crop rotation/development phases <p>2. The extent to which the application was subject to</p>	<p><u>Applications may be considered without notification and without the need to obtain the written approval of affected persons in accordance with section 94(1)(b) of the RMA. Applications may be notified if special circumstances exist in terms of section 95B(10) of the RMA or upon review of a consent. In considering whether or not special circumstances exist</u></p>

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>renewal or</p> <p>(ii) any lesser quantity applied for</p> <p>(iii) the maximum annual water use in any one year within the 10 years preceding 1 August 2017 (including as demonstrated by accurate water meter records).^{194.85}</p> <p>Stream Flow Maintenance Scheme</p> <p>f) <u>The take is subject to a stream depletion calculation.-</u> The water permit holder either:</p> <p>(i) contributes to or develops an applicable stream maintenance and habitat enhancement scheme that complies with the requirements of Schedule 36 at a rate equivalent to the stream flow depletion (in l/sec) which will be calculated using the Stream Depletion Calculator and based on the allocated amount of water.</p> <p>or</p> <p>(ii) The water take ceases when the flow in the affected stream fall below the specified trigger level in Schedule 31.^{129.10}</p> <p>g) Any take authorised under clause (d) is not subject to conditions (f) in respect of that part of the total allocated amount used for essential human health.</p> <p>General Conditions</p> <p>g) A water meter is installed.</p> <p>h) Back flow of water or contaminant entry into the bore shall be prevented.</p> <p>Advisory Note:</p> <p>Any application to change water use as specified under (c) (d) or (e) may trigger a consent requirement under Rules TANK 5 or 6.</p>	<p>programmed or staged completion of authorised major infrastructure developments over time.</p> <p>3. Previous history of exercising the previous consent.</p> <p>4. The quantity, rate and timing of the take, including rates of take and any other requirements in relation to any minimum or trigger flow or level given in Schedule 31 and rates of take to limit drawdown effects on neighbouring bores.</p> <p>5. Where the take is in a Source Protection Zone <u>Source Protection Extent</u>^{63.22, 207.24}, the actual or potential effects of the rate of take and volume abstracted on the quality of source water for the water supply and any measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment including notification requirements to the Registered Drinking Water supplier</p> <p>6. For applications to take water for municipal, community and papakāinga water supply;</p> <p>a. provisions for demand reduction and asset management over time so that water use is at reasonable and justifiable levels including whether an Infrastructure Leakage Index of 4 or better will be achieved</p> <p>b. -Rate and volumes of take</p>	<p><u>and to notify upon review, the Council will include consideration of whether an applicable stream flow maintenance scheme exists.</u></p> <p>29.31, 194.70, 208.15, 238.17</p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<p>limited to the projected demand for the urban area provided in the HPUDS 2017.</p> <p>c. water demand based on residential and non-residential use including for schools, rest homes, hospitals commercial and industrial demand^{63.23, 207.25} within the planned reticulation areas</p> <p>d. any Source Protection Zone or extent (as specified in Schedule 35) and</p> <p>i. any proposed changes to provisional protection areas and</p> <p>ii. the impacts of any changes to restrictions on land or water use activities in the protection area.</p> <p>7. Measures to achieve efficient water use or water conservation and avoid adverse water quality effects including the method of irrigation application necessary to achieve efficient use of the water and avoid adverse water effects through ponding and runoff and percolation to groundwater.</p> <p>8. The effects of any water take and use for frost protection on the flows in connected surface water bodies.</p> <p>9. For applications other than irrigation, municipal, community or papakāinga water supply or frost protection, measures to ensure that the take and use of water meets an efficiency of use</p>	

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<p>of at least 80%</p> <p>10. Management of bores including means of backflow prevention and ensuring well security.</p> <p>11. Information to be supplied and monitoring requirements including timing and nature of water metering data reporting and the installation of telemetered recording and reporting.</p> <p>12. The duration of the consent (Section 123 of the RMA) as provided for in Schedule 33 timing of reviews and purposes of reviews (Section 128 of the RMA).</p> <p>13. Lapsing of the consent (Section 125(1) of the RMA).</p> <p>14. Stream flow depletion amount in litres per second calculated using the Stream Depletion Calculator</p> <p>15. <u>Review of permit and new conditions to be imposed in respect of contribution to a Sstream flow maintenance and habitat enhancement scheme, when applicable.</u> ^{129.11}</p>	
<p>TANK 10</p> <p>Surface and groundwater water takes (abstraction at low flows)</p>	<p><u>Replacement of an existing Resource Consent To take and use water where Section 124 applies (applies to existing consents).</u> 63.24, 207.26</p>	<p>Restricted Discretionary</p>	<p>a) The take is not from the Heretaunga Plains Groundwater Quantity Areas Management Unit (quantity).</p> <p>b) The taking and use of water from surface or groundwater water bodies does not comply with conditions of TANK 7, or TANK 8.</p> <p>c) Where the take was previously subject to a condition restricting the take at flows that are higher than the applicable flow specified in Schedule 31, the higher flow will continue to apply. <u>For all other takes, the</u></p>	<p>1. The extent to which the need for water has been demonstrated and is aActual and rReasonable provided that the quantities assessed or calculated may be amended after taking account of:</p> <ol style="list-style-type: none"> the completeness of the water permit and water meter data record; the climate record for the same period as held by the Council (note: these records will be kept 	<p><u>Applications may be considered without notification and without the need to obtain the written approval of affected persons in accordance with section 94(1)(b) of the RMA.</u> <u>Applications may be</u></p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>flows specified in Schedule 31 apply.^{129.13}</p> <p>d) An application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global application that replaces these existing water permits previously held separately or individually.</p> <p>Actual and Reasonable Re-allocation</p> <p>e) The quantity taken and used for irrigation, other than provided for by f), is the Actual and Reasonable amount.^{194.88}</p> <p>f) The quantity taken and used for municipal, community and papakāinga water supply is:</p> <ul style="list-style-type: none"> (i) the quantity specified on the permit being renewed; or (ii) any lesser quantity applied for. <p>g) Other than as provided in (e) or (f), the quantity taken and used is the least of:</p> <ul style="list-style-type: none"> (i) the quantity specified on the permit due for renewal; or (ii) any lesser quantity applied for; (iii) the maximum annual water use in any one year within the 10 years preceding 2 May 2020 (including as demonstrated by accurate water meter records).^{194.88} <p>Surface Water Quantity Area Management (quantity)</p> <p>h) Any take from groundwater in Zone 1 authorised as at 2 May 2020 in any surface Water Quantity Area Management Unit (quantity) is subject to a stream depletion calculation. either;</p> <ul style="list-style-type: none"> (iv) a restriction in water flow when the applicable minimum flow is reached in the relevant zone (as shown in Schedule 31); <p>Or</p>	<ul style="list-style-type: none"> by the Council and publically available) and whether that resulted in water use restrictions or bans being imposed; c. effects of water sharing arrangements d. crop rotation/development phases <p>2. Previous history of exercising the previous consent.</p> <p>3. The quantity, rate and timing of the take, including rates of take and any other requirements in relation to any relevant minimum flow or level or allocation limit given in Schedule 31.</p> <p>4. Where the take is in a Source Protection Zone Source Protection Zone or Source Protection Extent^{63.25, 207.27}, the actual or potential effects of the rate of take and volume abstracted on the quality of source water for the water supply and any measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment including notification requirements to the Registered Drinking Water supplier</p> <p>5. For applications to take water for municipal, community and papakāinga water supply;</p> <ul style="list-style-type: none"> a. provisions for demand reduction and asset management over time so that water use is at reasonable and justifiable levels including whether an Infrastructure Leakage 	<p><u>notified if special circumstances exist in terms of section 95B(10) of the RMA or upon review of a consent. In considering whether or not special circumstances exist and to notify upon review, the Council will include consideration of whether an applicable stream flow maintenance scheme exists.</u></p> <p>29.31, 194.70, 208.15, 238.17</p>

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>(v) — the take complies with conditions (f) and (g) of rule TANK 9 where there is an applicable scheme.^{129,14}</p> <p>General Conditions</p> <p>i) A water meter is installed.</p> <p>j) Fish and eels are prevented from entering the reticulation system.</p> <p>k) Back flow of water or contaminants into any bore shall be prevented.</p> <p>Advisory Note:</p> <p>Any application to change water use as specified under (c) (d) or (e) may trigger a consent requirement under Rules TANK 5 or 6.</p> <p>Means of Compliance for Condition (j)</p> <p>Installation of a screen or screens on the river intake that has a screen mesh size not greater than 3 millimetres and is constructed so that the intake velocity at the screen's outer surface is less than 0.3 metres per second and is maintained in good working order at all times.</p>	<p>Index of 4 or better will be achieved.</p> <p>b. Rate and volumes of take limited to the projected demand for the urban area provided in the HPUDS 2017.</p> <p>c. water demand based on residential and non-residential use including for schools, rest homes, hospitals commercial and industrial demand^{63.26, 207.28} within the planned reticulation areas</p> <p>6. The location of the point(s) of take</p> <p>7. The effects of any water take and use for frost fighting on the natural flow regime of the river.</p> <p>8. Information to be supplied and monitoring requirements including timing and nature of water meter data reporting and the installation of telemetered recording and reporting.</p> <p>9. For applications other than irrigation, municipal, community or papakāinga water supply or frost protection , evidence that the take and use of water meets an efficiency of use of at least 80%</p> <p>10. Measures to achieve efficient water use or water conservation and avoid adverse water quality effects including the method of irrigation application necessary to achieve efficient use of the water and avoid adverse water effects through ponding and runoff and percolation to groundwater.</p>	

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				11. Management of bores and other water take infrastructure including means of backflow prevention. 12. Measures to prevent fish from entering the reticulation system. 13. The duration of the consent (Section 123 of the RMA) as provided for in Schedule 33 timing of reviews and purposes of reviews (Section 128 of the RMA). 14. Lapsing of the consent (Section 125(1) of the RMA). 15. For takes from Zone 1 in the Ngaruroro and Tūtaekuri Water Quantity Areas Management Zones- review of permit and new conditions to be imposed in respect of contribution to a Sstream flow maintenance and habitat enhancement scheme, when applicable.-Contribution to services or works for the maintenance of river flows associated with groundwater abstraction and stream depletion in relation to takes subject to condition- (h) provided in respect of the performance of conditions and administration charges (Section 108 of the RMA). ^{129.14}	
TANK 11 Groundwater and Surface water take (low flow)	The take and use of surface (low flow allocations) or groundwater	Discretionary	a) The activity does not comply with the conditions of Rules TANK 7, TANK 8, ^{203.23} TANK 9 or TANK 10 where relevant. ^{129.15} b) Either (i) The application is either for the continuation of a water take and use previously authorised in a permit that was issued before 2 May 2020 or is a joint or global	Refer also to RRMP Rule 31, which is amended as part of this Plan Change and Rule TANK 18.	

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>application that replaces these existing water permits previously held separately or individually in the following Management Units (quantity);</p> <ul style="list-style-type: none"> i. Ahuriri ii. Poukawa iii. Ngaruroro groundwater iv. Tūtaekuri groundwater v. Horotaunga Plains <p>or</p> <p>(ii) The total amount taken, either by itself or in combination with other authorised takes in the same water quantity area management unit does not cause the total allocation limit in the relevant quantity area management unit as specified in Schedule 31 to be exceeded except this clause does not apply to takes for: <u>except this clause does not apply to takes for:</u></p> <ul style="list-style-type: none"> i. <u>frost protection</u> ^{194.74} ii. <u>takes of water associated with and from or</u> ^{123.106} <u>dependant on release of water from a water storage impoundment, or managed aquifer recharge scheme</u> ^{29.42} <u>water takes that are non-consumptive.</u> ^{129.16} iii. <u>Temporary construction dewatering.</u> ^{203.23} <p>or</p> <p>(iii) <u>The take is for:</u></p> <ul style="list-style-type: none"> i. frost protection; or ^{194.74} ii. takes of water associated with and from or ^{123.106} dependant on release of water from a water storage impoundment, or managed aquifer recharge scheme. ^{29.42} <p>or</p> <ul style="list-style-type: none"> ii. water takes that are non-consumptive. ^{129.16, 203.23} 		

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Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK 12 Groundwater and Surface water take	The take and use of surface or groundwater	Prohibited	a) The activity does not comply with the conditions of Rule TANK 11 No application may be made for this activity		
TANK 13 Taking water – high flows	The taking and use of surface water at times of high flow (including for storage in an impoundment)	Discretionary	a) The activity does not comply with the conditions of RRMP 67 and 68. ^{129.17} b) The take on its own or in combination with other authorised takes is still available for allocation within the limits specified in both columns (D) and (E) of Schedule 32 c) The activity either on its own or in combination with other activities does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 32.	Note: The construction of dams greater than 4 metres in height and holding more than 20,000 m3 will also need a Building Consent. Dams smaller than this are exempt from the Building Act provisions.	
TANK 14 Damming water	The erection or placement of any dam or weir or other barrier structure. D damming of surface waters and discharge from dams except as prohibited by Rule TANK 17 ^{129.18}	Discretionary	a) The activity does not comply with the conditions of RRMP 67 or RRMP 68. ^{129.19} b) Except as prohibited by Rule TANK 17, the activity either on its own or in combination with other dam or discharge activities in the same water <u>quantity area management zone</u> does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 32.		
TANK 15 Take and use from storage	Take and use from a dam or water impoundment	<u>Restricted</u> Discretionary	a) The activity does not comply with <u>the conditions of Rule TANK 7.</u> ^{63.32, 207.34} b) The activity either on its own or in combination with other dam or discharge activities in the same water management zone does not cause the flow regime of the river to be altered by more than the amount specified in Schedule 32 <u>The activity will not result in a change of land use that requires consent under Rules TANK 5 or 6.</u>	<u>1. The location, quantity, rate and timing of the take.</u> <u>2. Measures to avoid adverse water quality effects.</u> <u>3. Measures to ensure that the take and use of water meets an efficiency of use of at least 80%.</u> <u>4. Information to be supplied and monitoring requirements including timing and nature of water metering data reporting and the installation of telemetered recording</u>	

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<p><u>and reporting.</u></p> <p><u>5. The duration of the consent having regard to POL TANK 49.</u></p> <p><u>6. Lapsing of the consent.</u></p> <p><u>7. Review of consent conditions.</u></p>	
TANK 15a <u>Take and use from storage</u>	<u>Take and use from a dam or water impoundment</u>	Discretionary	a) <u>The activity does not comply with the conditions of Rule TANK 15.</u>		
TANK 16	Damming, take and use at high flow or take from a dam or water impoundment	Non-complying	a) The activity does not comply with the conditions of Rules TANK 13- 15.		
TANK 17 Damming water	Construction of dams or the damming of water	Prohibited	<p>b) The construction of dams or the damming of water on the mainstem of the following rivers</p> <p>(i) Ngaruroro River</p> <p>(ii) Taruarau River</p> <p>(iii) Omahaki River</p> <p>(iv) Tūtaekurī River:</p> <p>(v) Mangaone River</p> <p>(vi) Mangatutu River</p> <p>No application may be made for these activities.</p>		
TANK 18 Stream Flow Maintenance and Habitat Enhancement Scheme	Transfer and Discharge of groundwater into surface water in the Heretaunga Plains Water Quantity Area Management unit (quantity)	Restricted ^{99.27, 180.61} Discretionary	<p>a) The transfer and discharge of water is managed according to the applicable requirements of Schedule 36. The activity does not comply with the conditions of RRMP Rule 31.^{63.34, 207.36} <u>The activity will not result in a change of land use that triggers Rules TANK 5 or 6.</u>^{123.113}</p>	<p><u>1. Location, quantity, rate, duration and timing of discharge.</u></p> <p><u>2. Flood mitigation measures.</u></p> <p><u>3. Compliance monitoring including monitoring for water quality.</u></p> <p><u>4. Measures or methods required for meeting the receiving water quality targets in Schedule 26.</u>^{123.113}</p> <p><u>5. The duration of the consent having regard to POL TANK 49.</u></p> <p><u>6. Lapsing of the consent.</u></p> <p><u>7. Review of consent conditions.</u></p>	
TANK 18a Stream Flow	<u>Discharge of groundwater into surface water in the</u>	Discretionary	<u>The activity does not comply with the conditions of TANK Rule 18.</u>		

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<u>Maintenance and Habitat Enhancement Scheme</u>	<u>Heretaunga Plains Water Quantity Area</u>				

Recommended changes to Proposed Plan Change 9

6.10.3 Stormwater

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
<p>TANK 19 Small scale stormwater diversion and discharge activities 129.21</p>	<p>The diversion and discharge of stormwater into water, or onto land where it may enter water from any new or existing and lawfully established: (a) any activity with less than 1000 m² impervious area residential activities; (b) non-industrial or trade premise; (c) industrial or trade premise with less than 1,000 m² of impervious areas; (d) rural building.</p>	<p>Permitted</p>	<p>a) The diversion and discharge shall not;</p> <ul style="list-style-type: none"> (i) cause any permanent bed scouring or bank erosion of land or any water course at or beyond that point of discharge (ii) cause or contribute to flooding of any property (iii) cause any permanent reduction in the ability of the receiving environment to convey flood flows (iv) contain hazardous substances or, be from a site used for the storage, use or transfer of hazardous substances (v) contain drainage from a stockyard (vi) cause to occur or contribute to any of the following after reasonable mixing: <ul style="list-style-type: none"> i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any emission of objectionable odour iii. any conspicuous change in colour or the visual clarity of the receiving water body (including the runoff from bulk earthworks) iv. any freshwater becoming unsuitable for consumption by farm animals (vii) cause to occur or contribute to the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water (viii) cause to occur or contribute to the discharge of microbiological contaminants including sewage, blackwater, greywater or animal effluent. <p>b) The property cannot connect to a current or planned reticulated stormwater network.</p> <p>c) The discharge is from a property that contains less than 1000m² of impervious area</p> <p>d) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound.</p> <p>e) The person who discharges or diverts, or who causes the discharge or diversion to occur, shall provide such</p>	

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			information upon request by the Council to show how Condition (a) will be met or has been met.	
TANK 20 Small scale stormwater <u>diversion and discharge activities</u> 129.21	The diversion and discharge of stormwater into water, or onto land where it may enter water from any new or existing and lawfully established: any activity with less than 1000 m2 impervious area residential activities; non-industrial or trade premise; industrial or trade premise with less than 1,000 m2 of impervious areas; rural building.	Restricted Discretionary	<p>a) The activity does not comply with the conditions of Rule TANK 19; <u>and</u></p> <p>b) <u>the activity is not from an industrial or trade premise.</u></p>	<ol style="list-style-type: none"> 1. Location of the point of diversion and discharge including its catchment area. 2. Volume, rate, timing and duration of the discharge, in relation to a specified design rainfall event. 3. Effects of the activity on downstream flooding. 4. Contingency measures in the event of pipe capacity exceedance. 5. Actual or likely adverse effects on fisheries, wildlife, habitat or amenity values of any surface water body. 6. Actual or likely adverse effects on the potability of any ground water. 7. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier <u>irrespective of any treatment process for the Registered Drinking Water Supply</u> 207.45. 8. <u>The timing of future planned reticulated networks.</u> 207.58, 63.40 9. 7. The actual or potential effects of the activity on the <u>target attribute states water quality objectives</u> set out in Schedule 26. 10. <u>Compliance with any relevant industry codes of practice or guidelines</u> 203.26 11. <u>When required, the efficacy of a Stormwater Management Plan (Schedule 34) including measures adopted to minimise the risk of contaminants of concern entering stormwater to assist in meeting Schedule 26 target attribute states including:</u> <ol style="list-style-type: none"> a. <u>Installation of stormwater management devices including as detailed in table 3.1 of the Hawke's Bay Regional Council Industrial Stormwater Waterway Design Guidelines.</u> b. <u>Alignment with relevant industry guidelines and best practice standards.</u> 12. 9. Duration of the consent. 13. 10. A compliance monitoring programme. 14. 11. Bonds or Administrative charges.
TANK 21 Stormwater <u>activities</u> <u>Diversion</u>	Diversion and discharge of stormwater from an existing or new	Controlled	<p>a) The diversion and discharge shall not;</p> <ol style="list-style-type: none"> (i) cause any permanent bed scouring or bank erosion of land or any water course at or beyond that point of discharge 	<ol style="list-style-type: none"> 1. The efficacy of the Integrated Catchment Management Plan including, but not limited to: <ol style="list-style-type: none"> a. Its contribution to achieving water quality objectives b. its implementation programme and milestones,

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
<p><u>and discharge from local authority networks</u></p>	<p>local authority managed stormwater network into water, or onto land where it may enter water</p>		<p>(ii) cause or contribute to flooding of any property, <u>except where stormwater may be directed to a secondary flow path</u></p> <p>(iii) cause any permanent reduction in the ability of the receiving environment to convey flood flows</p> <p>(iv) contain hazardous substances or, be from a site used for the storage, use or transfer of hazardous substances^{135.56}</p> <p>(v) Contain drainage from a stockyard</p> <p>(vi) Contain sewage, blackwater or greywater</p> <p>(vii) cause to occur or contribute to any of the following after reasonable mixing:</p> <ul style="list-style-type: none"> i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any emission of objectionable odour iii. any conspicuous change in colour or the visual clarity of the receiving water body (including the runoff from bulk earthworks) iv. any freshwater becoming unsuitable for consumption by farm animals v. cause to occur or contribute to the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water vi. <u>the exceedance of water quality guidelines for microbiological contamination^{207.59, 63.41} including sewage, blackwater, greywater or animal effluent.</u> <p>b) <u>An application for resource consent must include an Integrated Catchment Management Plan in accordance with Schedule 35B</u></p> <p>c) An application for resource consent must include an Integrated Catchment Management plan that includes;</p> <p>d) A monitoring programme to assess existing stormwater discharge quality and level of impact on receiving water quality standards</p> <p>(ii) Identification of the spatial extent of the stormwater network to which the application for-</p>	<ul style="list-style-type: none"> c. The comprehensiveness and reliability of the monitoring regime d. The use of low impact stormwater design methods <p>2. The actual or potential effects of the activity on the <u>target attribute states water quality objectives</u> set out in Schedule 26 including for aquatic ecosystem health, mahinga kai, contact recreation and Māori customary use.</p> <p>3. The characteristics of the proposed discharge and its effects on the receiving environment</p> <p>4. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier <u>irrespective of any treatment process for the Registered Drinking Water Supply^{207.45}.</u></p> <p>5. Duration of the consent</p> <p>6. Review of consent conditions</p> <p>7. Compliance monitoring</p> <p>8. Administrative charges</p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			<p>consent relates</p> <p>(iii) Identification of the priority streams or catchments where stormwater discharges currently result in receiving water quality below the standards specified in Schedule 26</p> <p>(iv) A programme of mitigation measures including timeframes and milestones for the enhancement of streams identified in (b)(iii),</p> <p>(v) Identification of any industrial or trade sites, that use, store or produce the discharge of any contaminant of concern (as defined in Table 3.1 of Hawke's Bay Waterway Guidelines Industrial Stormwater Design),</p> <p>(vi) Identification of sites within catchments that have a high risk of contaminants entering the stormwater network or land where it might enter surface or groundwater, including industrial and trade premises and areas subject to new urban development.</p> <p>(vii) For sites identified in (b)(vi), a programme to ensure Urban Site Specific Stormwater Management Plans are prepared and implemented so that stormwater quality risks are managed. (Schedule 34)</p> <p>(viii) Identification of areas at risk of flooding, and where levels of service to protect communities from flooding are not being met provide information about how this will be managed.</p> <p>(ix) The potential effects of climate change on infrastructure capacity and a description of any planned mitigation measures including the identification of secondary flow paths and the capacity of the receiving environment.</p> <p>(x) Identification of measures to demonstrate how discharges shall not cause scouring or erosion of land or any water course beyond the point of discharge</p> <p>(xi) Where the stormwater network (or part thereof) or discharge locations are situated within a Source Protection Zone of a registered drinking water</p>	

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			<p>supply, a description of measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or any increase in the risk of unsafe drinking water being provided to persons and communities from the drinking water supply</p> <p>(xii) Description of measures to demonstrate how the discharge shall not contain hazardous substances or contaminants (including wastewater) and shall not cause any of the following to occur after reasonable mixing:</p> <p>i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;</p> <p>ii. any emission of objectionable odour;</p> <p>iii. Any conspicuous change in colour or visual clarity of the receiving water;</p> <p>iv. any freshwater becoming unsuitable for consumption by farm animals;</p> <p>v. the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water. ^{129.24}</p>	
<p>TANK 22 Stormwater discharge from industrial or trade premises ^{129.21}</p>	<p>Discharge of stormwater to water or onto land where it may enter water from any industrial or trade premises with <u>1,000 m² or more of impervious areas</u></p>	<p>Restricted discretionary</p>	<p>a) An application for resource consent must include an Urban Site Specific Stormwater Management Plan (Schedule 34) ^{207.60, 63.43}</p> <p>b) The diversion and discharge;</p> <p>(i) shall not cause permanent bed scouring or bank erosion of land or alter the natural course of any water body</p> <p>(ii) shall not cause or contribute to flooding of any property,</p> <p>(iii) shall not cause any permanent reduction in the ability of the receiving environment to convey flood flows</p> <p>(iv) shall not contain hazardous substances <u>or for any site where there is the use, storage or transfer of petroleum hydrocarbons, there is an oil interceptor treatment device installed</u>^{203.28}</p> <p>c) The diversion and discharge shall not cause any of the following to occur after reasonable mixing:</p>	<p>1. The efficacy of the Urban Site Specific^{207.61} Stormwater Management Plan (Schedule 34) including measures adopted to minimise the risk of contaminants of concern entering stormwater <u>to assist in meeting Schedule 26 target attribute states</u> including:^{210.103}</p> <p>a. <u>Design, installation and maintenance</u> ^{203.28} of stormwater management devices including as detailed in table 3.1 of the Hawke's Bay Regional Council Industrial Stormwater Waterway Design Guidelines.</p> <p>b. Alignment with relevant industry guidelines and best practice standards.</p> <p>2. Water quality standards in the discharge in relation to any contaminants being used on site and specific methods for treating these.</p> <p>3. The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water</p>

Recommended changes to Proposed Plan Change 9

Rule	Activity	Status	Conditions/Standards/Terms	Matters for Control/Discretion
			<ul style="list-style-type: none"> (i) production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials (ii) any emission of objectionable odour (iii) any conspicuous change in colour or the visual clarity (iv) result in any freshwater becoming unsuitable for consumption by farm animals d) the diversion and discharge shall not cause to occur or contribute to: <ul style="list-style-type: none"> (i) the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water (ii) the discharge of microbiological contaminants, including sewage, blackwater, greywater or animal effluent. e) There is no reticulated stormwater network at the property boundary f) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound. 	<p>supplier <u>irrespective of any treatment process for the Registered Drinking Water Supply</u> ^{207.45}</p> <ul style="list-style-type: none"> 4. The characteristics of the proposed discharge and its effects on the receiving environment 5. Duration of the consent 6. Review of consent conditions 7. Compliance monitoring.
TANK 23 Stormwater activities	The diversion and discharge of stormwater into water, or onto land where it may enter water.	Discretionary	The activity does not comply with Rules TANK 19 to TANK 22	The Council may at any time, by written notice to the owner or occupier (following a reasonable period of consultation), review a consent in light of new information that has become available or any change in circumstances that has occurred, and vary any condition of consent as a consequence.

Chapter 6.9 Amendments to Regional Resource Management Plan Rules (see below underline/strikeout version of chapter 6)

Proposed Plan Change 9 proposes changes to Chapter 6 of the RRMP and make consequential changes to the rules and to insert new provisions relevant to the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments. The amendments subject to the Proposed Plan Change are shown below in bold with new text underlined and text to be deleted shown in strikeout. (Note Only the text shown underlined and in **bold** can be the subject of submissions)

6.3.1 Bore Drilling & Bore Sealing

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
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Recommended changes to Proposed Plan Change 9

<p>1 Bore drilling <i>Refer POL 17, 21, 27, 75</i></p>	<p>The drilling, construction, and alteration of bores.⁵</p>	<p>Controlled</p>	<p>a. The bore shall be cased and sealed to prevent aquifer cross-connection, and leakage from the ground surface into ground water. b. <u>The bore is not located within a Source Protection Zone</u></p>	<p>a. Bore location, diameter, depth. b. Bore screen slot size, length, depth and diameter. c. Well head completion. d. Backflow prevention. e. Information requirements, including bore logs, hydraulic head levels and aquifer tests. f. Duration of consent. g. Lapsing of consent. h. Review of consent conditions. i. Compliance monitoring.</p>	<p>Applications will generally be considered without notification, without the need to obtain the written approval of affected persons.</p>
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⁵ For the purposes of this Plan, a 'bore' is defined as any pipe, cylinder or hole inserted into the ground that either

- i. is created for the purpose of accessing underground water, oil or gas, or
- ii. penetrates a confined aquifer, or
- iii. in any way causes the release of water from a confined aquifer, or
- iv. is created for the purpose of exploring water, oil or gas resources.

Recommended changes to Proposed Plan Change 9

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>2 Bore drilling that does not comply with Rule 1 Refer POL 17, 21, 27, 75</p>	<p>The drilling, construction, or alteration of bores that does not comply with Rule 1.</p>	<p>Restricted discretionary</p>		<p>a. Bore location diameter, depth. b. Bore screen slot size, length, depth and diameter. c. Bore head completion. d. Backflow prevention. e. Information requirements, including bore logs, hydraulic head levels and aquifer tests. f. <u>In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, the actual or potential effects of the bore and bore drilling on the quality of source water for Registered Drinking Water Supplies irrespective of any treatment process for the Registered Drinking Water Supply</u> ^{207.45} and any measures to reduce the risk to the water quality including <u>advising any affected notification requirements to the Registered Drinking Water supplier of intent to drill prior to the activity occurring, the maintenance of the bore and the well head, including decommissioning the bore where necessary</u> g. <u>In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, information to confirm compliance with conditions (a) to (f) shall be provided to the Council.</u> ^{129.28} h. g. Duration of consent. i. h. Lapsing of consent. j. i. Review of consent conditions. k. j. Compliance monitoring.</p>	

Recommended changes to Proposed Plan Change 9

Remove Rule 3 from PPC9 as not being amended.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>4 Decommissioning of bores <i>Refer POL 75</i></p>	<p>The decommissioning or sealing of bores.</p>	<p>Permitted</p>	<p>a. Decommissioned bores shall be backfilled and sealed at the surface to prevent contamination of groundwater.</p> <p>b. Decommissioned holes and bores intersecting groundwater shall be sealed to prevent the vertical movement of groundwater, and to permanently confine the groundwater to the specific zone (or zones) in which it originally occurred.</p> <p>c. Backfill materials, where used between permanent seals, shall consist of clean sand, coarse stone, clay or drill cuttings. The material shall be non toxic.</p> <p>d. Decommissioning shall be undertaken by a suitably qualified person.</p> <p>e. The Council shall be advised of any bores that are decommissioned.</p> <p>f. <u>Where the bore is in a Source Protection Zone, information to confirm compliance with conditions (a) to (d) shall be provided to the Council upon request^{119.12}</u></p>		

Recommended changes to Proposed Plan Change 9

6.3.2 Feedlots & Feedpads

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>5 Feedlots & feedpads⁶ <i>Refer POL 71</i></p>	<p>The use of land for the purposes of operating a feedlot⁷ or feedpad⁸.</p>	<p>Permitted</p>	<p>a. The land used for the feedlot or feedpad shall be managed in a manner that prevents any seepage of contaminants into groundwater^{9,10}.</p> <p>b. The feedlot or feedpad shall be located no less than 20 m from any surface water body.</p> <p>c. The feedlot or feedpad shall be located no less than:</p> <ul style="list-style-type: none"> i. 150 metres from a residential building or any other building being part of a place of assembly on another site ii. 50 metres from a property boundary, and iii. 20 metres from a public road. <p>d. Runoff from the surrounding catchment area is prevented from entering the feedlot or feedpad.</p> <p><u>e. The feedpad or feedlot is not located in a Source Protection Zone</u></p>		

⁶ Rule 5 only address the use of land for a feedlot or feedpad (and thus, the effects associated with having a high density of animals on one site). Any discharges of contaminants associated with the operation of a feedlot or feedpad, e.g. the use of stock feed and the management of animal effluent, are addressed under rules in sections 6.4 and 6.6 of this Plan. Any discharge of contaminants associated with the operation of a feedlot or feedpad, such as the disposal of animal wastes and the bedding material or the runoff of manure during heavy rainfall are addressed under Rules in Sections 6.4 and 6.6. Any discharge of contaminants to air are covered in Rule 21.

⁷ For the purposes of this Plan, a 'feedlot' is defined as an area of land upon which animals are kept and fed, for more than 15 days in any 30 day period, where the stocking density or feedlot structure (e.g. a concrete pad) precludes the maintenance of pasture or ground cover.

⁸ For the purposes of this Plan, a 'feedpad' is defined as an area of land to which animals are brought for supplementary feeding on a regular basis, where the stocking density or feedpad structure precludes the maintenance of pasture or ground cover.

⁹ Sealing - The Council will accept, as one means of compliance with condition (a), the construction of a sealing layer with a permeability of no greater than 10⁻⁹ m/s (0.00000001 m/s).

¹⁰ **Compliance** – At any time Council may request information from the operator of a feedlot or feedpad to confirm compliance with condition (a).

Recommended changes to Proposed Plan Change 9

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>6 Feedlots & feedpads that do not comply with Rule 5¹¹ <i>Refer POL 17, 20, 47, 48, 71</i></p>	<p>The use of land for the purposes of operating a feedlot or feedpad, in a manner which does not comply with Rule 5.</p>	<p>Restricted discretionary</p>		<p>a. The conditions which the activity cannot comply with, and the related environmental effects. b. Duration of consent. c. Lapsing of consent. d. Review of consent conditions. e. Compliance monitoring. f. In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, the actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies irrespective of any treatment process for the Registered Drinking Water Supply, and any measures to manage the risks to the water quality.^{207.46}</p>	

¹¹ Rule 6 only address the use of land for a feedlot or feedpad (and thus, the effects associated with having a high density of animals on one site). Any discharges of contaminants associated with the operation of a feedlot of feedpad, e.g. the use of stock feed and the management of animal effluent, are addressed under rules in sections 6.4 and 6.6 of this Plan. Any discharge of contaminants associated with the operation of a feedlot or feedpad, such as the disposal of animal wastes and the bedding material or the runoff of manure during heavy rainfall are addressed under Rules in Sections 6.4 and 6.6. Any discharge of contaminants to air are covered in Rule 21.

Recommended changes to Proposed Plan Change 9

6.3.3 Vegetation Clearance and Soil Disturbance Activities

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>7</p> <p>Vegetation clearance and soil disturbance¹²</p> <p>29a</p> <p><i>Refer to POL 3, 67, 71</i></p>	<p>Vegetation clearance¹³ or soil disturbance¹⁴ activities.</p>	Permitted	<p>a. All cleared vegetation, disturbed soil or debris shall be deposited or contained to reasonably prevent the transportation or deposition of disturbed matter into any water body¹⁵.</p> <p>b. Vegetation clearance or soil disturbance shall not give rise to any significant change in the colour or clarity of any adjacent water body, after reasonable mixing.</p> <p>c. No vegetation clearance shall occur within 5 metres of any permanently flowing river, or any other river with a bed width in excess of 2 metres, or any other lake or wetland, except that this condition shall not apply to:</p>		

¹² Rule 7 does not apply to the trimming, felling, or removing of any tree or vegetation or earthworks, in relation to an existing high voltage electricity transmission lines. Refer to the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009.

^{29a} Rule 7 does not apply to the harvesting, vegetation clearance and soil disturbance associated with plantation forestry activities. Refer to the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017.

¹³ "Vegetation clearance" means the cutting, burning, clearing or destruction (including destruction by spraying) of trees, shrubs, or plants.

¹⁴ "Soil disturbance" means the disturbance of soil by any means including blading, contouring, ripping, discing, root raking, moving, ploughing, removing, cutting and blasting. Vegetation clearance and soil disturbance exclude:

- The normal maintenance of legally established structures, roads, tracks, railway lines and river beds.
- The clearance of grasses, forest thinning, and agricultural and horticultural crops.
- The clearance of isolated or scattered regrowth on productive pasture.
- The clearance of any indigenous vegetation understorey beneath plantation forests.
- The clearance of noxious weeds covered by the Regional Plant Pest Management Strategy prepared under the Biosecurity Act, 1993.
- Non-motorised soil disturbance activities.
- Thrusting, boring, trenching or mole ploughing associated with cable or pipe laying or a network utility operation.
- Soil disturbance undertaken by a mine or quarry operation which either had a valid mining licence at the date the Proposed Regional Resource Management Plan was publicly notified (15 April 2000) or is lawfully established.
- Cultivation and grazing.
- Foundations works for structures.
- Construction and maintenance of fences and drains.

¹⁵ Explanation of Rule 7 (a): In considering whether condition (a) in Rule 7 has been met, Council shall have regard to recognised Industry Codes of Practice, Best Practice Guidelines and Environmental Management Plans relevant to and adopted in carrying out the activity.

NOTE: 10 kg/m² of dry soil is equivalent to 5 mm depth assuming a specific gravity of 2 kg/litre.

^{32a} NOTE: Rule 7(c) has been deleted to ensure the Regional Plan aligns with the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 and does not conflict with, or duplicate the requirements within those Regulations.

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Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> i. the clearance of plantation forestry established prior to the date of this Plan becoming operative, or 32a ii. the areas identified in Schedule X to this Plan. d. Deposition of soil or soil particles across a property boundary shall not be objectionable or offensive, cause property damage or exceed 10 kg/m². e. Where the clearance of vegetation or the disturbance of soil increases the risk of soil loss the land shall be: <ul style="list-style-type: none"> i. re-vegetated as soon as practicable after completion of the activity, but in any event no later than 18 months with species providing equivalent or better land stabilisation; or ii. retained in a manner which inhibits soil loss. f. <u>In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, there is no clearance of indigenous vegetation within 10m of any rivers except;</u> <ul style="list-style-type: none"> i. <u>where the clearance is part of improvements to riparian management for water quality/biodiversity purposes as specified in the relevant Freshwater Farm Plan Environment or Catchment Collective Plan;</u> ii. <u>where the clearance is necessary for construction of crossings or installation of a reticulated or network service</u> g) <u>In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments there is no cultivation of land over 20 degrees of slope except where it is less than 10% of the paddock area.</u> h) <u>In the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, there is no cultivation of land that results in exposure of bare soil within;</u> <ul style="list-style-type: none"> i. <u>5 m of any river, modified watercourse or drain or lake or wetland where the land is flat to gently rolling (0-7 degrees of slope);</u> ii. <u>10 m of any river, modified watercourse or drain or lake or wetland where the land is moderately rolling (>7 – 20 degrees of slope);</u> iii. <u>15 m of any river, modified watercourse or drain or lake or wetland where the land is over 20 degrees of slope;</u> i) <u>Except conditions h(i) – (ii) do not apply:</u> <ul style="list-style-type: none"> i. <u>where cultivation is part of improvements to riparian management for water quality/biodiversity purposes as</u> 		

Recommended changes to Proposed Plan Change 9

			<p>iv. <u>specified in the relevant Freshwater Farm Plan Environment or Catchment Collective Plan;</u> <u>where the cultivation is in relation to activities permitted by Rule 70.</u></p>		
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Recommended changes to Proposed Plan Change 9

6.4.2 Agricultural Activities & Other Activities on Production Land - Discharges to Air/Land/Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>12 Stock feed Refer POL 12, 69, 71, 75</p>	<p>The discharge of contaminants into air, or onto or into land arising from the storage, transfer, treatment, mixing or use of stock feed¹⁶ on production land, including silage.</p>	<p>Permitted¹⁷</p>	<p>a. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va) or the Ruataniwha Plains unconfined aquifer (Schedule IV) which is used for storing stock feed, including silage, and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination.</p> <p>b. Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property.</p> <p>c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner.</p> <p>d. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property.</p> <p>e. There shall be no discharge within 20 m of any surface water body.</p> <p>f. There shall be no surface ponding in any area used to store stock feed or feed stock, and no runoff of contaminants into any surface water body.</p> <p>g. There shall be no discharge within 30 m of any bore or well.</p> <p>h. Where the activity is in a Source Protection Zone, information to confirm compliance with conditions (a) to (g) shall be provided to the Council upon request^{139, 119.12}</p>		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>13 Use of compost, biosolids & other soil conditioners¹⁸ Refer POL</p>	<p>The discharge of contaminants into air, or onto or into land, arising from the storage, transfer, treatment, mixing or use of compost, biosolids and other (solid or liquid) organic material for soil</p>	<p>Permitted²¹</p>	<p>c. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va) or the Ruataniwha Plains unconfined aquifer (Schedule IV) which is used for storing organic material and when there is a potential for contamination of ground water by seepage of contaminants, shall be managed in a manner that prevents such contamination.</p> <p>d. Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property.</p> <p>e. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the</p>		

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<p>12, 69, 71, 75</p>	<p>conditioning purposes¹⁹ including:</p> <ul style="list-style-type: none"> ● paunch grass ● apex meal ● stockyard scrapings ● grape marc ● compost (except as regulated by Rule 28²⁰) and poultry manure (except as regulated by Rule 11 or 14). 		<p>affected property owner.</p> <p>f. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property.</p> <p>g. There shall be no surface ponding in the area used to store, mix or use the organic material, and no runoff of contaminants into any surface water body.</p> <p>h. There shall be no discharge within 30 m of any bore or well.</p> <p>i. The discharge shall occur no less than 600 mm above the winter ground water table.</p> <p>j. Where material is discharged onto grazed pasture, the application rate shall not exceed 150 kg/ha/y of nitrogen.</p> <p>k. Where material is discharged onto land used for a crop, the application rate shall not exceed the rate of nitrogen uptake by the crop.</p> <p><u>l. Where the activity is in a Source Protection Zone, the storage or processing of compost or bio-solids and other soil conditions does not exceed 100 cubic metres of material.</u></p>		
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¹⁶ For the purposes of this Plan, “stock feed” means organic material that can be consumed by farmed animals.

¹⁷ If Rule 12 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

²¹ If Rule 13 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

¹⁸ If Council receives complaints about an activity operating under this rule, the Council may request a management plan which sets out how the conditions are being met.

¹⁹ For the purpose of this rule “soil conditioning purposes” means the application of organic material to improve the structure and quality of the soil

²⁰ The composting of more than 100 m³ of compost and raw material per premises is regulated by Rule 28.

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Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>14 Animal effluent <i>Refer POL 8, 12, 14, 17, 19, 47</i></p>	<p>The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent²², including dairy shed effluent, piggery effluent, and poultry farm effluent²³, including associated sludges (except as provided for by Rules 13 & 15).</p>	<p>Controlled²⁴</p>	<p>a. Any area used for storing animal effluent, where there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents any such contamination.</p> <p>b. Either:</p> <p>i. there shall not be offensive or objectionable odour, or noxious or dangerous levels of gases or other airborne liquid contaminants, beyond the boundary of the subject property, or</p> <p>ii. for discharges of effluent from piggeries, every point of discharge shall be sited so as to meet the requirements of the "Code of Practice - Pig Farming" (New Zealand Pork Industry Board, 1997), in respect of buffer zone distances.</p> <p>c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner.</p> <p>d. There shall be no runoff of any contaminant into any surface water body.</p> <p>e. There shall be no discharge within 30 m of any bore or well.</p> <p>f. Where effluent is discharged onto grazed pasture, the nitrogen loading rate from the effluent application shall not exceed 150 kg/ha/y of nitrogen.</p> <p>g. Where effluent is discharged onto land covered by a crop, or to be used for cropping purposes, the application rate shall not exceed the rate of nitrogen uptake by the crop.</p> <p>h. <u>The activity is not in a Source Protection Zone</u></p>	<p>a. Amount of effluent per discharge.</p> <p>b. Frequency of discharge.</p> <p>c. Maintenance of vegetative cover.</p> <p>d. Buffer zone requirements.</p> <p>e. Measures to avoid a breach of the environmental guidelines for surface and groundwater quality set out in section 5.4 and 5.6.</p> <p>f. Management of cumulative adverse effects.</p> <p>g. For discharges of effluent from piggeries, use of the best practicable option for minimising discharges of odour beyond the boundary of the subject property.</p> <p>h. Duration of consent.</p> <p>i. Review of consent conditions.</p> <p>j. Compliance monitoring.</p>	<p>Applications may be considered without notification, without the need to obtain the written approval of affected persons, except that written approval of affected neighbours may be required for new consents, but upon renewal the approval of affected neighbours will not be required.</p>

²² For the purposes of this rule, "animal effluent" refers to animal excreta (excluding human waste) that is collected and managed by people, including associated process water and contaminants including associated process water, contaminants and sludges.

²³ Rule 14 covers the discharge of poultry effluent from poultry farms on land associated with the poultry farm, where the discharge is for the purpose of disposal.

²⁴ If Rule 14 cannot be complied with, then the activity is a restricted discretionary activity under Rule 30, or a discretionary activity under Rule 52, whichever is relevant.

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Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>15</p> <p>Discharge of animal effluent in sensitive catchments <i>Refer POL 8, 17, 19, 20, 47</i></p>	<p>The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent²⁵, including dairy shed effluent, piggery effluent, and poultry farm effluent in the following catchments as shown in Schedule VIb:</p> <ul style="list-style-type: none"> • Headwaters of Mohaka River • Headwaters of the Ngaruroro River • Maungawhio • Lake Hatuma • Lake Tutira • Heretaunga Plains unconfined aquifer • Ruataniwha Plains unconfined aquifer • Lake Whakaki • Headwaters of the Tutaekuri River • Headwater of the Tukituki River. <p><u>Or in any Source Protection Zone</u></p>	<p>Discretionary</p>			

²⁵ For the purposes of this rule, “animal effluent” refers to animal excreta (excluding human waste) that is collected and managed by people, including associated process water and contaminants including associated process water, contaminants and sludges.

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6.5.1 Water - Discharges to Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
31 Discharge of water ²⁶ <i>Refer POL, 71, 79</i>	The discharge of water (excluding drainage water) into water ²⁷ .	Permitted ²⁸	<ul style="list-style-type: none"> a. The discharge shall not cause or contribute to the flooding of any property, unless written approval is obtained from the affected property owner. b. The discharge shall not cause any scouring or erosion of any land or any watercourse beyond the point of discharge. c. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3°C from normal seasonal water temperature fluctuations, after reasonable mixing²⁹. d. <u>The discharge is not a discharge of groundwater into surface water in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments</u> 		

ADVISORY NOTE:

1. Discharge of water onto or into land - Note that the discharge of water onto or into land is not restricted by the RMA.

²⁶ Rule 31 does not apply to the discharge of water into water in relation to an existing high voltage electricity transmission activity. Refer to the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009.

²⁷ Discharges of sediment to surface water bodies as a result of scouring are covered by Rule 49.

²⁸ If Rule 31 cannot be complied with, then the activity is a discretionary activity under Rule 52.

²⁹ See Glossary for definition of “after reasonable mixing”.

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6.6.2 Drainage Water - Discharges to Land/Water

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>32 Discharge of drainage water (gravity flow systems) <i>Refer POL 71, 72, 79</i></p> <p>123.118, 124.30, 129.29, 180.64, 210.106,</p>	<p>The diversion and discharge of drainage³⁰ water into water or onto or into land, from a gravity flow system (without pumping).</p>	<p>Permitted³¹</p>	<p>a. There shall be no adverse flooding effects on any property owned or occupied by another person, as a result of any discharge from the drainage activity.</p> <p>b. The discharge shall not cause any scouring or erosion of any land or any water course beyond the point of discharge.</p> <p>c. The activity shall not adversely affect any wetland³².</p> <p>d. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3°C from normal seasonal water temperature fluctuations, after reasonable mixing.</p> <p>e. Any discharge of water arising from a drainage system shall be to the same catchment³³ as that to which the water would naturally flow.</p> <p>f. Any suspended solids in the discharge shall comply with Policy 72 <u>except in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.</u></p> <p>g. <u>10 years after the operative date of PC9, After ten years after 2 May 2020 in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, dissolved nutrient and sediment concentrations in the receiving water after reasonable mixing shall not increase as a result of the discharge when measuring:</u></p> <p style="margin-left: 40px;"><u>i DIN</u></p> <p style="margin-left: 40px;"><u>ii DRP</u></p> <p style="margin-left: 40px;"><u>iii suspended sediment.</u></p>		

³⁰ 'Drainage' means the activity of lowering the water table to achieve productive land use to facilitate stability of land or structures, or to achieve some other resource use activity. This generally involves the diversion of water.

³¹ If Rule 32 cannot be complied with, then the activity is a discretionary activity under Rule 52.

³² For the purposes of this Plan the term 'wetland' does NOT include:

- wet pasture land
- artificial wetlands used for wastewater or stormwater treatment
- farm dams and detention dams
- land drainage canals and drains
- reservoirs for firefighting, domestic or municipal water supply
- temporary ponded rainfall
- artificial wetlands.

³³ 'Catchment' means the total area from which a single water body collects surface and subsurface runoff.

Recommended changes to Proposed Plan Change 9

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>New RRMP rule 33A Drainage water</p> <p>123.118, 124.30, 129.29, 180.64, 210.106,</p>	<p>The diversion and discharge of land drainage water from an existing pumped drainage system (small scale)</p>	<p>Permitted</p>	<p>a) The discharge is in a Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments b) The pumped drainage system existed at 2 May 2020 c) The land area being serviced by the drainage network is less than 10ha d) There shall be no increase in flooding on any property owned or occupied by another person, as a result of any discharge from the drainage activity. e) The discharge shall not cause any scouring or erosion of any land or any watercourse beyond the point of discharge. f) The activity shall not result in changes to water levels in any connected wetland g) The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3°Celsius from normal seasonal water temperature fluctuations, after reasonable mixing. h) Any discharge of water arising from a drainage system shall be to the same catchment as that to which the water would naturally flow. i) After ten years after 2 May 2020 in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, dissolved nutrient and sediment concentrations in the receiving water after reasonable mixing shall not increase as a result of the discharge when measuring: — i DIN — ii DRP — iii suspended sediment</p>		

Recommended changes to Proposed Plan Change 9

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>33 Discharge of drainage water (pumped systems)</p> <p>Refer POL 71, 72, 79</p> <p>123.118, 124.30, 129.29, 180.64, 210.106,</p>	<p>The diversion and discharge of drainage³⁴ water into water or onto or into land, from a pumped system³⁵.</p>	<p>Controlled³⁶</p>	<p>a. There shall be no adverse flooding effects on any property owned or occupied by another person, as a result of the drainage activity.</p> <p>b. The discharge shall not cause any scouring or erosion of any land or any water course beyond the point of discharge.</p> <p>c. The activity shall not adversely affect any wetland.</p> <p>d. The discharge shall not cause the natural temperature of any receiving water to be changed by more than 3°C from normal seasonal water temperature fluctuations, after reasonable mixing.</p> <p>e. Any discharge of water arising from a drainage system shall be to the same catchment³⁷ as that to which the water would naturally flow.</p> <p>f. Any suspended solids in the discharge shall comply with Policy 72 except in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units</p> <p>g. After ten years after 2 May 2020 in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū water quality management units, dissolved nutrient and sediment concentrations in the discharge water are no more than in the receiving water at the point of discharge as measured by:</p> <p>i. DIN</p> <p>ii. DRP</p> <p>iii. suspended sediment.</p>	<p>a. Location of discharge.</p> <p>b. Rate of pumping.</p> <p>c. Time of pumping.</p> <p>d. Flood mitigation measures.</p> <p>e. Duration of consent.</p> <p>f. Review of consent conditions.</p> <p>g. Compliance monitoring.</p> <p>h. For activities carried out in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments, monitoring water quality to categorise the nature and extent (concentration and loads) of contaminants in the drainage water:</p> <p>i. measures or methods required for meeting the receiving water quality standards.</p> <p>ii. Monitoring for water quality</p>	<p>Applications will generally be considered without notification or the need to obtain the written approval of affected persons.</p>

³⁴ 'Drainage' means the activity of lowering the water table to achieve productive land use to facilitate stability of land or structures, or to achieve some other resource use activity. This generally involves the diversion of water.

³⁵ While the discharge of drainage water by gravity flow is a permitted activity, the discharge of drainage water from a pumped system requires a resource consent due to the potential adverse environmental effects of greater water flow, generated by a pumped system. The consent authority may require the ability to control the water flow from time to time, such as through temporary cessation of pumping or other means.

³⁶ If Rule 33 cannot be complied with, then the activity is a discretionary activity under Rule 52.

³⁷ 'Catchment' means the total area from which a single water body collects surface and subsurface runoff.

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6.6.4 Domestic Sewage - Discharges to Land

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>37 New³⁸ sewage systems</p> <p><i>Refer POL 16, 71, 75</i></p>	<p>Except as provided for in Rule 35 or Rule 36, the discharge of contaminants (including greywater) onto or into land, and any ancillary discharge of contaminants into air, from a new sewage system.</p>	<p>Permitted</p>	<p>a. Where the wastewater receives no more than advanced primary treatment, the discharge shall be onto or into a property with a land area of no less than 2500m².</p> <p>aA. Where the wastewater receives more than advanced primary treatment then:</p> <p>i. the discharge shall be onto or into a property with a land area of no less than 1000m²; and</p> <p>ii. the net site area to discharge volume ratio shall not be less than 1.5 m² per litre per day³⁹.</p> <p>b. The rate of discharge of sewage (including greywater) shall not exceed 2 m³/d, averaged over any 7 day period.</p> <p>c. The treatment and disposal system shall be designed to cater for the peak daily loading.</p> <p>d. The discharge shall not occur over the Heretaunga Plains or Ruataniwha Plains unconfined aquifer as shown in Schedule IV.</p> <p>e. The discharge and land treatment field shall not be within 20 m of any surface water body (including any stormwater open drain or roadside drain), or any tile drain or within 1.5 metres of any property boundary.</p> <p>eA. The system shall be designed and installed in accordance with the requirements specified in Figure 6.</p> <p>f. There shall be no surface ponding as a result of the discharge, or direct discharge into any water body.</p> <p>g. The discharge shall be distributed evenly over the entire disposal area.</p> <p>h. There shall be no increase in the concentration of pathogenic organisms in any surface water body as a result of the discharge.</p> <p>i. At the time of installation and commencement, the discharge shall not occur within 30 m of any bore drawing groundwater from an unconfined aquifer into which any contaminant may enter as a result of the discharge.</p> <p>j. The point of discharge shall be no less than 600 mm above the highest seasonal groundwater table.</p> <p>k. The discharge shall not result in, or contribute to, a breach of the "Drinking Water Quality Standards for New Zealand" (Ministry of Health, 2005 (Revised 2008)) in any groundwater body after reasonable mixing.</p> <p>l. The discharge shall not cause any emission of offensive or objectionable odour, or release of noxious or dangerous gases (including aerosols) beyond the boundary of the subject property or on any public land.</p>		

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			<p>m. For discharges using pit privies:</p> <ul style="list-style-type: none"> i. the privy shall be constructed in soil with an infiltration rate not exceeding 150 mm/h, and ii. the privy shall not be the primary wastewater system for any permanently occupied dwelling. <p>n. The system shall be designed, constructed, operated and maintained in a manner which ensures that there is no clogging of the disposal system or soils.</p> <p>nA. The discharge shall not be into a trench or bed disposal system constructed in category 5 or 6⁴⁰ soil except where wastewater receives at least secondary treatment.</p> <p>o. Where the wastewater receives secondary treatment or better, the discharge shall not exceed 20 g/m³ of BOD, and 30 g/m³ of suspended solids.</p> <p>p. The wastewater treatment and land application system shall be maintained in accordance with the manufacturer's instructions, or if no manufacturer's instructions exist, in accordance with the best management practice as described in AS/NZS 1547, or TP58: On-site Wastewater Systems: Design and Management Manual (Auckland Regional Council Technical Publication No. 58), or other alternative recognised on-site wastewater design manuals. A schedule of maintenance shall be kept, and this schedule shall be available for inspection by the Regional Council upon request.</p> <p>q. The discharge shall not be disposed of by way of spray irrigation.</p> <p>r. The discharge shall not be into a raised bed.</p> <p>s. <u>The activity is not located in a Source Protection Zone.</u></p>		
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³⁸ NOTE: New sewage systems include those systems installed after this Plan becomes operative, as well as those lawfully established sewage systems that have been modified or replaced since 1 January 2012.

³⁹ NOTE: The net site area to discharge volume ratio can be calculated by dividing the net site area by the expected daily wastewater volume. If the answer is less than 1.5, the discharge does not comply with this condition. e.g. a 1000 m² property with a three bedroom home on it with maximum daily discharge volume of 1200 L (6 people at 200 L/p/d) has a ratio of 0.83 (1000/1200). This discharge would not comply with this condition.

⁴⁰ A category 5 soil is a light clay, permeability (Ksat) can range generally between 0.5 m/d (strongly structured) and <0.06 m/d (weakly structured or massive) and the soil is poorly drained. Clay content of approximately 35-40%. Category 6 soils are medium to heavy clays that are very poorly drained. The permeability of category 6 soils is generally less than 0.06 m/d. Clay content of over 40%.

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6.6.5 Stormwater - Discharges to Land/Water

Insert after the heading;

Rules 42 – 46 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments. Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū rules for stormwater.

6.7.1 Take & Use of Water

Insert after the heading;

Rules 53 – 55 do not apply in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū rules for take and use of water.

6.7.3 Transfer of Water Permits

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
60 Transfer of permits to take & use surface water from a lake <i>Refer POL36</i>	The transfer of a permit to take and use surface water from a lake, to another site.	Permitted	a. The transfer is to another site within the same lake.		
61 Transfer of permits to take & use surface water from a river <i>Refer POL 36, 79</i>	The transfer of a permit to take and use surface water from a river, to another site.	Controlled	a. The transfer is to another site within the same stream management zone, ⁴¹ where the flow is not significantly less than at the original site of abstraction. b. The transfer shall not result in any reduction in the rate of surface water recharge into groundwater. c. The transfer shall not adversely affect any lawfully established surface water abstraction, which existed prior to transfer of the take. d. The transfer shall not result in any increase in adverse effects on aquatic ecosystems or fish passage. e. <u>The transfer is not in any Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment</u>	a. Timing of take. b. Design of intake. c. Duration of consent. d. Review of consent conditions. e. Compliance monitoring. f. Volume of water required by, or reasonable needs of, transferee. g. In the Tukituki River catchment, the efficient use of water having regard to POL TT12.	Consent applications will generally be considered without notification, without the need to obtain the written approval of affected persons.

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<p>62 Transfer of permits to take & use groundwater <i>Refer POL 25, 77</i></p>	<p>The transfer of a permit to take and use groundwater, to another site.</p>	<p>Controlled</p>	<p>a. The transfer is to another site within the same aquifer. b. The transfer is to a location at which the aquifer has the same or greater aquifer transmission and storage characteristics. c. The transfer shall not adversely affect any lawfully established efficient groundwater abstraction,⁴² which existed prior to transfer of the take. d. The transfer shall not cause any reduction in the flow of any river or spring. e. <u>The transfer is not in any Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment</u></p>	<p>a. Aquifer testing. b. Duration of consent. c. Review of consent conditions. d. Compliance monitoring. e. Volume of water required by, or reasonable needs of transferee. f. In the Tukituki River catchment, the efficient use of water having regard to POL TT12.</p>	<p>Consent applications will generally be considered without notification, without the need to obtain the written approval of affected persons.</p>
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⁴¹ “Stream Management Zone” refers to the reaches of a river and/or its tributaries governed by a single minimum flow site.

⁴² For the purposes of this Plan “efficient abstraction” of groundwater means abstraction by a bore which penetrates an aquifer from which water is being drawn at a depth sufficient to enable water to be drawn all year (i.e. the bore depth is below the range of seasonal fluctuations in groundwater level), with a pump capable of drawing water to the land surface.

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<p><u>Insert new RRMP Rule 62a</u> <u>Transfer of permits to take and use water</u></p>	<p><u>Permanent or temporary transfer of water in accordance with S136(2)(b)(i) of the RMA</u></p>	<p><u>Controlled</u></p>	<p>i) The transfer is not part of stream flow maintenance provided by Rule TANK 18.^{Consequential to Section 15.6.10}</p> <p>ii) <u>The transfer is the whole or any part of the holder's interest in the permit for taking and use of surface or groundwater:</u></p> <p>i. To any person or occupier of the site in respect of which the permit is granted, or^{129.30}</p> <p>ii. To another person on another site</p> <p>iii. To another site^{195.120}</p> <p>iii) <u>The transfer is not between ground and surface water point of take.</u></p> <p>iv) <u>The permit is:-</u></p> <p>i.) within the same catchment to any point downstream (excluding downstream tributaries) of the location to which the permit applies.;</p> <p>ii) for groundwater takes in the Heretaunga Plains Water Management Unit (Quantity), the transfer is to any point downstream of any affected stream;^{14.18, 15.17, 20.17, 29.47, 129.32, 180.66, 208.17, 238.20}</p> <p>and</p> <p>ii.) the transfer is within the same Water Quantity Area Freshwater Management Unit (Quantity)</p> <p>e. <u>The transfer of a groundwater take is to an existing bore for which pump tests are available and there is no change to increase in the nature and scale of drawdown effects on neighbouring bores or connected water bodies as a result of the transfer</u>^{14.18, 15.17, 20.17, 29.47, 129.33, 180.66, 208.17, 238.20}</p> <p>f. <u>The transfer does not result in an increase in nitrogen loss exceeding the amounts as specified in Table 2 in Schedule 29</u>^{29.63}</p> <p>g. <u>All parties to the transfer shall have metering and reporting at any applicable recording and reporting level except for temporary transfers of less than five days per annum.</u>^{Measurement and Reporting Regulations}</p> <p>h. <u>In fully or over-allocated water quantity areas management units, the transfer shall only be of that part of the permit for which there is a Actual and Reasonable use*</u></p>	<p><u>Insert new RRMP Rule 62a</u></p> <p><u>a. Transfer of permits to take and use water</u></p> <p><u>a. Any applicable conditions on the permit being transferred and any water use permit at the location the water is to be transferred to.</u></p> <p><u>b. The quantity, rate and timing of the take, including rates of take and any other requirements in relation to any relevant minimum flow or level or allocation limit or drawdown effects, including in relation to any Source Protection Zone for a registered drinking water supply.</u></p> <p><u>c. Compliance with any applicable minimum flows and levels including flow maintenance in any applicable stream.</u></p>	
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Recommended changes to Proposed Plan Change 9

			<p>i. <u>The purpose for the water use does not change except:</u></p> <p><u>i. that water takes for irrigation use may be transferred for irrigation of different crops subject to conditions (e) and (f)</u></p> <p><u>ii. for transfers that enable the operation of a flow enhancement scheme (ref Policy 38)</u></p> <p><u>iii. the transfer enables efficient delivery of water supply to meet the communities' human health needs.</u></p> <p>Advisory Notes</p> <ul style="list-style-type: none"> • Pursuant to s136(3) of the RMA, the transfer has no effect until written notice of the transfer is received by Hawkes Bay Regional Council. The HBRC will accept transfers via any website being managed for this purpose as satisfying this requirement^{129,31} • <u>For the purpose of (i), the transfer of water from any municipal use to any other municipal use is not considered a change in use.</u>^{63,31, 207,33} • <u>Section 136(5) of the RMA provides that when notification of the transfer has occurred, the permit, or that part of the permit transferred shall be deemed to be cancelled, and the permit or part transferred shall be deemed to be a new permit subject to the same conditions as the original permit.</u> <p>j. <u>Note that Rules TANK 5, and 6 or 18 may be triggered as a result of a transfer activity.</u></p>		
<p><u>Insert new rule 62b</u> <u>Transfer of permits to take and use water</u></p>	<p><u>Permanent or temporary transfer of water in accordance with S136(2)(b)(i) of the RMA</u></p>	<p><u>Discretionary</u></p>	<p><u>a. The transfer is the whole or any part of the holder's interest in the permit for taking and use of surface or groundwater that does not comply with Rule 62a</u></p>		

ADVISORY NOTE: Notifying transfers of water permits - Pursuant to section 136 of the RMA, the transfer of a water permit has no effect until written notice of the transfer has been received by the HBRC. In addition, section 136 also sets out the requirements for the transfer of a water permit in circumstances that do not comply with the rules above.

Recommended changes to Proposed Plan Change 9

6.8.2 Erection & Placement of Dams & Other Barrier Structures, & Damming of Water

Insert after heading

Rule 69 does not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments. Refer to Section 6.10 for the new Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchment rules for dams and damming.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>67 Dams, weirs & other barrier structures in rivers, lakes and artificial water – courses^{150B} <i>Refer POL 79</i></p>	<p><u>Except as prohibited by Rule TANK 17,</u> the erection or placement of any dam⁴³, weir or other barrier structure in, on, under, or over the bed of a river, lake and artificial watercourse, and:</p> <ul style="list-style-type: none"> any associated damming or diversion of water, and any associated discharge of sediment; and any associated disturbance of the river or lake bed. <p><u>This permitted activity does not apply to the erection of dams on the mainstem of any river where it is prohibited by Rule TANK 17</u></p>	<p>Permitted⁴⁴</p>	<p>a. The catchment area of the <u>new</u> structure shall not exceed 50 hectares. b. The volume of water to be stored or retained by the <u>new</u> structure to spill level shall not exceed 20,000 m³. c. The height of the structure (as measured vertically from the downstream bed to the crest) shall be no greater than 4 m. d. A spillway shall be constructed to prevent the <u>new</u> structure being overtopped during storm events, unless the structure is designed to allow overtopping. e. The impounded water shall not encroach onto any property, nor impede any drainage system, beyond the subject property unless agreed to in writing by any affected property owners. f. Erection or placement of the structure shall not cause any erosion, scour or deposition beyond the area of erection or placement. g. The impounded water shall not cause any erosion or instability of bordering land. h. Within rivers and lakes, provision shall be made to maintain existing fish passage within the water body and, where the water body is permanently flowing, provision shall be made to maintain a residual flow immediately downstream of the structure of at least 1.2 l/min per hectare of catchment above the structure, except at times where such flow would not have occurred prior to the construction of the structure.</p>		

^{150B} Rule 67 does not apply to dams, weirs & other barrier structures in rivers, lakes and artificial watercourses associated with plantation forestry activities. Refer to the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017

⁴³ Dams - Include stock water dams, Irrigation dams, fire-fighting dams and dams in artificial water courses.

⁴⁴ If Rule 67 cannot be complied with, then the activity is a discretionary activity under Rule 69.

Recommended changes to Proposed Plan Change 9

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>i. Where the volume of water to be stored or retained by the structure to spill levels exceeds 10,000 m³ and where the structure is located within the catchment of a land drainage or flood control scheme area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and River Control Act 1941, the Land Drainage Act 1908, or the Local Government Act 1974 the HBRC shall be informed about the erection or placement of the structure at least 15 working days prior to the commencement of works.</p> <p>j. There shall be no disturbance of any part of the bed covered by water from 1 May to 30 September (fishspawning season) except in relation to the erection of whitebait stands, maimai, and necessary access structures to these.</p> <p>k. In areas of fish spawning there shall be no disturbance of any part of the bed covered by water from 1 May to 30 September (fish spawning season) except in relation to the erection of whitebait stands, maimai, and necessary access structure to these.</p> <p>l. Conditions (a) to (d) do not apply to structures which are located in a land drainage or flood control area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908 or the Local Government Act 1974.</p>		
<p>68 Existing damming of water in rivers and lakes Refer POL 79</p>	<p>Any existing damming of water associated with a lawfully established dam⁴⁵, weir, or other barrier structure in, on, under, over the bed of a river, lake or artificial water course that is not provided for by Rule 67.</p>	<p>Controlled</p>	<p>a. The impounded water shall not encroach onto any property beyond the subject property, unless agreed to in writing by any affected property owners.</p>	<p>a. Stability of the land bordering the dam. b. Residual downstream flow. c. Flood risk in the event of failure. d. Maintenance of structure. e. Duration of the consent. f. Review of consent conditions. g. Compliance monitoring.</p>	<p>Consent applications will generally be considered without notification without the need to obtain the written approval of affected persons.</p>
<p>69 River & lake bed</p>	<p><u>Except within the Tūtaekurī, Ahuriri, Ngaruroro and</u></p>	<p>Discretionary</p>			

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<p>activities that are not expressly regulated by other rules <i>Refer POL 79</i></p>	<p><u>Karamū catchments</u> Any activity which cannot comply with any of the rules in section 6.8 of this Plan and which is not expressly regulated by other rules in this Plan. <u>This rule does not apply to rivers in the Tūtaekuri, Ahuriri, Ngaruroro and Karamū catchments (refer Rules TANK 13-17)</u></p>				
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Duplicate Rule 69 deleted.

Delete RRMP Rule 70 from PPC9 as no amendments have been made. This is a consequential amendment to 210.110

⁴⁵ Dams - Include stock water dams, Irrigation dams, fire-fighting dams and dams in artificial water courses.

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Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>71 Activities affecting river control & drainage schemes^{48,49} <i>Refer POL 79</i></p>	<p>Any of the following activities, where they are undertaken by persons other than the local authority or persons acting on their behalf, within a land drainage or flood control scheme area that is managed by a local authority exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908, or the Local Government Act 1974:</p> <ul style="list-style-type: none"> • The introduction or planting of any plant including any tree in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed <u>except that this provision does not apply to rivers for riparian vegetation established to provide shade in the Karamū catchments.</u> • The erection of any building, fence or other structure in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The deposition of any rock, shingle, earth, debris or other substance in, on, or under the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The reclamation or drainage of the bed of any river, lake or artificial water course. • The undertaking of any other land disturbance activity which impedes access to the bed of any river, lake or artificial water course, or within 6 metres of the bed. • The erection of any structure and the undertaking of any land disturbance activity which interferes with the integrity of any defence against water.⁵⁰ 	<p>Discretionary⁵¹</p>			

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<p>71A <u>Activities affecting river control & drainage schemes</u>^{48,49} <u>9</u></p>	<p><u>The introduction or planting of any plant including any tree in or on the bed of a river, lake or artificial watercourse or within 6 metres of the bed of any river within the Heretaunga Plains Flood Control and Drainage Scheme.</u></p>	<p>Permitted</p>	<p>g) <u>The planting complies with the planting design, including species, setbacks and density requirements specified in Hawke's Bay Regional Council's Water Way Planting Guide for the Heretaunga Plains Flood Control and Drainage Scheme (date)</u></p>		
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⁴⁷ For the purpose of this Plan the term 'wetland' does NOT include:

- wet pasture land artificial wetlands used for wastewater or stormwater treatment
- farm dams and detention dams land drainage canals and drains
- reservoirs for firefighting, domestic or municipal water supply temporary ponded rainfall
- artificial wetlands.

⁴⁸ It is important to note that the Hawke's Bay Regional Council owns much of the land within River Control and Drainage Schemes, and thus has landowner rights and responsibilities in relation to this land.

⁴⁹ Any activity permitted by Rules 64 and 65 is not subject to Rule 71.

⁵¹ The ongoing maintenance or repair of any structure authorized by a resource consent pursuant to Rule 71 is permitted pursuant to Rule 64.

⁵⁰ "Defence against water" includes stopbanks and their foundations.

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SCHEDULES

Insert the following new Schedules after Schedule 25

- Schedule 26
- ~~Schedule 27~~
- Schedule 28
- Schedule 29
- Schedule 30
- Schedule 31
- Schedule 32
- ~~Schedule 33~~
- Schedule 34A
- Schedule 34B
- Schedule 35
- Schedule 36

Schedules attached separately.

Chapter 9 Glossary of Terms Used

Insert or amend meanings for the following words and terms into the Glossary. Note that where a term is already included, its meaning is only changed in respect of the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

Actual and Reasonable in relation to applications to take and use water means;

- a) no more than the quantity specified on the permit due for renewal or any lesser amount applied for; and the least of either;
- b) the ~~maximum average~~ ^{consequential} ~~maximum~~ annual amount as measured by accurate water meter data in the ten years preceding ~~2 May 2020-1 August 2017 for groundwater takes in the Heretaunga Plains Water Management Unit or in the preceding ten years preceding the 2 May 2020 as applicable elsewhere~~^{82.4} if accurate water meter data is available. (If insufficient or no accurate data is available either clause a) or c) will apply);

or

- c) for irrigation takes, the quantity required to meet the modelled crop water demand for the irrigated area with an efficiency of application of no less than 80% as specified by the IRRICALC water demand model (if it is available for the crop and otherwise with an equivalent method), and to a 95% reliability of supply where the irrigated area is;
 - (i) no more than in the permit due for renewal, or any lesser amount applied for, and in the case of Heretaunga Plains ~~W~~Groundwater ~~Quantity Area Management Unit~~, is not more than the amount irrigated in the ten years preceding ~~2 May 2020-1 August 2017~~^{82.5}; and
 - (ii) evidence is supplied to demonstrate that the area has, and can continue to be, irrigated and the permit substantially given effect to.

~~**Affected stream** is one which the Stream Depletion Calculator identifies the greatest magnitude of stream depletion caused by that take (a take may cause stream depletion in more than one stream). The stream with the largest effect is the "affected stream".~~^{210.52}

Allocation limit for surface water means the maximum quantity that is able to be allocated in water permits and abstracted ~~for consumptive water use~~, expressed in litres per second and calculated as the ~~average rate required to abstract the maximum weekly or 28 day volume allocated to each water permit and summed for all water permits in the applicable management unit sum of weekly maximum water permit allocations for a river, or management zone averaged over one month and includes abstraction in Zone 1.~~^{129.40}

Allocation limit for Ggroundwater means the maximum quantity that is able to be allocated in water permits and abstracted during each year, expressed in cubic metres per year, and is calculated as the sum of maximum water permit allocations for the groundwater zone. Allocations for irrigation will be calculated on the basis of the irrigation period of November- May. The Heretaunga Plains Water Management Unit groundwater allocation limit will be addition to water taken and used for frost protection which is expressed as an instantaneous take in litres per second and calculated as the sum of water permit allocations.

Allocation limit for high flow takes means the maximum quantity that is able to be allocated in water permits and abstracted expressed in litres per second as an instantaneous flow and calculated as the sum of the instantaneous flow allocations in water permits for a river or management zone.

~~**Applicable stream flow maintenance scheme** is a stream flow maintenance scheme developed to maintain river flows in an affected stream when the trigger flow is reached. If no scheme is feasible, then there is no applicable scheme.~~^{210.152}

Application Efficiency (AE) means the percentage of applied water that is retained in the crop root zone or in the target area after an irrigation event. To meet good irrigation management practice, 80% of water applied must retained in the crop root zone.^{59.13, 59.41, 66.49, 66.12}

Aquifer testing means taking and using groundwater at a constant rate not exceeding 3 consecutive days in any 28 day period to test attributes and characteristics of an aquifer and/or groundwater. Those characteristics may include transmissivity, storativity and chemical composition. It does not include the taking or use of groundwater where a device is connected to that might result in variability of water flow.

Arable land use is as defined by Part 9 of the RMA.

The use of land to grow any of the following crops for harvest:

(a) grain cereal, legumes, or pulse grain

(b) herbage seed

(c) oilseed

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(d) maize grain, maize silage, cereal silage, or mangels

(e) crops grown for seed multiplication

(f) a crop prescribed in regulations made under section 217M(1)(a) consequential.

Consumptive water use means any use of fresh water that alters the flows and or levels in a water body on either a temporary or permanent basis, but excludes any non-consumptive use where:

- a) the same amount of water is returned to the same water body at or near the location from which it was taken; and
- b) there is no significant delay between the taking and returning of the water.

For the purposes of allocation limits and specified rationing provisions in the rules provisions in this Plan, the term 'consumptive use' does not apply to water used in hydro-electric power generation or water use or diversions which substantially return the water used to the same water body.^{129.42}

Crop rotation means the systematic planting of different crops in sequence over multiple years within the same growing space or across changing land parcels, and often including a pasture phase^{180.80, 180.31}.

Essential human health needs means the proportion of water supplied to residential and other end users for essential human health needs and will be calculated at a rate of 200l litres per person per day (l/p/d). (Note this is from MfE Guidance being the sum of Drinking 2 l/p/d, Cooking and Food 3 l/p/d, Toilet flushing 80 l/p/d, Bathing and Showering 100l/sec, 23% of washing needs 15 l/p/day, Total 200l/p/d).

Freshwater Farm Environment Plan means a plan that has been prepared in accordance with the requirements of Schedule 30BC by a person with the professional qualifications necessary to prepare such a plan which is implemented by a landowner or on behalf of a landowner.

Farm is as defined by Part 9 of the RMA. A farm where all or part of the farm is—

(a) arable land use; or

(b) horticultural land use; or

(c) pastoral land use; or

(d) other agricultural land use prescribed in regulations made under section 217M(1)(b); or

(e) any combination of the above consequential

And a farm can include an aggregation of parcels held in single or multiple ownership (whether or not held in common ownership) that constitute a single farming operating unit^{180.82}.

~~**Farming Enterprise**— as defined in the RMMP but to include Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments^{180.82}.~~

Farm Operator is as defined by Part 9 of the RMA. The person with ultimate responsibility for the operation of a farm consequential

Flushing Flows mean river flows that are small floods or freshes that have the ability to flush fine deposited sediment (sand and silt) from the river bed and are sometimes called surface flushing flows. The movement of this sediment also erodes algae from the larger gravels, cobbles and boulders (substrate) leaving a “clean” river bed^{180.27}

Forestry Management Plan means a harvest plan or management plan as provided for in the National Environmental Standards for Plantation Forestry; 2017.

Fre³ means the frequency of floods that are three times above the median flow for a river as determined by the Regional Council records.

Hapū (In Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments) means kinship group, section of a large kinship group and the primary political unit in traditional Maori society.

Heretaunga Plains Groundwater Model is a numerical model for the waters of the Heretaunga Plains and meets the requirements for artesian head and stochastic uncertainty analysis as provided for in Schedule 35

Horticultural land use is as defined by Part 9 of the RMA . The use of land to grow food or beverage crops for human consumption (other than arable crops), or flowers for commercial supply consequential

Indigenous vegetation for the purposes of rules regulating removal of vegetation means: means any area of naturally occurring vegetation where the cover of indigenous plants is the same as or greater than exotic plants but excludes any indigenous vegetation which grows beneath plantation forestry.

Infrastructure Leakage Index is a performance indicator of real (physical) water loss from a water supply network of water distribution developed by the International Water Association and included in the New Zealand BenchlossNZ manual and

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which outlines performance indicators for NZ.

*** PLACEHOLDER for an irrigation efficiency definition as per Section 15.6.17 of the Hearing Report.**

Kaitiakitanga; add “and in Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments can only be passed down through generations via whakapapa”

Ki uta ki tai – means The movement of water from mountains to sea, through the landscape and the numerous interactions it may have on its journey. Ki uta ki tai acknowledges the connections between the atmosphere, surface water, groundwater, land use, water quality, water quantity, and the coast. It also acknowledges the connections between people and communities, people and the land, and people and water.

Mahinga Kai insert “ and in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments mahinga kai generally refers to indigenous freshwater species that have traditionally been used as food, tools, or other resources. Mahinga kai provide food for the people of the rohe and these species give an indication of the overall health of the catchment. For this value, kai would be safe to harvest and eat and knowledge transfer is present (intergenerational harvest). In freshwater management units that are highly valued for providing mahinga kai, the desired species are plentiful enough for long- term harvest and the range of desired species is present across all life stages.

Māori means the aboriginal people of New Zealand that migrated from Hawaiki in successive waves of migration settling throughout the Pacific.

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

Matauranga Māori means cultural knowledge of the natural world.

Mauri Insert “and in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments Mauri is a spiritual value that expresses itself within the natural world in a particular manner. In the Māori world view, all-natural things have Mauri, both animate and inanimate. Within freshwater environments, the manifestation of healthy mauri is abundant and healthy water and aquatic resources, including the fish, insects, birds and plants that interact with the water.”

Nitrogen loss rate means the modelled annual average nitrogen loss rate for a farm property using the latest version of Overseer (or similar alternative nutrient loss budget model approved by the Hawke's Bay Regional Council)

Nitrogen loss target means the modelled annual average nitrogen loss rate using the latest version of Overseer (or similar alternative nutrient budget loss model approved by the Hawke's Bay Regional Council) for a farm property which; ^{180.9, 135.1, 180.10}

a) adopts all industry good management practice measures for managing nutrient losses and/or

b) adopts additional mitigation measures to meet applicable water quality targets or objectives for dissolved nutrients.

The Nitrogen loss rate and the nitrogen loss target may be the same for any farm property. The effects of some nutrient mitigation measures cannot be modelled within Overseer. This provision also reflects that some farm properties are already adopting good industry management practice – but that this may change over time ^{132.111, 120.111, 132.138, 132.111, 120.111, 132.138, 120.118, 123.146, 210.138, 135.61)}

Nutrient Budget means a calculation that compares plant nutrient demand and supply to assist with appropriate nutrient applications and nutrient management. The budget can be crop specific or at the property scale. ^{180.55, 56 and 69}

Papakāinga means a group of houses of three or more, developed on Maori land that has multiple-owners.

Pastoral land use is as defined by Part 9 of the RMA. *The use of land for the grazing of livestock.* ^{consequential}

Registered Drinking Water Supply (or Supplies) means a drinking water supply that is recorded in the drinking water register maintained by the Chief Executive of the Ministry of Health (the Director-General) under section 69J of the Health Act 1956 that provides no fewer than 25 people with drinking water for not less than 60 days in each calendar year

River - defined as in the RMA. This will be interpreted to align with the implementation for Tukituki PC and applies to all flowing permanent and intermittent rivers/creeks, lakes and wetlands. An intermittent river or creek is a waterway that periodically flows and has a defined river bed that is predominantly un-vegetated and comprised of silt, sand, gravel and similar.

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Source Protection Zone (SPZ) means an area surrounding the point of take for a registered drinking water supply that provides no fewer than 501 people with drinking water for not less than 60 days in each calendar year where plan provisions apply and includes any provisional Source Protection Zone and is defined by methods specified in Schedule 35 (information about the location of SPZs can be found on the Council's webpage).

Source Protection Extent is an area surrounding the point of take for a registered drinking water supply that provides no less than 25 and no more than 500 people with drinking water for not less than 60 days in each calendar year and includes any Provisional Source Protection Extent and is defined by methods specified in Schedule 35 (information about the location of these areas can be found on the Council's webpage).

Stream Depletion Calculator is a publically available tool that the Haawke's Bay Regional Council has developed to quantify the stream depleting effects of groundwater abstractions in the Heretaunga Plains. The calculator is based on the Heretaunga numerical groundwater model, but enables very rapid stream depletion assessments.

TANK Industry Programme or a TANK Catchment Collective is a group of people meeting the requirements of Schedule 30A and which has a Catchment Collective or Industry Programme that has been prepared in accordance with the requirements of Schedule 30B by a person with the professional qualifications necessary to prepare such a Programme

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

Consequential Amendments to Chapter 5 of the Regional Resource Management Plan

As a consequence of the new chapters 5.10 and 6.10, amendments have been made to the following parts of Chapter 5 of the operative plan:

Chapter 5.4 Surface Water Quality. The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.5 Surface Water Quantity. The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.6 Groundwater Quality; The Tūtaekurī, Ahuriri, Ngaruroro and Karamū River Catchments are excluded from this chapter.

Chapter 5.7 Groundwater Quantity

The amendments listed above are shown in **bold** text with new insertions **underlined** and with deletions shown as **~~bold strikethrough~~** over the pages that follow. (Note; Submissions can only be made in respect of the amended text).

Editor's note: Once Plan Change 9 is operative, it will be incorporated into the Regional Resource Management Plan. There will be consequential amendments made at that time to clarify some interim policies no longer apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū Catchments. Those interim policies were inserted into the RRMP by earlier versions of the NPSFM. Those earlier NPSFMs had directed amendments to be made without using the RMA's Schedule 1 process.

5.4 Surface Water Quality

Insert under heading

The provisions of Chapter 5.4 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

Table 8. Environmental Guidelines – Surface Water Quality Part II - Guidelines that Apply to Specific Catchments

Catchment Area	Faecal Coliforms (cfu/100 ml)	Suspended Solids (mg/l)
Aropaoanui River	200	50
Clive Rivers and tributaries	200	40
Esk River	200	50
Ikanui Stream	200	50
Kopuawhara Stream	200	50
Mangakuri Stream	200	50
Maraetotara River	200	50
Mohaka River	50	10
Ngaruroro River upstream of Fernhill Bridge	50	40
Ngaruroro River between Fernhill Bridge and Expressway Bridge	100	25
Ngaruroro River downstream of the Expressway Bridge	150	25
Opoutama Stream	200	50
Porangahau River	200	50
Puhokio Stream	200	50
Taharua Stream	50	10
Tutaekuri River upstream of Redclyffe Bridge	50	40
Tutaekuri River between Redclyffe Bridge and SH50	100	25
Tutaekuri River downstream of the Expressway Bridge	150	25
Waingonoro Stream	200	50
Waipatiki Stream	200	50
Waipuka Stream	200	50
Wairoa River and tributaries upstream of Frasertown	100	25
Wairoa River at and downstream of Frasertown	200	25

These guidelines apply after reasonable mixing and disregarding the effect of any natural perturbations that may affect the water body, as set out in Policy 72.

* The figures in Table 8 represent concentrations of contaminants in the water body that should not be exceeded after reasonable mixing.

Remove POL 72A from PPC9.

5.5 Surface Water Quantity

Insert under heading

The provisions of Chapter 5.5 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

POL 74 IMPLEMENTATION OF ENVIRONMENTAL GUIDELINES - SURFACE WATER QUANTITY

- (a) **Resource Allocation:** To define the allocatable volume as being the difference between the summer 7- day Q95 and the minimum flow.
- (b) To implement the environmental guidelines for surface water quantity predominantly in the process of making decisions on **resource consents** in accordance with section 104 (1)(b) of the RMA, through Table 9.

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

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

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

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

Table 9. Minimum Flow and Allocatable Volumes for Specified Rivers

River name	Minimum Flow Site Name	Minimum Flow (l/s)	Allocatable Volume (m ³ /week)	Map Reference
Awanui Stream	At The Flume	120	0	V21:357613
Awanui Stream	At Paki Paki Culvert	35	0	V21:351608
Esk River	At Shingle Works	1,400	355,018	V20:432945
Esk River	At SH2	1,000		V20:438939
Irongate Stream	At Clarks Weir	100	0	V21:367666
Karamū River	At Floodgates	1,100	18,023	V21:427708
Karewarewa River	At Turamoe Road	75	-	V21:341622
Louisa Stream	At Te Aute Road	30	0	V21:410625
Mangateretere Stream	At Napier Road	100	0	V21:438659
Maraekakaho River	At Taits Road	100	5,443	V21:170668
Maratotara River	At Te Awanga Bridge	220	30,971	W21:520661
Ngaruroro River	At Fernhill Bridge	2,400	956,189	V21:330729
Nuhaka River	At Valley Road	80	41,731	X19:225329
Ongaru Drain	Wenley Road	5	0	V21:234653
Pouhokio Stream	At Allens Bridge	80	-	V22:498441
Poukawa Inflow	Site No. 1 (d/s dam)	10	0	V22:282504
Poukawa Inflow	Site No. 1a (u/s dam)	10	0	V22:285502
Poukawa Inflow	Site No. 6	3	0	V22:266478
Poukawa Stream	At Douglas Road	20	0	V22:298533
Raupare Stream	At Ormond Road	300	83,844	V21:398713
Te Waikaha Stream	At Mutiny Road	25	-	V22:361572
Trib. of Kauhauroa Stream	(Taylors)	5	0	X19:970397
Tutaekuri River	At Puketapu	2,000	928,972	V21:357812
Tutaekuri Waimate	At Goods Bridge	1,200	367,114	V21:384751
Waimaunu Stream	At Duncans	10	15,304	X19:229300

Remove POL 74A from PPC9.

5.6 Groundwater Quality

Insert after Heading

The provisions of Chapter 5.6 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

OBJECTIVES

~~OBJ 42 — No degradation of existing groundwater quality in aquifers in the Heretaunga Plains aquifer system.~~

POLICIES

POL 75 ENVIRONMENTAL GUIDELINES - GROUNDWATER QUALITY

- Other than in the productive aquifer systems in the Tukituki River catchment **and the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments**, to manage the effects of activities affecting the quality of groundwater in accordance with the environmental guidelines set out in Table 10.

Table 10. Environmental Guidelines – Groundwater Quality

CONFINED, PRODUCTIVE AQUIFERS IN THE HERETAUNGA PLAINS AQUIFER SYSTEM (as shown in Schedule IV)	
1. No degradation	There should be no degradation of existing water quality.
OTHER PRODUCTIVE AQUIFERS	
1. Human consumption	The quality of groundwater should meet the “Drinking Water Quality Standards for New Zealand” (Ministry of Health, 1995) without treatment, or after treatment where this is necessary because of the natural water quality.
2. Irrigation	The quality of groundwater should meet the guidelines for irrigation water contained in the “Australian Water Quality Guidelines for Fresh and Marine Waters” (Australian and New Zealand Environment and Conservation Council, 1998) without treatment, or after filtration where this is necessary because of the natural water quality.

Remove RRMP POL 76A from PPC9.

Recommended changes to Proposed Plan Change 9

5.7 Groundwater Quantity

Insert after the heading

The provisions of Chapter 5.7 do not apply within the Tūtaekurī, Ahuriri, Ngaruroro and Karamū River catchments

Remove RRMP POL 78A from PPC9.

Schedule 26: Freshwater Quality Objectives

Schedules 26 and 27 are re-presented to align with the NOF framework in the NPS-FM.

210.4, 120.17, 120.104, 123.127, 126.32, 127.14, 120.146, 120.150, 123.123, 210.113, 194.102, 120.147, 123.22, 210.118, 123.134, 120.161, 123.125, 120.149, 132.108, 132.172, 210.112, 210.113, 210.117, 132.156, 132.108, 132.66, 132.4, 132.19, 123.126, 194.101, 210.114, 58.36, 120.152, 210.115

Replace Schedules 26 and 27 with the following:

Introduction to Schedule 26 Freshwater Quality Objectives

For water quality management, the TANK catchments have been divided into 5 separate areas:

1. Tūtaekurī Catchment
2. Ahuriri Catchment
3. Ngaruroro Catchment
4. Karamū Catchment
5. Ahuriri Estuary / Te Whanganui-a-Orotū and Waitangi Estuary

Maps

Refer to Schedule 26 Index Map and Schedule 26.1 – 26.5 Planning Maps.

Baseline data

Baseline data in Schedule has been obtained from the reports listed below unless otherwise specified in the Schedules:

Haidekker, S., Uytendaal, A., Hicks, A., Wade, Wade, H., Lyon, Madarasz-Smith, A.L., 2016. Ngaruroro, Tutaekuri, Karamu River and Ahuriri Estuary Catchments: State and Trends of River Water Quality and Ecology (No. 4787). Hawke's Bay Regional Council, Napier.

Haidekker, S. (2021) Unpublished data.

Madarasz-Smith, A., Shanahan, B., 2020. State of the Hawke's Bay Coastal Marine Environment: 2013 to 2018 (No. 5425). Hawke's Bay Regional Council, Napier.

Madarasz-Smith, A.L., 2018. Proposed trigger levels for TANK estuaries Waitangi and Ahuriri Estuaries (No. 5027). Hawke's Bay Regional Council, Napier.

Madarasz-Smith, A.L., Shanahan, B., Ellmers, J., 2019. Recreational Water Quality in Hawke's Bay State of the Environment: 2013 - 2018 (No. 5403). Hawkes Bay Regional Council, Napier.

Schedules 26.1 – 26.5

Insert Schedules as follows.

SCHEDULE 26.1: TŪTAEKURĪ CATCHMENT

Refer to Planning Map Schedule 26.1

Vision

<to be drafted through Kotahi Review process>

Outcomes

<This sits in the body of the plan. Refer to relevant TANK Objectives [12 and 14](#) 197.2, 197.3, 180.10 135.1

TABLE 26.1.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR					
DIN (mg/L)	Median 5 years All flows	Headwaters (Upper Tūtaekurī)	Default	No/Insufficient data	< 0.05	< 0.05	<p>Blue: (≤ 0.05) Very low risk of algal growth.</p> <p>Green: (≤ 0.05 and < 0.15) Low risk of algal growth.</p> <p>Yellow: (≤ 0.15 and < 0.3) Moderate risk of algal growth.</p> <p>Red: (> 0.3) High risk of algal growth.</p>	Algal growth	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water 					
			Lawrence Hut	0.016	Maintain	Maintain								
		Main stem (Lower Tūtaekurī)	Default	No/Insufficient data	<0.15	<0.15								
			u/s Mangaone River	0.182	<0.15	<0.15								
			Brookfields Bridge / Puketapu	0.172	<0.15	<0.15								
		Hill country tributaries	Default	No/Insufficient data	< 0.3	< 0.3								
			Mangatutu Stream	0.45	< 0.3	< 0.3								
			Mangaone River (Rissington)	0.326	< 0.3	< 0.3								
		Ammonia (mg NH ₄ -N/L) NOF Table 5	1. Annual median 2. Annual max Unionised ammonia based on pH at 20°C All flows	Headwaters	Default	No/Insufficient data				Median ≤ 0.03 Max ≤ 0.05	Median ≤ 0.03 Max ≤ 0.05	<p>A band (blue): (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested.</p> <p>B band (green): (Median > 0.03 and ≤ 0.24; Max >0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species.</p> <p>C band (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive</p>	Toxicity	<ul style="list-style-type: none"> • Waimaori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
					Lawrence Hut	Med 0.002 A Max 0.006 A				Maintain	Maintain			
Main stem	Default			No/Insufficient data	Median ≤ 0.03 A Max ≤ 0.05 A	Median ≤ 0.03 A Max ≤ 0.05 A								
	u/s Mangaone River			Med 0.007 A Max 0.017 A	Maintain	Maintain								
	Brookfields Bridge /			Med 0.012										

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR	
			Puketapu	A Max 0.024 A			species (Reduced survival of most sensitive species). D band (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.			
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A				
					Max ≤ 0.05 A	Max ≤ 0.05 A				
		Mangatutu Stream		No/Insufficient data	Maintain	Maintain				
					Med 0.005 A	Max 0.043 A				
		Mangaone River (Rissington)		No/Insufficient data	Med 0.006 A	Max 0.04 A				
Nitrate (mg NO ₃ -N/L) NOF Table 6	1. Annual median 2. Annual 95 th percentile Hazen method All flows	Headwaters	Default	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A	A band (blue): (Median ≤ 1.0; 95 th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. B band (green): (Median > 1.0 and ≤ 2.4; 95 th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. C band : (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95 th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. D band (purple, below national bottom line) (Median > 6.9; 95 th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	<ul style="list-style-type: none"> Waimaori Mauri Indigenous taonga/tohu species habitat and spawning, ahu moana Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use 	
						95 th percentile ≤ 1.5 A				95 th percentile ≤ 1.5 A
				Lawrence Hut	Med 0.008 A	Maintain				Maintain
			Main stem	Default	No/Insufficient data	Median ≤ 1.0 A				Median ≤ 1.0 A
						95 th percentile ≤ 1.5 A				95 th percentile ≤ 1.5 A
			u/s Mangaone River		Med 0.18 A	Maintain				Maintain
				Brookfields Bridge / Puketapu	Med 0.21 A	Maintain				Maintain
			Hill country tributaries	Default	No/Insufficient data	Median ≤ 1.0 A				Median ≤ 1.0 A
						95 th percentile ≤ 1.5 A				95 th percentile ≤ 1.5 A
				Mangatutu Stream	Med 0.4 A	Maintain				Maintain
	Mangaone River (Rissington)	Med 0.34 A	Maintain	Maintain						
					95 th percentile 0.767 A					
DRP (mg/L)	1. Median 2. 95 th percentile	Headwaters	Default	No/Insufficient data	Median ≤ 0.006 A	Median ≤ 0.006 A	A band (blue): (Median ≤ 0.006;	Algal growth	<ul style="list-style-type: none"> Uu Waimaori 	

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
NOF Table 20	All flows	Main stem	Lawrence Hut		95 th percentile ≤ 0.21 A	95 th percentile ≤ 0.21 A	<p>95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected.</p> <p>B band (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates.</p> <p>C band (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay.</p> <p>D band (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.</p>		<ul style="list-style-type: none"> • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses
				Med 0.004 A	Maintain	Maintain			
			95 th percentile0.006 A	Maintain	Maintain				
			Default	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			
					95 th percentile ≤ 0.03 B	95 th percentile ≤ 0.03 B			
			u/s Mangaone River	Med 0.014 C	Med ≤ 0.01 B	Med ≤ 0.01 B			
		95 th percentile0.02 B		Maintain	Maintain				
		Brookfields Bridge / Puketapu	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B				
			95 th percentile0.031 C	95 th percentile ≤ 0.03 B	95 th percentile ≤ 0.03 B				
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.01 B	Median ≤ 0.01 B			
					95 th percentile ≤ 0.03 B	95 th percentile ≤ 0.03 B			
			Mangatutu Stream	Med 0.02 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
				95 th percentile0.023 B	Maintain	Maintain			
			Mangaone River (Rissington)	Med 0.026 D	Med ≤ 0.018 C	Med ≤ 0.01 B			
95 th percentile0.036 C	95 th percentile ≤ 0.03 B			95 th percentile ≤ 0.03 B					
Suspended fine sediment Visual clarity (m)	NOF Table 8	Headwaters	Default	No/Insufficient data	≥ 5	≥ 5	<p>Trout fishery:</p> <p>Bright blue ≥ 5 meets outstanding trout fishery values.</p> <p>Light green ≥ 3.75 and < 5 meets significant trout fishery.</p> <p>Russet <3.75 does not meet significant trout fishery values.</p> <p>NOF Attribute <Kotahi Review></p> <p>A band (Class 1 ≥ 1.78; Class 2 ≥ 0.93)</p>	Trout fishery - outstanding	<ul style="list-style-type: none"> • Recreation • Mauri • Natural character • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Amenity natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
				<Kotahi Review>	<Kotahi Review>				
			Lawrence Hut (Class 1)	7.6	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	<Kotahi Review>			
				6.9 A	<Kotahi Review>	<Kotahi Review>			

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			u/s Mangaone River (Class 1)	3.4	Improving trend	≥ 3.75	Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. B band (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. C band (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. D band (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.		
				2.54 A	<Kotahi Review>	<Kotahi Review>			
			Brookfields Bridge / Puketapu	3.35	Improving trend	≥ 3.75			
				2 A	<Kotahi Review>	<Kotahi Review>			
		Hill country tributaries	Default	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	<Kotahi Review>			
			Mangatutu Stream (Class 1)	1.85	Improving trend	≥ 3.75			
				1.5 C	≥ 1.78 A	≥ 1.78 A			
			Mangaone River (Rissington) (Class 2)	2.3	Improving trend	≥ 3.75			
				2.15 A	<Kotahi Review>	<Kotahi Review>			
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years	Headwaters		No/Insufficient data	<20%	<20%	Light green < 20% protects stream biodiversity and fish (native and trout) habitat. Russet: ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.	Biodiversity	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Natural character • Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori land, marae/hapū, indigenous biodiversity
		Main stem		No/Insufficient data	<20%	<20%			
	95 th percentile	Hill country tributaries		No/Insufficient data	<20%	<20%			
Deposited fine sediment (%)	% fine sediment cover Median Monthly samples Minimum 5 years				<Kotahi Review>				

TABLE 26.1.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI)					<Kotahi Review>				
NOF Table 13									
Macroinvertebrates	1. MCI Macroinvertebrate Community Index Average Below median flow	Headwaters	Default	No/Insufficient data	MCI ≥ 130	MCI ≥ 130	A band (blue): (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine	Ecosystem health	<ul style="list-style-type: none"> • Waimaori • Mauri • Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning • Natural character • Indigenous biodiversity
MCI					QMCI ≥ 6.5	QMCI ≥ 6.5			
NOF Table 14					ASPM ≥ 0.6	ASPM ≥ 0.6			

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
ASPM NOF Table 15	2. QMCI Quantitative Macroinvertebrate Community Index 3. ASPM Macroinvertebrate average score per metric	Lawrence Hut		MCI 129 B	MCI ≥ 130 A	MCI ≥ 130 A	<p>conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions.</p> <p>B band (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM < 0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity.</p> <p>C band (orange): (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM < 0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity.</p> <p>D band (red): (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment. Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.</p>		<ul style="list-style-type: none"> Trout
				QMCI 6.7 A	Maintain	Maintain			
				ASPM 0.64 A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
			u/s Mangaone River	MCI 104 C	Improving trend	MCI ≥ 110 B			
				QMCI 4.9 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.39 C	Improving trend	ASPM ≥ 0.4 B			
			Brookfields Bridge / Puketapu	MCI 93 C	Improving trend	MCI ≥ 110 B			
				QMCI 4.8 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.30 C	Improving trend	ASPM ≥ 0.4 B			
		Hil country tributaries	Default	No/Insufficient data	MCI ≥ 110	MCI ≥ 110			
					QMCI ≥ 5.5	QMCI ≥ 5.5			
					ASPM ≥ 0.4	ASPM ≥ 0.4			
			Mangatutu River	MCI 120 B	Maintain	Maintain			
				QMCI 5.2 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.42 B	Maintain	Maintain			
			Mangaone River (Rissington)	MCI 116 B	Maintain	Maintain			
				QMCI 6 B	Maintain	Maintain			
				ASPM 0.55 B	Maintain	Maintain			

TABLE 26.1.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Periphyton (Trophic state) (mg Chl-a/m ²) NOF Table 2	Max 8% exceedance over 3 years monthly observations	Main stem	Puketapu	B	<Kotahi Review>	Maintain	<p>A band: (≤ 50 less than 8%) Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime.</p> <p>B band: (Exceeds >50 and ≤ 120 less than 8%) Occasional blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime.</p> <p>C band: (Exceeds >120 and ≤ 200 less than 8%). Periodic short -duration nuisance blooms reflecting moderate enrichment and/or moderate alteration of the natural flow regime or habitat</p> <p>D band: (exceeds national bottom line) (> 200 less than 8%) Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat</p>	Ecosystem health	
Periphyton cover (median of annual max %PeriWCC)	Monthly observations All year 3 years monthly observations	Headwaters	Default	No/Insufficient data	≤ 20	≤ 20	<p>Blue: (≤ 20) Ecological condition excellent and maintains recreation/aesthetics values.</p> <p>Green: (> 20 and ≤ 30) Ecological condition good and maintains recreation/aesthetics values.</p> <p>Yellow: (> 30 and ≤ 40) Ecological condition good and doesn't meet recreation/aesthetics values.</p> <p>Orange: (> 40 and ≤ 55) Ecological condition fair and doesn't meet recreation/aesthetics values.</p> <p>Red: (> 55) Ecological condition poor and doesn't meet recreation/aesthetics values.</p>	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Natural character • Indigenous biodiversity • Abstractive uses including stock drinking
			Lawrence Hut	12 (2012-15)	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	≤ 30	≤ 30			
			u/s Mangaone River	28 (2012-15)	Maintain	Maintain			
			Brookfields Bridge / Puketapu	34 (2012-15)	Improving trend	≤ 30			
		Upland tributaries	Default	No/Insufficient data	≤ 30	≤ 30			
			Mangatutu Stream	14 (2012-15)	Maintain	Maintain			
			Mangaone River (Rissington)	1.7 (2012-15)	Maintain	Maintain			
Dissolved Oxygen (mg/L)	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels			
Dissolved Oxygen (mg/L or %)	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Headwaters		No/Insufficient data	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	<p>A band (blue): (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites.</p> <p>B band (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species.</p> <p>C band (orange):</p>	Ecosystem health	<ul style="list-style-type: none"> • Waimaori • Natural character • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Indigenous biodiversity • Trout
		Main stem		No/Insufficient data					
		Hill country tributaries		No/Insufficient data					

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							(7-day mean minimum ≥ 5.0 and < 7.0 ; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. D band (red, (below national bottom line) (7-day mean minimum < 5 ; 1-day min < 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.		
BOD (ScBOD ₅)	Below median flow		Consent related		<2 mg/L	<2 mg/L	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	
Ecosystem Metabolism (gO ₂ m ⁻² d ⁻¹) NOF Table 21	7-day min (Dec-Mar) Young <i>et al.</i> method				<Kotahi Review>				
Temperature (°C) 5-day CRI	Cox-Rutherford-Index Continuous measurement Hottest 5 consecutive days All flows	Headwaters		No/Insufficient data	<Kotahi Review>	≤ 1° C increment from reference state A	A band (blue): (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. B band (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. C band (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. D band (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.		<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga Whakapapa, taonga/tohu species, ahumoana, ahuwenua, mahinga kai Natural character Indigenous biodiversity Trout
		Main stem		No/Insufficient data	<Kotahi Review>	≤ 2° C increment from reference state B			
		Hill country tributaries		No/Insufficient data	<Kotahi Review>	≤ 2° C increment from reference state B			
		Lowland tributaries		No/Insufficient data	<Kotahi Review>	≤ 2° C increment from reference state B			
pH	At all times, 95 th percentile				<Kotahi Review>				
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected.	Ecosystem health	

TABLE 26.1.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Cyanobacteria¹ (benthic cover %)	Monthly observations, All year	All hard bottomed streams	As required	No/Insufficient data	< 20% ¹	< 20% ¹	Light Green < 20% benthic cover Orange ≥ 20% and <50% benthic cover Red >50% benthic cover	Recreation	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū, • Natural character • Abstractive uses including stock drinking
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Overall band determined over 4 numeric attribute states – details see NOF Table 9	Headwaters	Default	No/Insufficient data	A	A	A band (Blue) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. B band (Green) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. C band (Yellow) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. D band (Orange) 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. E band (Red) For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	<ul style="list-style-type: none"> • Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Lawrence Hut	A	Maintain	Maintain			
		Main stem	Default	No/Insufficient data	B	B			
			u/s Mangaone River	B	Maintain	Maintain			
			Brookfields Bridge / Puketapu	B	Maintain	Maintain			
		Hill country tributaries	Default	No/Insufficient data	B	B			
			Mangatutu Stream	D	B	B			
Mangaone River (Rissington)	D		B	B					
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 22	95 th percentile of E.coli per 100 mL	Lowland	Tūtaekuri River at Guppy Road	308 Fair	<Kotahi Review>		Excellent ≤ 130 Estimated risk of <i>Campylobacter</i> infection has a <0.1% occurrence, 95% of the time. Good >130 and ≤ 260 Estimated risk of <i>Campylobacter</i> infection has a 0.1 – 10% occurrence, 95% of the time. Fair >260 and ≤ 540 Estimated risk of <i>Campylobacter</i> infection has a 1 - 5% occurrence, 95% of the time. Poor >540 (below national bottom line) Estimated risk of <i>Campylobacter</i> infection has a >5% occurrence, 95% of the time.	Uu Recreation Human health	<ul style="list-style-type: none"> • Waimaori • Mauri • Kaitiakitanga, he aha haere • Ahuwhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
<p>Note 1 The target attribute state for cyanobacteria is applicable only in relation to Policy 16 and any exceedance triggers an alert level response by Council ((from the MfE Alert-level Framework: NZ Guidelines for cyanobacteria in recreational freshwaters.)</p>									

TABLE 26.1.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME- LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO ₃ /l)	95 th percentile 5 years	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes: The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality.									

TABLE 26.1.4: Threatened Species

<Insert through Kotahi process>

TABLE 26.1.5: Mahinga Kai

<Insert through Kotahi process>

TABLE 26.1.6: Mātauranga Maori

<Insert through Kotahi process>

TABLE 26.1.7: Wetlands and Lakes

<Insert through Kotahi process>

Appendix 2B – Recommended changes to Proposed Plan Change 9

SCHEDULE 26.2: AHURIRI CATCHMENT

Refer to Planning Map Schedule 26.2

Vision

<to be drafted through Kotahi Review process>

Outcomes

<This sits in the body of the plan. Refer to relevant TANK Objectives 10 and 14^{197.2, 197.3, 180.10 135.1}>

TABLE 26.2.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Lowland	Default	No/Insufficient data	≤ 0.444	≤ 0.444	Light Green: (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning. Orange: (> 0.444) Above ANZECC default guideline value, investigation/ management recommended.	Estuary ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Recreation • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production, industrial and commercial use
			Taipo Stream	0.356	Maintain	Maintain			
			Wharerangi Stream	No/Insufficient data	≤ 0.444	≤ 0.444			
Ammonia (mg NH ₄ -N/L) NOF Table 5	1. Annual median 2. Annual max Unionised ammonia at a pH of 8 and temperature of 20°C All flows	Lowland	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A	<p>A band (blue): (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested.</p> <p>B band (green): (Median > 0.03 and ≤ 0.24; Max > 0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species.</p> <p>C band: (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species).</p> <p>D band (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.</p>	Toxicity	<ul style="list-style-type: none"> • Waimaori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
					Taipo Stream	Median 0.016 A			
			Max 0.119 B	Max ≤ 0.05 A		Max ≤ 0.05 A			
			Wharerangi Stream	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Nitrate (mg NO ₃ -N/L) NOF Table 6	1. Annual median 2. Annual 95 th percentile Hazen method All flows	Lowland	Default			
Taipo Stream	95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A							
	Median 0.131 A	Maintain				Maintain			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				95 th percentile 0.66 A	Maintain	Maintain	95% species protection; some growth effects on up to 5% of species. C band: (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95 th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. D band (purple, below national bottom line) (Median > 6.9; 95 th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).		
			Wharerangi Stream	No/Insufficient data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	1. Median 2. 95 th percentile All flows	Lowland	Default	No/Insufficient data	Maintain or improving trend	Median ≤ 0.010 B	A band (blue): (Median ≤ 0.006; 95 th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected.	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
			Taipo Stream	Median 0.25 D	Improving trend	Median ≤ 0.010 B	B band (green): (Median >0.006 and ≤ 0.010; 95 th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates.		
				95 th percentile 0.59		95 th percentile ≤ 0.030 B	C band (orange): (Median >0.01 and ≤ 0.018; 95 th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay.		
			Wharerangi Stream	No/Insufficient data	Improving trend	Median ≤ 0.010 B	D band (red): (Median > 0.018; 95 th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.		
						95 th percentile ≤ 0.030 B			
Suspended fine sediment Visual clarity (m) NOF Table 8	<u>Recreation/aesthetics</u> Visual clarity Median Monthly samples Minimum 5 years	Lowland	Default	No/Insufficient data	> 1.6	> 1.6	<u>Recreation /Aesthetics</u> Very Light Green: > 1.6 meets recreation/aesthetics values. Light Russet ≤ 1.6 doesn't meet recreation/aesthetics values.	Recreation/ Aesthetics	<ul style="list-style-type: none"> • Recreation • Mauri • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Amenity natural character • Abstractive uses including for domestic, farm and community water
					<Kotahi Review>	<Kotahi Review>			
			Taipo Stream (class 2)	0.40	Improving trend	> 1.6	<u>NOF Attribute</u> <Kotahi Review>		

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
	NOF: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)		Wharerangi Stream (class 2)	0.40 D	<Kotahi Review>	<Kotahi Review>	A band (Class 1 ≥ 1.78 ; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions. B band (Class 1: < 1.78 and ≥ 1.55 ; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced. C band (Class 1: < 1.55 and ≥ 1.34 , Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost. D band (below national bottom line). (Class 1: < 1.34 ; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.		supply, primary production and food production, industrial and commercial use
Deposited fine sediment (%) NOF Table 16	Median % fine sediment cover Monthly samples Minimum 5 years				<Kotahi review>				

TABLE 26.2.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13				No/Insufficient data	<Kotahi review>				
Macroinvertebrates MCI QMCI NOF Table 14 ASPM NOF Table 15	1. MCI (sb-MCI where relevant) Macroinvertebrate Community Index Average Below median flow 2. QMCI (sb-QMCI where relevant) Quantitative Macroinvertebrate Community Index 3. ASPM Macroinvertebrate average score per metric	Lowland	Default Taipo Stream	No/Insufficient data MCI 57.2 D	Maintain or improve Improving trend	MCI ≥ 90 C 110 B QMCI ≥ 4.5 C 5.5 B ASPM ≥ 0.3 C 0.4 B MCI ≥ 90 C 110 B	A band (blue): (MCI ≥ 130 ; QMCI ≥ 6.5 ; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions. B band (green): (MCI ≥ 110 and < 130 ; QMCI ≥ 5.5 and < 6.5 ; ASPM < 0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning Natural character Indigenous biodiversity

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				QMCI 1.8 D	Improving trend	QMCI ≥ 4.5 C 5.5 B	<p>composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity.</p> <p>C band (orange): (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM < 0.4 and ≥ 0.3)</p> <p>Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity.</p> <p>D band (red, (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3)</p> <p>Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment. Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.</p>		
				ASPM 0.1 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Wharerangi Stream	No/Insufficient data	Maintain or improve	MCI ≥ 90 C 110 B			
						QMCI ≥ 4.5 C 5.5 B ASPM ≥ 0.3 C 0.4 B			
Macrophytes (max % CAV)	Monthly All year observations	Lowland	Default	No/Insufficient data	≤ 50 %	≤ 50 %	Light Green ≤ 50 % maintains ecological condition / flow conveyance / recreation values.	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Taipo Stream	No/Insufficient data	≤ 50 %	≤ 50 %	Russet > 50% doesn't meet ecological condition / flow conveyance / recreation values.		
			Wharerangi Stream	No/Insufficient data	≤ 50 %	≤ 50 %			

TABLE 26.2.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Dissolved Oxygen (mg/L or %)	Continuous data	Lowland	Default	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B	<p>A band (blue): (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5)</p> <p>No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites.</p> <p>B band (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5)</p> <p>Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen.</p>	Ecosystem health	<ul style="list-style-type: none"> • Waimaori • Mauri • Kaitiakitanga, whakapapa, indigenous taonga/tohu species • Natural character • Indigenous biodiversity
NOF Table 17	7-day mean minimum 1-day minimum Summer period (Nov-April)		Taipo Stream	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Wharerangi Stream	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B	Risk of reduced abundance of sensitive fish and macroinvertebrate species. C band (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost. D band (red, below national bottom line) (7-day mean minimum < 5; 1-day min < 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.		
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels	No increased risk from point source.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Natural character Indigenous biodiversity
BOD (ScBOD ₅)	Below median flow		Consent related		<2 mg/L	<2 mg/L	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	
Ecosystem Metabolism (gO ₂ m ⁻² d ⁻¹) NOF Table 21	7-day min (Dec-Mar) Young et al method	Lowland			<Kotahi review>	<Kotahi review>			
Temperature (°C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Lowland		No/Insufficient data	<Kotahi review>	≤ 2° C increment from reference state B	A band (blue): (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. B band (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. C band (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. D band (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwheua mahinga kai Indigenous biodiversity Natural character
pH	At all times, 95 th percentile				<Kotahi review>				
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected.	Ecosystem health	

TABLE 26.2.2: Human Contact

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
<i>Escherichia coli (E.coli)</i> (cfu/100 mL) NOF Table 9	All year All flows Refer to NOF Table 9 for a description of how to measure the 4 metrics for this attribute	Lowland	Default	No/Insufficient data	B	B	A band (Blue) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. B band (Green) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. C band (Yellow) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. D band (Orange) 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. E band (Red) For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health Uu- Recreation- Human health-	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, he aha haere, ahu moana, ahuhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections, Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Taipo Stream	E	B	B			
			Wharerangi Stream	No/Insufficient data	B	B			

TABLE 26.2.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO ₃ /l)	95 th percentile 5 years	Groundwater – all areas	<Kotahi review>	<Kotahi review>	<!	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes:									
<ul style="list-style-type: none"> The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality. 									

TABLE 26.2.3: Threatened Species

<Insert through Kotahi process>

TABLE 26.2.4: Mahinga Kai

<Insert through Kotahi process>

TABLE 26.2.5: Matauranga maori

<Insert through Kotahi process>

TABLE 26.2.6: Wetlands and Lakes

<Insert through Kotahi process>

Appendix 2B – Recommended changes to Proposed Plan Change 9

SCHEDULE 26.3: NGARURORO CATCHMENT

Refer to Planning Map Schedule 26.3

Vision

<to be drafted through Kotahi Review process>

Outcomes

<This sits in the body of the Plan. Refer to ~~relevant~~ TANK Objectives [11 and 14](#), [197.2](#), [197.3](#), [180.10](#) [135.1](#)>

TABLE 26.3.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR		
DIN (mg/L)	Median 5 years All flows	Headwaters (Upper Ngaruroro)	Default	No/Insufficient data	< 0.05	< 0.05	Blue: (≤ 0.05) Very low risk of algal growth. Green: (≤ 0.05 and < 0.15) Low risk of algal growth. Yellow: (≤ 0.15 and < 0.3) Moderate risk of algal growth. Red: (> 0.3) High risk of algal growth.	Algal growth	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses • Drinking water 		
			Kuripapango	0.01	Maintain	Maintain					
			Whanawhana	0.027	Maintain	Maintain					
		Main stem (Lower Ngaruroro)	Default	No/Insufficient data	< 0.15	< 0.15					
			d/s HB Dairies	0.086	Maintain	Maintain					
			Fernhill	0.106	Maintain	Maintain					
			Chesterhope	0.08	Maintain	Maintain					
		Hill country tributaries	Default	No/Insufficient data	< 0.3	< 0.3					
			Ohara Stream	No/Insufficient data	< 0.3	< 0.3					
			Poporangi Stream	0.548	< 0.3	< 0.3					
			Maraekakaho Stream	0.231	Maintain	Maintain					
		Lowland tributaries	Default	No/Insufficient data	≤ 0.444	≤ 0.444					
			Waitio Stream	0.219	Maintain	Maintain					
			Ohiwia Stream	0.468	≤ 0.444	≤ 0.444					
			Tutaekuri-Waimate Stream	0.243	Maintain	Maintain					
		Ammonia (mg NH ₄ -N/L)	1. Annual median 2. Annual max	Headwaters	Default	No/Insufficient data				Median ≤ 0.03 A	Median ≤ 0.03 A
NOF Table 5	Unionised ammonia based on pH at 20°C All flows				Kuripapango	Median 0.0025 A	Maintain	Maintain			
	Max 0.005 A										

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR		
			Whanawhana	Median 0.002 A			<p>95% species protection; starts impacting occasionally on the 5% most sensitive species.</p> <p>C band: (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species).</p> <p>D band: (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.</p>				
				Max 0.01 A							
		Main stem	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A					
					Max ≤ 0.05 A	Max ≤ 0.05 A					
			d/s HB Dairies	Median 0.002 A	Maintain	Maintain					
				Max 0.17 A							
			Fernhill	0.003 A							
				Max 0.036 A							
			Chesterhope	Median 0.004 A							
				Max 0.008 A							
		Hill country tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A					
					Max ≤ 0.05 A	Max ≤ 0.05 A					
			Ohara Stream	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A					
					Max ≤ 0.05 A	Max ≤ 0.05 A					
			Poporangi Stream (Big Hill Rd)	Median 0.0025 A	Maintain	Maintain					
				Max 0.01 A							
			Maraekakaho Stream	Median 0.003 A							
				Max 0.017 A							
		Lowland tributaries	Default	No/Insufficient data	Median ≤ 0.03 A	Median ≤ 0.03 A					
					Max ≤ 0.05 A	Max ≤ 0.05 A					
			Waitio Stream	Median 0.002 A	Maintain	Maintain					
				Max 0.017 A							
			Ohiwia Stream	Median 0.006 A							
				Max 0.034 A							
			Tutaekuri-Waimate	Median 0.008							

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR	
			Stream	A Max 0.028 A						
Nitrate (mg NO ₃ -N/L) NOF Table 6	1. Annual median 2. Annual 95 th percentile Hazen method All flows	Headwaters	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A	A band (blue): (Median ≤ 1.0; 95 th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. B band (green): (Median > 1.0 and ≤ 2.4; 95 th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. C band (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95 th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. D band (purple, below national bottom line) (Median > 6.9; 95 th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	<ul style="list-style-type: none"> Waimaori Mauri Indigenous taonga/tohu species habitat and spawning, ahu moana Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use 	
				95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A					
			Kuripapango	Median 0.0075 A	Maintain	Maintain				
				95 th percentile 0.029 A						
				Whanawhana						Med 0.017 A
										95 th percentile 0.106 A
			Main stem	Default	No/Insufficient data	Med ≤ 1 A				Med ≤ 1 A
					95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A				
		d/s HB Dairies		Med 0.072 A	Maintain	Maintain				
				95 th percentile 0.26 A						
		Fernhill		Med 0.094 A	Maintain	Maintain				
				95 th percentile 0.35 A						
		Chesterhope		Med 0.093 A	Maintain	Maintain				
				95 th percentile 0.292 A						
		Hill country tributaries	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A				
				95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A					
			Ohara Stream	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A				
				95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A					
			Poporangi Stream (Big Hill Rd Bridge)	Med 0.585 A	Maintain	Maintain				
				95 th percentile 0.857 A						
Maraekakaho Stream	Med 0.335 A	Maintain	Maintain							
	95 th percentile 1.431 A									
Lowland tributaries	Default	No/Insufficient data	Med ≤ 1 A	Med ≤ 1 A						
		95 th percentile	95 th percentile							

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET TARGET STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR	
					≤ 1.5 A	≤ 1.5 A				
			Waitio Stream	Med 0.23 A 95 th percentile 0.54 A	Maintain	Maintain				
			Ohiwia Stream	Med 0.66 A 95 th percentile 0.92 A						
			Tutaekuri-Waimate Stream	Med 0.25 A 95 th percentile 0.52 A						
DRP (mg/L) NOF Table 20	1. Median 2. 95 th percentile All flows	Headwaters	Default	No/Insufficient data	Med ≤ 0.006 A 95 th percentile ≤ 0.021 A	Med ≤ 0.006 A 95 th percentile ≤ 0.021 A	<p>A band (blue): (Median ≤ 0.006; 95th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected.</p> <p>B band (green): (Median >0.006 and ≤ 0.010; 95th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates.</p> <p>C band (orange): (Median >0.01 and ≤ 0.018; 95th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay.</p> <p>D band (red): (Median > 0.018; 95th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.</p>	Algal growth	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species Estuary ecosystem health • Recreation • Aquifer recharge • Natural character • Abstractive uses 	
				Kuripapango	Med 0.002 A 95 th percentile 0.003 A	Maintain				Med ≤ 0.002 A 95 th percentile ≤ 0.003 A
			Whanawhana		Med 0.002 A 95 th percentile 0.004 A					Med ≤ 0.002 A 95 th percentile ≤ 0.004 A
				Main stem	Default	No/Insufficient data				Med ≤ 0.01 B 95 th percentile ≤ 0.03 B
			d/s HB Dairies			Med 0.005 A 95 th percentile 0.009 A				Maintain
					Fernhill	Med 0.008 B 95 th percentile 0.020 A				
			Chesterhope			Med 0.007 B 95 th percentile 0.014 A				Maintain
					Hill country tributaries	Default				

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Ohara Stream	No/Insufficient data	Maintain or improve	Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
			Poporangi Stream (Big Hill Rd Bridge)	Med 0.026 D 95 th percentile 0.035 C	Improving trend	Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
			Maraekakaho Stream	Med 0.024 D 95 th percentile 0.071 D		Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
		Lowland tributaries	Default	No/Insufficient data	Improving trend	Med ≤ 0.01 B 95 th percentile ≤ 0.03 B		Estuary ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Aquifer recharge • Mahinga kai, taonga/tohu species • Natural character • Abstractive uses
			Waitio Stream	Med 0.024 D 95 th percentile 0.081 D	Improving trend	Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
			Ohiwia Stream	Med 0.117 D 95 th percentile 0.21 D		Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
			Tutaekuri-Waimate Stream	Med 0.03 D 95 th percentile 0.049 D		Med ≤ 0.01 B 95 th percentile ≤ 0.03 B			
Suspended fine sediment Visual clarity (m) NOF Table 8	Trout fishery: Median Below median flow Recreation/ aesthetics Visual clarity Median Monthly samples Minimum 5 years NOF: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)	Headwaters	Default	No/Insufficient data	≥ 5 <Kotahi Review>	≥ 5 <Kotahi Review>	Trout fishery: Bright blue ≥ 5 meets outstanding trout fishery values. Light green ≥ 3.75 and < 5 meets significant trout fishery. Russet <3.75 does not meet significant trout fishery values. Recreation /aesthetics Very light green: > 1.6 meets recreation/aesthetics values. Light russet: ≤ 1.6 doesn't meet recreation/ aesthetics values. NOF Attribute <Kotahi Review>	Trout fishery - outstanding	<ul style="list-style-type: none"> • Mauri • Uu • Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat • Natural character • Recreation • Amenity natural character • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Kuripapango (Class 1)	5.7 A	Maintain <Kotahi Review>	Maintain <Kotahi Review>			
			Whanawhana (Class 1)	4.5 A	Improving trend <Kotahi Review>	≥ 5 <Kotahi Review>			
		Main stem	Default	No/Insufficient data	≥ 3.75 <Kotahi Review>	≥ 3.75 <Kotahi Review>		Trout fishery - significant	
			d/s HB Dairies (Class 1)	3.31 D	Improving trend <Kotahi Review>	≥ 3.75 <Kotahi Review>	A band (Class 1 ≥ 1.78 m; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota.		
			Femhill	2.74	Improving trend	≥ 3.75			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			(Class 1)	0.65 D	<Kotahi Review>	<Kotahi Review>	<p>Ecological communities are similar to those observed in natural reference conditions.</p> <p>B band (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced.</p> <p>C band (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost.</p> <p>D band (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61). High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.</p>		
			Chesterhope (Class 1)	2.1	Improving trend	≥ 3.75			
				1.58 - D	<Kotahi Review>	<Kotahi Review>			
		Hill country tributaries	Default	No/Insufficient data	≥ 3.75	≥ 3.75			
					<Kotahi Review>	<Kotahi Review>			
			Ohara Stream (Class 3)	No/Insufficient data	≥ 3.75	≥ 3.75			
						<Kotahi Review>		<Kotahi Review>	
			Poporangi Stream (Class 1)	No/Insufficient data	≥ 3.75	≥ 3.75			
						<Kotahi Review>		<Kotahi Review>	
		Maraekakaho Stream	No/Insufficient data	3.74	≥ 3.75	≥ 3.75			
					3.2 A	<Kotahi Review>		<Kotahi Review>	
		Lowland tributaries	Default	No/Insufficient data	> 1.6	> 1.6			
					<Kotahi Review>	<Kotahi Review>			
			Waitio Stream (Class 2)	No/Insufficient data	4.45	Maintain		Maintain	
						<Kotahi Review>	<Kotahi Review>		
			Ohiwia Stream (Class 2)	No/Insufficient data	3.15	Maintain	Maintain		
						<Kotahi Review>	<Kotahi Review>		
		Tutaekuri-Waimate Stream (Class 1)	No/Insufficient data	1.58	> 1.6	> 1.6			
					<Kotahi Review>	<Kotahi Review>			
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years 95 th percentile	Headwaters		No/Insufficient data	<20%	<20%	<p>Light green: < 20% protects stream biodiversity and fish (native and trout) habitat.</p> <p>Russet: ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.</p>	Biodiversity	<ul style="list-style-type: none"> Uu Waimaori Mauri Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori land, marae/hapū Natural character Indigenous biodiversity
		Main stem		No/Insufficient data	<20%	<20%			
		Hill country tributaries		No/Insufficient data	<20%	<20%			
		Lowland tributaries	Hard bottom streams	No/Insufficient data	<20%	<20%			
Deposited fine sediment (%)	% fine sediment cover Median Monthly samples Minimum 5 years				<Kotahi Review>				
NOF Table 16									

TABLE 26.3.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR		
Fish index of Biotic Integrity (F-IBI) NOF Table 13					<Kotahi Review>						
Macroinvertebrates MCI QMCI NOF Table 14 (Action Plan required) ASPM NOF Table 15 (Action Plan required)	1. MCI (sb MCI where relevant) Macroinvertebrate Community Index Average Below median flow 2. QMCI (sb QMCI where relevant) Quantitative Macroinvertebrate Community Index 3. ASPM Macroinvertebrate average score per metric	Headwaters	Default	No/Insufficient data	Improving trend	MCI ≥ 130 A	<p>A band (blue): (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6)</p> <p>Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment.</p> <p>Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions.</p> <p>B band (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4)</p> <p>Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment.</p> <p>Macroinvertebrate communities have mild-to-moderate loss of ecological integrity.</p> <p>C band (orange): (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3)</p> <p>Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment.</p> <p>Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity.</p> <p>D band (red): (below national bottom line) (MCI < 90; QMCI < 4.5; ASPM < 0.3)</p> <p>Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment.</p> <p>Communities are largely composed of taxa insensitive to organic pollution/enrichment</p> <p>Macroinvertebrate communities have severe loss of ecological integrity.</p>	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning Natural character Indigenous biodiversity Trout 		
						Kuripapango				Improving trend	MCI ≥ 130 A
											QMCI ≥ 6.5 A
			ASPM ≥ 0.6 A								
			Whanawhana	Improving trend	MCI ≥ 130 A						
					QMCI ≥ 6.5 A						
					ASPM ≥ 0.6 A						
			Main stem	Default	No/Insufficient data	Maintain or improve				MCI ≥ 110 B	
										QMCI ≥ 5.5 B	
										ASPM ≥ 0.4 B	
				d/s HB Dairies	Maintain	MCI ≥ 111 B					
						QMCI ≥ 5.5 B					
		ASPM ≥ 0.46 B									
		Fernhill		Improving trend	MCI ≥ 110 B						
					QMCI ≥ 5.5 B						
					ASPM ≥ 0.4 B						
		Chesterhope	Improving trend	MCI ≥ 110 B							
				QMCI ≥ 5.5 B							
				ASPM ≥ 0.4 B							
		Hill country tributaries	Default	No/Insufficient data	Maintain or improve	MCI ≥ 110 B					
QMCI ≥ 5.5 B											
ASPM ≥ 0.4 B											

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Ohara Stream	MCI No/Insufficient data	Maintain or improve	MCI ≥ 110 B			
				QMCI No/Insufficient data		QMCI ≥ 5.5 B			
				ASPM No/Insufficient data		ASPM ≥ 0.4 B			
			Poporangi Stream	MCI 117 B	Maintain	MCI ≥ 117 B			
				QMCI 6 B	Maintain	QMCI ≥ 6 B			
				ASPM 0.6 A	Maintain	ASPM ≥ 0.6 A			
			Maraekakaho Stream	MCI 86 D	Improving trend	MCI ≥ 110 B			
				QMCI 4.5 C	Improving trend	QMCI ≥ 5.5 B			
				ASPM 0.30 C	Improving trend	ASPM ≥ 0.4 B			
		Lowland tributaries	Default	No/Insufficient data	Maintain or improve	MCI ≥ 90 C 110 B			<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning Natural character Indigenous biodiversity
						QMCI ≥ 4.5 C 5.5 B			
						ASPM ≥ 0.3 C 0.4 B			
			Waitio Stream	MCI 98.1 C	Maintain Improve	MCI ≥ 98.1 C 110 B			
				QMCI 4.5 C	Maintain Improve	QMCI ≥ 0.3 C 5.5 B			
				ASPM 0.48 B	Maintain	ASPM ≥ 0.4 B			
			Ohiwia Stream	MCI 80.3 D	Improving trend	MCI ≥ 90 C 110 B			
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.22 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Tutaekuri-Waimate	MCI 75.8	Improving trend	MCI ≥ 90			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Stream	D		C 110 B			
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.16 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
Macrophytes (max % CAV)	Monthly All year observations	Lowland tributaries		No/Insufficient data	≤ 50 %	≤ 50 %	Light green ≤ 50 % maintains ecological condition / flow conveyance / recreation values. Russet > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga waka • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

TABLE 26.3.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Periphyton (mg/m ²) (Trophic state) NOF Table 2	Max exceedance < 8% of samples exceedances over 3 years monthly observations	Main stem	Fernhill	C	B	B	A band: (≤ 50 less than 8%) Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. B band: (Exceeds >50 and ≤ 120 less than 8%) Occasional blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime. C band: (Exceeds >120 and ≤ 200 less than 8%). Periodic short -duration nuisance blooms reflecting moderate enrichment and/or moderate alteration of the natural flow regime or habitat D band: (exceeds national bottom line) (> 200 less than 8%) Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Natural character • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Indigenous biodiversity
Periphyton cover (median of annual max %PeriWCC)	Monthly observations All year	Headwaters	Default	No/Insufficient data	≤ 20	≤ 20	Blue: (≤ 20) Ecological condition excellent and maintains recreation/aesthetics values. Green: (> 20 and ≤ 30)	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū • Natural character • Indigenous biodiversity • Abstractive uses including stock drinking
		Kuripapango	No/Insufficient data	≤ 20	≤ 20				
		Whanawhana	27 (2012-2015)	≤ 20	≤ 20				
		Main stem	Default	No/Insufficient data	≤ 30	≤ 30			
		d/s HB Dairies	39	≤ 30	≤ 30				

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				(2012-2015)			Ecological condition good and maintains recreation/aesthetics values.		
			Fernhill	41 (2012-2015)	≤ 30	≤ 30	<p>Yellow: (> 30 and ≤ 40) Ecological condition good and doesn't meet recreation/aesthetics values.</p> <p>Orange: (> 40 and ≤ 55) Ecological condition fair and doesn't meet recreation/aesthetics values.</p> <p>Red: (> 55) Ecological condition poor and doesn't meet recreation/aesthetics values.</p>		
			Chesterhope	No/Insufficient data	≤ 30	≤ 30			
		Upland tributaries	Default	No/Insufficient data	≤ 30	≤ 30			
			Ohara Stream	No/Insufficient data	≤ 30	≤ 30			
			Poporangi Stream	No/Insufficient data	≤ 20	≤ 20			
			Maraekakaho Stream	80 (2012-2015)	≤ 30	≤ 30			
		Lowland tributaries	Default (hard bottom streams)	No/Insufficient data	≤ 30	≤ 30			
			Waitio Stream	22 (2012-2015)	≤ 22	≤ 22			
			Ohiwia Stream	49 (2012-2015)	≤ 40	≤ 30			
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background level	No change from background level	No increased risk from point source	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Natural character Indigenous biodiversity Trout
Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Headwaters		No/Insufficient data	A	≥ 8 (7-d mean min) ≥ 7.5 (1-d min) ≥ 80% saturation A	<p>A band (blue): (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites.</p> <p>B band (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species.</p> <p>C band (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost.</p> <p>D band (red): (below national bottom line) (7-day mean minimum < 5; 1-day min < 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.</p>	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Natural character Indigenous biodiversity Trout
		Main stem		No/Insufficient data					
		Hill country tributaries		No/Insufficient data					
		Lowland tributaries		No/Insufficient data	<p>≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C</p> <p>≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B</p>				

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE* ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
BOD (ScBOD ₅)	Below median flow		Consent related		<2 mg/l	<2 mg/l	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.		
Ecosystem Metabolism (gO ₂ m ⁻² d ⁻¹) NOF Table 21	7-day min (Dec-Mar) Young et al method				<Kotahi review>	<Kotahi review>			
Temperature (°C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Headwaters		No/Insufficient data	<Kotahi review>	≤ 1° C increment from reference state A	A band (blue): (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites. B band (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish. C band (orange): (≤ 3°C increment compared to reference site) Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. D band (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuwheua mahinga kai Natural character Indigenous biodiversity Trout
		Main stem		No/Insufficient data	<Kotahi review>	≤ 2° C increment from reference state B			
		Hill country tributaries		No/Insufficient data	<Kotahi review>	≤ 2° C increment from reference state B			
		Lowland tributaries		No/Insufficient data	<Kotahi review>	≤ 2° C increment from reference state B			
pH	At all times, 95 th percentile				<Kotahi Review>	<Kotahi Review>			
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required	No/Insufficient data	95% species protection at all times	95% species protection at all times	Greater than 95% of species are protected.	Ecosystem health	

TABLE 26.3.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR														
Cyanobacteria¹ (benthic cover %)	Monthly observations, All year	All hard bottomed streams	As required	No/Insufficient data	< 20% ¹	< 20% ¹	Light green < 20% benthic cover. Orange ≥ 20% and <50% benthic cover. Red >50% benthic cover.	Recreation	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species habitat and spawning, mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū, • Ecosystem health • Natural character • Abstractive uses including stock drinking 														
Escherichia coli (E.coli) (cfu/100 mL) NOF Table 9	All year All flows Refer to NOF Table 9 for a fuller description of how to measure these attributes	Headwaters	Default Kuripapango Whanawhana	No/Insufficient data A A	A Maintain Maintain	A Maintain Maintain	A band (Blue) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. B band (Green) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. C band (Yellow) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. D band (Orange) 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. E band (Red) For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	<ul style="list-style-type: none"> • Waimaori • Mauri • Kaitiakitanga, he aha haere, ahuhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use 														
Main stem	Default d/s HB Dairies Fernhill Chesterhope	No/Insufficient data A B B	A Maintain Maintain Maintain	B B B B	B Maintain Maintain Maintain																		
						Hill country tributaries				Default Ohara Stream Poporangi Stream Maraekakaho Stream	No/Insufficient data No/Insufficient data No/Insufficient data D	B B B B	B B B B										
														Lowland tributaries	Default Waitio Stream Ohiwia Stream Tutaekuri-Waimate Stream	No/Insufficient data B D D	B Maintain B B	B B B B					
																			Lowland	Ngaruroro at Chesterhope Bridge	308 Fair	<Kotahi review>	Excellent ≤ 130 Estimated risk of <i>Campylobacter</i> infection has a <0.1% occurrence, 95% of the time. Good >130 and ≤ 260 Estimated risk of <i>Campylobacter</i> infection has a 0.1 – 10% occurrence, 95% of the time. Fair >260 and ≤ 540 Estimated risk of <i>Campylobacter</i> infection has a 1 - 5% occurrence, 95% of the time. Poor >540 (below national bottom line) Estimated risk of <i>Campylobacter</i> infection has a >5% occurrence, 95% of the time.

Note 1 The target attribute state for cyanobacteria is applicable only in relation to Policy 16 and any exceedance triggers an alert level response by Council ((from the MfE Alert-level Framework: NZ Guidelines for cyanobacteria in recreational freshwaters.)

TABLE 26.3.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO ₃ /l)	95 th percentile 5 years	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes:									
<ul style="list-style-type: none"> The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality. 									

TABLE 26.3.4: Threatened Species

<Insert through Kotahi process>

TABLE 26.3.5: Mahinga Kai

<Insert through Kotahi process>

TABLE 26.3.6: Mātauaranga Maori

<Insert through Kotahi process>

TABLE 26.3.7: Wetlands and Lakes

<Insert through Kotahi process>

SCHEDULE 26.4: KARAMŪ CATCHMENT

Refer to Planning Map Schedule 26.4

Vision

<to be drafted through Kotahi Review process>

Outcomes

≤ This sits in the body of the Plan. Refer to ~~relevant~~ TANK Objectives 13 and 14^{197.2, 197.3, 180.10 135.1} ≥

TABLE 26.4.1a: Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
DIN (mg/L)	Median 5 years All flows	Karamū (Lowland)	Default	Insufficient/no data	≤ 0.444	≤ 0.444	<p>Light Green: (≤ 0.444) Below ANZECC default guideline value, unlikely to be concerning.</p> <p>Orange: (> 0.444) Above ANZECC default guideline value, investigation/management recommended.</p>	Estuary ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Recreation • Aquifer recharge • Natural character • Abstractive uses including for domestic, farm and community water supply, primary production, industrial and commercial use
			Raupare Stream	0.284	Maintain	Maintain			
			Ruahapia Stream	Insufficient/no data	≤ 0.444	≤ 0.444			
			Irongate Stream	Insufficient/no data	≤ 0.444	≤ 0.444			
			Karewarewa Stream	1.119	≤ 0.444	≤ 0.444			
			Awanui Stream	0.994	≤ 0.444	≤ 0.444			
			Poukawa Stream	0.088	Maintain	Maintain			
			Herehere Stream	0.13	Maintain	Maintain			
			Mangarau Stream (Te Aute)	Insufficient/no data	≤ 0.444	≤ 0.444			
			Clive River	0.445	≤ 0.444	≤ 0.444			
Ammonia (mg NH ₄ -N/L) NOF Table 5	1. Annual median 2. Annual max Unionised ammonia based on pH at 20°C All flows	Karamū (Lowland)	Default	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A	<p>A band (blue): (Median ≤ 0.03; Max ≤ 0.05) 99% species protection level, no observed effect on any species tested.</p> <p>B band (green): (Median > 0.03 and ≤ 0.24; Max > 0.05 and ≤ 0.40) 95% species protection; starts impacting occasionally on the 5% most sensitive species.</p> <p>C band (red, below national bottom line): (Median > 0.24 and ≤ 1.30; Max > 0.40 and ≤ 2.20) 80% species protection; starts impacting regularly on the 20% most sensitive species (Reduced survival of most sensitive species).</p> <p>D band (purple, below national bottom line): (Median > 1.30; Max > 2.20) Starts approaching acute impact level (that is, risk of death) for sensitive species.</p>	Toxicity	<ul style="list-style-type: none"> • Waimaori • Mauri • Indigenous taonga/tohu species habitat and spawning, ahu moana • Aquifer recharge • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Raupare Stream	Median 0.009 A	Maintain	Maintain			
				Max 0.035 A	Maintain	Maintain			
			Ruahapia Stream	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Irongate Stream	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Karewarewa Stream	Median 0.021 A	Maintain	Maintain			
				Max 0.091 C	Improving trend	Max ≤ 0.05 A			
Awanui Stream	Median 0.012 A	Maintain	Maintain						
	Max 0.083 C	Improving trend	Max ≤ 0.05 A						
Poukawa Stream	Median 0.002	Maintain	Maintain						

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				A					
				Max 0.01 A	Maintain	Maintain			
			Herehere Stream	Median 0.008 A	Maintain	Maintain			
				Max 0.053 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
			Mangarau Stream (Te Aute)	Insufficient/no data	Median ≤ 0.03 A	Median ≤ 0.03 A			
					Max ≤ 0.05 A	Max ≤ 0.05 A			
			Clive River	Median 0.013 A	Maintain	Maintain			
				Max 0.126 B	Max ≤ 0.05 A	Max ≤ 0.05 A			
Nitrate (mg NO ₃ -N/L) NOF Table 6	1. Annual median 2. Annual 95 th percentile Hazen method All flows	Karamū (Lowland)	Default	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A	A band (blue): (Median ≤ 1.0; 95 th percentile ≤ 1.5) High conservation value system. Unlikely to have adverse effects, even on sensitive species. B band (green): (Median > 1.0 and ≤ 2.4; 95 th percentile > 1.5 and ≤ 3.5) 95% species protection; some growth effects on up to 5% of species. C band : (red, below national bottom line) (Median > 2.4 and ≤ 6.9; 95 th percentile > 3.5 and ≤ 9.8) Growth effects on up to 20% of species; (mainly sensitive species such as fish). No acute effects. D band (purple, below national bottom line) (Median > 6.9; 95 th percentile > 9.8). Impacts on growth of multiple species, and starts approaching acute impact level (that is, risk of death) for sensitive species at higher concentrations (> 20 mg/L).	Toxicity	<ul style="list-style-type: none"> Waimaori Mauri Indigenous taonga/tohu species habitat and spawning, ahu moana Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
					Raupare Stream	Median 0.255 A			
			95 th percentile 0.830 A	Maintain		Maintain			
			Ruahapia Stream	Insufficient/no data	Median ≤ 1.0 A	Median ≤ 1.0 A			
					95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A			
			Irongate Stream	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A			
					95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A			
			Karewarewa Stream	Median 1.25 B	Median ≤ 1 A	Median ≤ 1 A			
				95 th percentile 4.4 C	Improving trend	95 th percentile ≤ 1.5 A			
			Awanui Stream	Median 1.2 B	Median ≤ 1 A	Median ≤ 1 A			
				95 th percentile 3.17 B	95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A			
			Poukawa Stream	Median 0.086 A	Maintain	Maintain			
				95 th percentile 0.618 A	Maintain	Maintain			
			Herehere Stream	Median 0.194 A	Maintain	Maintain			
95 th percentile 0.941 A	Maintain	Maintain							
Mangarau Stream (Te Aute)	Insufficient/no data	Median ≤ 1 A	Median ≤ 1 A						

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Clive River	Median 0.61 A	Maintain	Maintain			
				95 th percentile 1.832 B	95 th percentile ≤ 1.5 A	95 th percentile ≤ 1.5 A			
DRP (mg/L) NOF Table 20	1. Median 2. 95 th percentile All flows	Karamū (Lowland)	Default	Insufficient/no data	Maintain or improving trend	Median ≤ 0.01 95 th percentile ≤ 0.03 B	A band (blue): (Median ≤ 0.006; 95 th percentile ≤ 0.021) Ecological communities and ecosystem processes are similar to those of natural reference conditions. No adverse effects attributable to dissolved reactive phosphorus (DRP) enrichment are expected. B band (green): (Median >0.006 and ≤ 0.010; 95 th percentile >0.021 and ≤0.030) Ecological communities are slightly impacted by minor DRP elevation above natural reference conditions. If other conditions also favour eutrophication, sensitive ecosystems may experience additional algal and plant growth, loss of macroinvertebrate taxa and higher respiration and decay rates. C band (orange): (Median >0.01 and ≤ 0.018; 95 th percentile >0.030 and ≤0.054) Ecological communities are impacted by moderate DRP elevation above natural reference conditions. If other conditions also favour eutrophication, DRP enrichment may cause increased algal plant growth, loss of sensitive macro-invertebrate and fish taxa, and high rates of respiration and decay. D band (red): (Median > 0.018; 95 th percentile > 0.054) Ecological communities impacted by substantial DRP elevation above natural reference conditions. In combination with other conditions favouring eutrophication, DRP enrichment drives excessive primary production and significant changes in macroinvertebrate and fish communities, as taxa sensitive to hypoxia are lost.	Estuary ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Mahinga kai, taonga/tohu species • Aquifer recharge • Natural character • Abstractive uses
			Raupare Stream	Median 0.027 D	Improving trend	Median ≤ 0.01 B			
				95 th percentile 0.038 C	Improving trend	95 th percentile ≤0.03 B			
			Ruahapia Stream	Insufficient/no data	Improving trend	Median ≤ 0.01 95 th percentile ≤ 0.03 B			
			Irongate Stream	Insufficient/no data					
			Karewarewa Stream	Median 0.122 D					
				95 th percentile 0.275 D					
			Awanui Stream	Median 0.16 D					
				95 th percentile 0.387 D					
			Poukawa Stream	Median 0.154 D					
				95 th percentile 0.365 D					
			Herehere Stream	Median 0.064 D					
				95 th percentile 0.104 D					
Mangarau Stream (Te Aute)	Insufficient/no data								
Clive River	Median 0.09 D								
	95 th percentile 0.23 D								
Suspended fine sediment	Recreation/ Aesthetics	Karamū (Lowland)	Default	Insufficient/no data	> 1.6	> 1.6	Recreation/ aesthetics	Recreation/ aesthetics	<ul style="list-style-type: none"> • Uu • Mauri

Appendix 2B – Recommended changes to Proposed Plan Change 9

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Visual clarity (m) NOF Table 8	Visual clarity Median Monthly samples Minimum 5 years NOF: Visual clarity Median Monthly samples Minimum 5 years Suspended Sediment (Classes 1 – 4)				<Kotahi Review>	<Kotahi Review>	<p>Very Light Green: > 1.6 meets recreation/aesthetics values.</p> <p>Light Russet ≤ 1.6 doesn't meet recreation/aesthetics values.</p> <p>NOF Attribute <Kotahi Review></p> <p>A band (Class 1 ≥ 1.78 m; Class 2 ≥ 0.93) Minimal impact of suspended sediment on instream biota. Ecological communities are similar to those observed in natural reference conditions.</p> <p>B band (Class 1: < 1.78 and ≥ 1.55; Class 2: < 0.93 and ≥ 0.76) Low to moderate impact of suspended sediment on instream biota. Abundance of sensitive fish species may be reduced.</p> <p>C band (Class 1: < 1.55 and ≥ 1.34, Class 2: < 0.76 and ≥ 0.61) Moderate to high impact of suspended sediment on instream biota. Sensitive fish species may be lost.</p> <p>D band (below national bottom line) (Class 1: < 1.34; Class 2: < 0.61) High impact of suspended sediment on instream biota. Ecological communities are significantly altered, and sensitive fish and macroinvertebrate species are lost or at risk of being lost.</p>		<ul style="list-style-type: none"> Indigenous biodiversity and mahinga kai, taonga and tohu species and habitat Natural character Recreation Amenity natural character Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Raupare Stream (class1)	1.75	Maintain	Maintain			
				1.75 B	<Kotahi Review>	<Kotahi Review>			
			Ruahapia Stream (class 1)	Insufficient/no data	> 1.6	> 1.6			
					<Kotahi Review>	<Kotahi Review>			
			Irongate Stream (class 1)	Insufficient/no data	> 1.6	> 1.6			
					<Kotahi Review>	<Kotahi Review>			
			Karewarewa Stream (class 2)	2.15	Maintain	Maintain			
				2.15 A	<Kotahi Review>	<Kotahi Review>			
			Awanui Stream (class 2)	1.5	Improving trend	> 1.6			
				1.5 A	<Kotahi Review>	<Kotahi Review>			
			Poukawa Stream (class 2)	2.02	Maintain	Maintain			
				2.02 A	<Kotahi Review>	<Kotahi Review>			
			Herehere Stream (class 2)	2.35	Maintain A	Maintain A			
	2.35 A	<Kotahi Review>	<Kotahi Review>						
Mangarau Stream (Te Aute) (class 2)	Insufficient/no data	> 1.6	>1.6						
		<Kotahi Review>	<Kotahi Review>						
Clive River (class 1)	0.85	Improving trend	≥ 1.6						
	0.85 D	<Kotahi Review>	<Kotahi Review>						
Deposited fine sediment (%)	% fine sediment cover Monthly samples Minimum 5 years 95 th percentile	Karamū (Lowland)	Hard-bottomed streams	Insufficient/no data	<20%	<20%	<p>Light green: < 20% protects stream biodiversity and fish (native and trout) habitat.</p> <p>Russet: ≥ 20% doesn't meet protection of stream biodiversity and fish (native and trout) habitat.</p>	Biodiversity	<ul style="list-style-type: none"> Uu Waimaori Mauri Kaitiakitanga- ahu whenua mahinga kai, he aha haere, taonga/tohu species habitat and spawning, cultural practices, wetlands and lakes, maori land, marae/hapū Natural character Indigenous biodiversity
Deposited fine sediment (%) NOF Table 16	% fine sediment cover Monthly samples Minimum 5 years				<Kotahi Review>	<Kotahi Review>			

TABLE 26.4.1b: Ecosystem Health (Aquatic life)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Fish index of Biotic Integrity (F-IBI) NOF Table 13				< Kotahi review >					
Macroinvertebrates MCI QMCI NOF Table 14 ASPM NOF Table 15	1. MCI (sb-MCI where relevant) Macroinvertebrate Community Index Average Below median flow 2. QMCI (sb-QMCI where relevant) Quantitative Macroinvertebrate Community Index 3. ASPM Macroinvertebrate average score per metric	Karamū (Lowland)	Default	MCI Not available	Improving trend	MCI ≥90 C 110 B	A band (blue): (MCI ≥ 130; QMCI ≥ 6.5; ASPM ≥ 0.6) Macroinvertebrate community indicative of pristine conditions with almost no organic pollution or nutrient enrichment. Macroinvertebrate communities have high ecological integrity, similar to that expected in reference conditions. B band (green): (MCI ≥ 110 and < 130; QMCI ≥ 5.5 and < 6.5; ASPM <0.6 and ≥ 0.4) Macroinvertebrate community indicative of mild organic pollution or nutrient enrichment. Largely composed of taxa sensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have mild-to-moderate loss of ecological integrity. C band (orange): (MCI ≥ 90 and < 110; QMCI ≥ 4.5 and < 5.5; ASPM <0.4 and ≥ 0.3) Macroinvertebrate community indicative of moderate organic pollution or nutrient enrichment. There is a mix of taxa sensitive and insensitive to organic pollution/nutrient enrichment. Macroinvertebrate communities have a moderate-to-severe loss of ecological integrity. D band (red, (below national bottom line)) (MCI < 90; QMCI < 4.5; ASPM < 0.3) Macroinvertebrate community indicative of severe organic pollution or nutrient enrichment Communities are largely composed of taxa insensitive to organic pollution/enrichment. Macroinvertebrate communities have severe loss of ecological integrity.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species habitat and spawning Natural character Indigenous biodiversity
				QMCI not available	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Raupare Stream	MCI 62.7 D	Improving trend	MCI ≥90 C 110 B			
				QMCI 3.1 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.12 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Ruahapia Stream	MCI 53 D	Improving trend	MCI ≥90 C 110 B			
				QMCI 3.5	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Irongate Stream	MCI Not available	Improving trend	MCI ≥90 C 110 B			
				QMCI not available	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C 0.4 B			
Karewarewa Stream	MCI 55.9 D	Improving trend	MCI ≥90 C 110						

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
						B			
				QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Awanui Stream	MCI 52 D	Improving trend	MCI ≥ 90 C 110 B			
				QMCI 2.7 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Poukawa Stream	MCI 56.3 D	Improving trend	MCI ≥ 90 C 110 B			
				QMCI 3.2 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.09 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Herehere Stream	MCI 60.7 D	Improving trend	MCI ≥ 90 C 110 B			
				QMCI 2.4 D	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM 0.12 D	Improving trend	ASPM ≥ 0.3 C 0.4 B			
			Mangarau Stream (Te Aute)	MCI Not available	MCI ≥ 90 C	MCI ≥ 90 C 110 B			
				QMCI not available	Improving trend	QMCI ≥ 4.5 C 5.5 B			
				ASPM not available	Improving trend	ASPM ≥ 0.3 C 0.4			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
			Clive River	MCI 51.4 D	MCI ≥90 C	B MCI ≥90 E 110 B			
				QMCI 2.5 D	Improving trend	QMCI ≥ 4.5 E 5.5 B			
				ASPM 0.09 De	Improving trend	ASPM ≥ 0.3 E 0.4 B			
Macrophytes (max % CAV)	Monthly All year observations	Karamū (Lowland)		Insufficient/no data	≤ 50 %	≤ 50 %	Light Green ≤ 50 % maintains ecological condition / flow conveyance / recreation values. Russet > 50% doesn't meet ecological condition / flow conveyance / recreation values.	Ecosystem health	<ul style="list-style-type: none"> • Uu • Waimaori • Mauri • Kaitiakitanga, he aha haere, taonga/tohu species, mahinga kai, nohoanga, cultural practices, tauranga wak • Natural character • Indigenous biodiversity • Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

TABLE 26.4.1c: Ecosystem Health (ecological processes)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Dissolved Oxygen (mg/L) NOF Table 7	Below point source 7-day mean min Summer 1 Nov – 30 Apr		Consent related		No change from background levels	No change from background levels	No increased risk from point source.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, indigenous, toanga/tohu species Natural character Indigenous biodiversity
Dissolved Oxygen (mg/L or %) NOF Table 17	Continuous data 7-day mean minimum 1-day minimum Summer period (Nov-April)	Karamū (Lowland)	Default	No/Insufficient data	≥ 5 (7-d mean min) ≥ 4 (1-d min) ≥ 80% saturation C	≥ 7 (7-d mean min) ≥ 5 (1-d min) ≥ 80% saturation B	<p>A band (blue): (7-day mean minimum ≥ 8.0; 1-day min ≥ 7.5) No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites.</p> <p>B band (green): (7-day mean minimum ≥ 7.0 and < 8.0; 1-day min ≥ 5.0 and < 7.5) Occasional minor stress on sensitive organisms caused by short periods (a few hours a day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species.</p> <p>C band (orange): (7-day mean minimum ≥ 5.0 and < 7.0; 1-day min ≥ 4.0 and < 5.0) Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrates being lost.</p> <p>D band (red, below national bottom line) (7-day mean minimum < 5; 1-day min < 4.0) Significant persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity.</p>	Ecosystem health	<ul style="list-style-type: none"> Waimaori Natural character Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Indigenous biodiversity Trout
BOD (ScBOD ₅)	Below median flow		Consent related		<2 mg/l	<2 mg/l	Aquatic organisms are not subject to risk from low dissolved oxygen conditions.	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, indigenous taonga/tohu species Natural character Indigenous biodiversity
Ecosystem Metabolism (gO ₂ m ⁻² d ⁻¹) NOF Table 21	7-day min (Dec-Mar) Young et al method	Karamū (Lowland)			<Kotahi review>	<Kotahi review>			
Temperature regime (°C) 5-day CRI	Continuous measurement Cox-Rutherford-Index Averaged over 5 hottest days of summer period	Karamū (Lowland)		No/Insufficient data	<Kotahi Review>	≤ 2° C increment from reference state B	<p>A band (blue): (≤ 1°C increment compared to reference site) No thermal stress on any aquatic organisms that are present at matched reference (near-pristine) sites.</p> <p>B band (green): (≤ 2°C increment compared to reference site) Minor thermal stress on occasion (clear days in summer) on particularly sensitive aquatic organisms such as certain insects or fish.</p> <p>C band (orange): (≤ 3°C increment compared to reference site)</p>	Ecosystem health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, whakapapa, taonga/tohu species, ahumoana, ahuhenua mahinga kai Natural character Indigenous biodiversity

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
							Some thermal stress on occasion, with elimination of certain sensitive insects and absence of certain sensitive fish. D band (red): (> 3°C increment compared to reference site) Significant thermal stress on a range of aquatic organisms. Risk of local elimination of keystone species with loss of ecological integrity.		
pH	At all times, 95 th %ile	Karamū (Lowland)			<Kotahi review>				
Heavy metals & metalloids, pesticides & organic contaminants, radioactive contaminants	As required		As required		99% species protection at all times	99% species protection at all times	Greater than 99% of species are protected.	Ecosystem health	

TABLE 26.4.2: Human Contact

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE TREND TO 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
<i>Escherichia coli (E.coli)</i> (cfu/100 mL) NOF Table 9	All year All flows Overall band determined over 4 numeric attribute states – details see NOF Table 9	Karamū (Lowland)	Raupare Stream	E	B	B	A band (Blue) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 1%. B band (Green) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 2%. C band (Yellow) For at least half the time, the estimated risk is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%. D band (Orange) 20-30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >3%. E band (Red) For more than 30% of the time the estimated risk is ≥50 in 1000 (>5% risk). The predicted average infection risk is >7%.	Uu Recreation Human health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, he aha haere Ahu moana, ahuhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use
			Ruahapia Stream	No/Insufficient data	B	B			
			Irongate Stream	No/Insufficient data	B	B			
			Karewarewa Stream	E	B	B			
			Awanui Stream	E	B	B			
			Poukawa Stream	B	Maintain	Maintain			
			Herehere Stream	E	B	B			
			Mangarau Stream (Te Aute)	No/Insufficient data	B	B			
			Clive River	D	B	B			
Other river reaches	E	B	B						
<i>Escherichia coli (E.coli)</i> (cfu/100 mL) NOF Table 22	95 th percentile of <i>E.coli</i> per 100 mL	Karamū	Clive River at Boat Ramp	576 D	<Kotahi Review>		Excellent ≤ 130 Estimated risk of <i>Campylobacter</i> infection has a <0.1% occurrence, 95% of the time. Good >130 and ≤ 260 Estimated risk of <i>Campylobacter</i> infection has a 0.1 – 10% occurrence, 95% of the time. Fair >260 and ≤ 540 Estimated risk of <i>Campylobacter</i> infection has a 1 - 5% occurrence, 95% of the time.	Uu Recreation Human health	<ul style="list-style-type: none"> Waimaori Mauri Kaitiakitanga, he aha haere Ahu moana, ahuhenua mahinga kai, nohoanga, cultural practices, tauranga waka, maori land, marae/hapū connections Aquifer recharge Abstractive uses including for domestic, farm and community water supply, primary production and food production, industrial and commercial use

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

TABLE 26.4.3: Groundwater (Water Use)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ATTRIBUTE STATE 2040	OUTCOME LONG TERM TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Any aesthetic determinand (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
E. coli (cfu / 100ml)	Maximum concentration As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Human Health	
Nitrate-nitrogen (mg N-NO ₃ /l)	95 th percentile 5 years	Groundwater – all areas	<Kotahi review>	<Kotahi review>	< 1	< 1		Ecosystem health	
All other determinands (Drinking Water Standards for New Zealand)	As required	Groundwater – all areas	<Kotahi review>	<Kotahi review>	Within guidelines specified in the Drinking Water Standards for New Zealand	Within guidelines specified in the Drinking Water Standards for New Zealand		Human Health	
Notes:									
<ul style="list-style-type: none"> The attributes are as measured in groundwater at 10m below ground level. Some aesthetic determinands including iron, manganese and hardness are affected by geological conditions and will affect natural water quality. 									

TABLE 26.4.4: Threatened Species

<Insert through Kotahi process>

TABLE 26.4.5: Mahinga Kai

<Insert through Kotahi process>

TABLE 26.4.6: Mātauranga Maori

<Insert through Kotahi process>

TABLE 26.4.7: Wetlands and Lakes

<Insert through Kotahi process>

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SCHEDULE 26.5: AHURIRI ESTUARY / TE WHANGANUI-A-OROTŪ & WAITANGI ESTUARY

Refer to Planning Map Schedule 26.5

Vision

<to be drafted through Kotahi Review process>

Outcomes

<This sits in the body of the Plan. Refer to relevant TANK Objectives 10-13 and Kotahi Review 197.2, 197.3, 180.10 135.1>

TABLE 26.5.1 AHURIRI ESTUARY/TE WHANGANUI-A-OROTŪ Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ¹ ATTRIBUTE STATE 2040	OUTCOME LONG TERM ¹ TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Water column dissolved oxygen (mg/L)	Summer monitoring data for discrete specified periods: 1. 7-day mean 2. 7-day min 3. 1-day min	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	<Kotahi Review>	7 day mean ≥ 7.0	Dissolved oxygen in the water column is sufficient to support ecosystem health and life supporting capacity	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
					<Kotahi Review>	7 day minimum ≥ 6.0			
					<Kotahi Review>	1 day minimum ≥ 5.0			
Enterococci (cfu/100 mL)	Summer bathing season	Ahuriri Estuary	Pandora Pond at Waka Ama	95 th percentile 44	<Kotahi Review>	95 th percentile 41-200	1-5% gastrointestinal illness risk 0.3- <1.9% acute febrile respiratory illness risk MAC B grade – Mfe/MoH, 2003	Kaitiakitanga Recreation Mahinga kai	<ul style="list-style-type: none"> Uu Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Esherichia coli (E. coli) (cfu/100 mL)	Summer bathing season	Ahuriri Estuary	Pandora Pond at Waka Ama	95 th percentile 540	<Kotahi Review>	95 th percentile 260-540	Estimated risk of <i>Campylobacter</i> infection has a 1-5% occurrence, 95% of the time MAC C grade – Mfe/MoH, 2003	Kaitiakitanga Recreation Mahinga kai	<ul style="list-style-type: none"> Uu Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water Temperature (°C)	Summer maxima	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	Not more than 3-C difference compared to reference site	Not more than 3-C difference compared to reference site	Water temperature is maintained for ecosystem health	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
pH	Daily summer maxima	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	No/Insufficient data	pH is greater than 7.0 and less than 8.5	pH is greater than 7.0 and less than 8.5	pH range is maintained for ecosystem health and life-supporting capacity	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrate toxicity (mg/L)	1. Annual median 2. Annual 95 th percentile (Hazen)	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Median 0.007	Maintain	Maintain	Low risk: (Median ≤ 2.4 mg/L; and 95 th % ile ≤ 3.5 mg/L) High risk: (Median >2.4 mg/L; and 95 th % ile >3.5 mg/L)	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				95 th percentile 0.45					
Ammonia toxicity (mg/L)	Annual maxima for a 12-month period when corrected for pH and temperature	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	TBC	95% species protection	95% species protection	99% of species protection: (<0.16 mg/L) 95% of species protection: (<0.46 mg/L)	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Toxicants in water (as described in ANZG)	As required	Ahuriri Estuary		No/Insufficient data	Does not exceed 95% level of protection in ANZG, 2018.	Does not exceed 95% level of protection in ANZG, 2018		Kaitiakitanga Ecosystem health Mahinga kai	<ul style="list-style-type: none"> Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrogen in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Nitrate - Nitrogen 0.007	Where nutrient levels exceed trigger values there is an improving trend by 2040	<Kotahi Review>	Trigger values Nitrate-Nitrogen 0.05 Total Nitrogen 0.11	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Ecosystem health Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				Total Nitrogen: 0.41	Where nutrient levels exceed trigger values there is an improving trend by 2040	<Kotahi Review>			
Phosphorus in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Dissolved Reactive Phosphorus: 0.10	Where nutrient levels exceed trigger values there is an improving trend by 2040	<Kotahi Review>	Trigger Values Dissolved Reactive Phosphorus 0.015	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Ecosystem health Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				Total Phosphorus:	Where nutrient levels	<Kotahi Review>			

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ¹ ATTRIBUTE STATE 2040	OUTCOME LONG TERM ¹ TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
				0.14	exceed trigger values there is an improving trend by 2040		Total Phosphorus 0.05		
Nuisance macroalgae cover	TBC	Ahuriri Estuary	TBC	No/Insufficient data		<Kotahi Review>		Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> • Uu • Mauri • Recreation • Natural Charater • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water column Chlorophyll a (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	0.002	Maintain	Maintain	Low risk: (0.004 mg/L) The risk of excessive phytoplankton growth is low	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> • Mauri • Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Sediment Mud content (% composition)	Spatial analysis of estuary grain size	Ahuriri Estuary	Estuary to Taipo confluence	TBC	The areal extent of soft mud ² substrate in the estuary should not increase from its current extent	The areal extent of soft mud ² substrate in the estuary should not increase from its current extent	No increase in areas where sediment stress may be impacting the health of the estuary	Kaitiakitanga Ecosystem health Mahinga kai	<ul style="list-style-type: none"> • Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana • Natural character
Toxicants in sediments (mg/kg)	Annual median of site replicates at Estuarine Ecology Monitoring Sites	Ahuriri Estuary	Estuarine Ecology Monitoring Sites	TBC	Does not exceed interim sediment quality guidelines (ISQG) - High	Does not exceed interim sediment quality guidelines (ISQG) - Low	Rare adverse effects: (≤ ISQG – Low) Occasional adverse effects: (≤ ISQG – High) Frequent adverse effects: (>ISQG - High)	Kaitiakitanga Ecosystem health Mahinga Kai	<ul style="list-style-type: none"> • Mauri • Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Notes 1. The 2040 target and long term outcome are applicable to all estuary waters and are monitored at the specified sites. 2. Soft mud refers to the proportion of the substrate that is less than 63 microns.									

TABLE 26.5.2: WAITANGI ESTUARY Ecosystem Health (Water quality)

ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ¹ ATTRIBUTE STATE 2040	OUTCOME LONG TERM ¹ TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Water column dissolved oxygen (mg/L)	Summer monitoring data for discrete specified periods	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	<Kotahi Review>	7 day mean ≥ 7.0	Dissolved oxygen in the water column is sufficient to support ecosystem health and life supporting capacity	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana Natural character
					<Kotahi Review>	7 day minimum ≥ 6.0			
					<Kotahi Review>	1 day minimum ≥ 5.0			
Water Temperature (°C)	Summer maxima	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	Not more than 3°C difference compared to reference site	Not more than 3°C difference compared to reference site	Water temperature is maintained for ecosystem health	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
pH	Daily summer maxima	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	pH is greater than 7.0 and less than 8.5	pH is greater than 7.0 and less than 8.5	pH range is maintained for ecosystem health and life-supporting capacity	Kaitiakitanga Ecosystem Health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrate toxicity (mg/L)	1. Annual median 2. Annual 95 th percentile (Hazen)	Waitangi Estuary	Waitangi Estuary	Median 0.26	Maintain	Maintain	Low risk: (Median ≤ 2.4 mg/L; and 95 th % ile ≤ 3.5 mg/L) High risk: (Median >2.4 mg/L; and 95 th % ile >3.5 mg/L)	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				95 th percentile 0.57					
Ammonia toxicity (mg/L)	Annual maxima for a 12-month period when corrected for pH and temperature	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	95% species protection	95% species protection	99% of species protection: (<0.16 mg/L) 95% of species protection: (<0.46 mg/L)	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Toxicants in water (as described in ANZG)	As required	Waitangi Estuary	Waitangi Estuary	No/Insufficient data	Does not exceed 95% level of protection in ANZG, 2018.	Does not exceed 95% level of protection in ANZG, 2018	Does not exceed 95% level of protection in ANZG, 2018	Kaitiakitanga Ecosystem health Mahinga kai	<ul style="list-style-type: none"> Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Nitrogen in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Nitrate - Nitrogen 0.26	Where nutrient levels exceed trigger values there is an improving trend by 2040	<Kotahi Review>	Trigger values Nitrate-Nitrogen 0.05 Total Nitrogen 0.11	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Ecosystem health Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				Total Nitrogen: 0.45		<Kotahi Review>			
Phosphorus in water (mg/L)	Annual median of no less than 8 samples in a 12-month period	Ahuriri Estuary	Ahuriri Estuary on Woolshed Road	Dissolved Reactive Phosphorus 0.02	Where nutrient levels exceed trigger values there is an improving trend by 2040	<Kotahi Review>	Trigger Values Dissolved Reactive Phosphorus 0.015 Total Phosphorus 0.05	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Ecosystem health Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
				Total Phosphorus 0.04		<Kotahi Review>			
Nuisance macroalgae cover	TBC	Waitangi Estuary	TBC	No/Insufficient data	<Kotahi Review>	<Kotahi Review>		Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Uu Mauri Recreation Natural Character Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Water column Chlorophyll a (mg/L)	Annual median of no less than 8 samples in a 12-month period	Waitangi Estuary	Waitangi Estuary	0.001	Maintain	Maintain	Low risk: (0.004 mg/L) The risk of excessive phytoplankton growth is low	Kaitiakitanga Ecosystem health	<ul style="list-style-type: none"> Mauri Mahinga kai, taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Sediment Mud content (% composition)	Spatial analysis of estuary grain size	Waitangi Estuary	TBC	TBC	The areal extent of soft mud ² substrate in the estuary should not increase from its current extent	The areal extent of soft mud ² substrate in the estuary should not increase from its current extent	No increase in areas where sediment stress may be impacting the health of the estuary	Kaitiakitanga Ecosystem health Mahinga kai	<ul style="list-style-type: none"> Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana Natural character

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ATTRIBUTE	MEASURING SYSTEM	WATER QUALITY AREA	MONITORING SITE	BASELINE ATTRIBUTE STATE	TARGET ¹ ATTRIBUTE STATE 2040	OUTCOME LONG TERM ¹ TARGET ATTRIBUTE STATE	OUTCOME DESCRIPTION	CRITICAL VALUE	CRITICAL VALUE ALSO PROVIDES FOR
Toxicants in sediments (mg/kg)	Annual median of site replicates at Estuarine Ecology Monitoring Sites	Waitangi Estuary	Estuarine Ecology Monitoring Sites	TBC	Does not exceed interim sediment quality guidelines (ISQG) - High	Does not exceed interim sediment quality guidelines (ISQG) - Low	Rare adverse effects: (≤ ISQG – Low) Occasional adverse effects: (≤ ISQG – High) Frequent adverse effects: (>ISQG - High)	Kaitiakitanga Ecosystem health Mahinga Kai	<ul style="list-style-type: none"> Mauri Taonga/tohu species, indigenous taonga/tohu species habitat and spawning, ahu moana
Notes 1. The 2040 target and long term outcome are applicable to all estuary waters and are monitored at the specified sites. 2. Soft mud refers to the proportion of the substrate that is less than 63 microns.									

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Schedule 27: Freshwater Quality Objectives

Schedule 27 is deleted – 210.4, 120.17, 120.104, 123.127, 126.32, 127.14, 120.146, 120.150, 123.123, 210.113, 194.102, 120.147, 123.22, 210.118, 123.134, 120.161, 123.125, 120.149, 132.108, 132.172, 210.112, 210.113, 210.117, 132.156, 132.108 132.66, 132.4, 132.19, 123.126, 194.101, 210.114, 58.36, 120.152, 210.115

Schedule 28: Priority Catchments

Refer to Rule TANK 1.

This schedule sets out the thresholds used to determine the list of priority catchments or places. The priority catchments identified using these thresholds are shown on the Schedule 28 Planning Maps 1 – 4 and Schedule 35 Planning Maps 1 - 2. The priority catchments are determined according to the following water quality attributes and risks that are where there is;

1. Risk of sediment loss in is higher than 500t/km²/year (as modelled by SedNet)
2. SOE monitoring shows the freshwater objectives for nNitrogen concentrations for water quality based on SOE data monitoring and modelling^{180.68} are not being met
3. Risk of significant contribution of high nitrogen loads to the estuary^{180.76} Probability that dissolved nutrients do not meet freshwater objectives for nitrogen (as modelled by SOURCE and using Overseer data)
4. The level of dissolved oxygen (specific for lowland streams with slope <2 m/km)
5. Risk of significant contribution to high phosphorous levels^{180.68}
6. A Source water areas Protection Zones for municipal drinking water supply.

The priority order assigned in relation to each of these water quality issues is as follows;

	High priority	Medium priority	Low priority	Long term
Sediment yield (SedNet)	>500 t/km ² /year	350 - 500 t/km ² /year	250 - 350 t/km ² /year	<250 t/km ² /year
TN concentrations (all flows, median)^{180.68}	> 2 mg/L	> 1.2 mg/L	> 1 mg/L	<1 mg/L
TN yield (modelled) (all flows, average per sub-catchment)	> 10kg/ha/yr	> 3.5 kg/ha/yr	> 1.2 kg/ha/yr	≤1.2 kg/ha/yr
Dissolved Oxygen levels Class A streams (and /or where stream gradient <2m/km)	anoxia (periods of little or no oxygen)	< 3 mg/L daily minimum and/or DO saturation <30%	< 4mg/L daily minimum and/or DO saturation < 40%	< 6 mg/L daily minimum and/or DO saturation <60%
TP yield (modelled) (all flows, average per catchment)^{180.68}	>1.2kg/ha/yr	>0.6kg/ha/yr	>0.3kg/ha/yr	<0.3kg/ha/yr
<u>Drinking Water Supply</u>	<u>Production land in SPZs (See Planning Maps 1 and 2 for Schedule 35)</u>			

The Planning Maps 1 – 4 and Schedule 35 Planning Maps 1 – 2 showing the spatial extent and location of the priority areas are available as part of this plan change but are not included as planning maps. This is because the thresholds for priority will remain fixed, however the status of catchments will change over time as work is completed within the catchment.

Farm Environment and Catchment Collective Plans and Industry Programmes are to be completed in the following priority order; High, Medium and Low Priority over the first 3, 6 and 9 years respectively following <the operative date> of the plan (although work can commence at any time and farmers will be encouraged to start with their own programme as soon as possible).

207.47, 210.138, 135.61 127.16, 123.146, 120.22, 120.92, 120.109, 120.118, 116.7

Schedule 29: Land Use Change

If the use of production land on farm properties or farming enterprises in the TANK catchments changes over more than 10 hectares per property farm requires a resource consent according to Rules 5 and 6 if the land use change is from a lower level of leaching to a higher level of leaching as shown in Table 1, information may be requested from the landowner or land manager to demonstrate or model the annual Nitrogen loss (using Overseer or SPASMO or alternative model approved by HBRC) in order to;

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

Calculation of changes to the annual average^{185.64 et al} nitrogen loss on a whole of property or whole of farming enterprise basis will be based on the Nitrogen leaching loss levels the data in Table 1 unless more accurate model data specific for the property in question is available.

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

Where the land use activity involves arable or vegetable cropping including grazing on a rotational basis, and including on lease land at variable locations, production land use change does not include a change in the location of an arable and/or vegetable cropping rotation, where the area of the rotation is equivalent, (plus 10 ha) of to the maximum rotation area in the 5 years prior to the plan notification.^{50.11,12, 54.68 et al, 129.37, 131.9 142.28 et al}

Table 1: Land Use Types and Nitrogen Leaching risk

Level	Land use activity or type*	Incorporating	N Leaching range / risk
1.	Any change from un-irrigated to Irrigated land ^{185.64 et al}	Any irrigation	High leaching Variable! ^{185.64 et al}
2	Commercial Vegetable Growing	Vegetable growing-for human consumption	High leaching
3	Winter Forage Cropping (Intensive winter grazing)	Forage crops for animal feed e.g brassica crops Intensive winter grazing as defined in NES for Freshwater 2020	
4	Dairy or arable	Dairy cows, Arable as defined in RMA	
5	Sheep and/or beef	Sheep, beef, deer, goats,	
6	Horticulture	As defined in the RMA The use of land to grow food or beverage crops for human consumption (other than arable crops), or flowers for commercial supply.	
7	Other/ -Forestry	Scrub/Forestry	Low leaching

Note 1; Changes to irrigation may not result in higher N loss, but any change to irrigation is subject to assessment

^{50.11,12, 54.68 et al, 129.37, 131.9 142.28}

table 1: Nitrogen Losses for Production Land

Land Use Type	TN Load (kg/ha/y) (Overseer)	TN Load (kg/ha/y) SPASMO		
		Esk/Omahu/Pakipaki Soils	Average Other soils	Farndon/Omarunui/Te Awa soils
Beef	20			
Dairy	32			
Scrub or tree cover	3			
Mixed sheep, beef and deer	13			

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Kiwifruit		9	13	23
Pipfruit		9	15	24
Summer fruit		9	14	23
Grapes		4	9	18
Winter forage crops				
Arable/vegetable rotation				

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

	Annual Nitrogen loss change threshold (kg/y)		
	Esk/Omahu/Pakipaki Soil types	Other soils	Farndon/Omarunui/Te Awa soil types
Unirrigated land uses	290		
Irrigated land uses	80	240	430

Change between non-irrigated and irrigated land uses will be subject to a maximum permitted change of 290 (kg/y) using SPASMO to calculate the change.

Schedule 30: Landowner-Catchment Collective, Industry Programme and Freshwater Farm Environment Plan 8.25, 50.1, 85.8, 216.20, 231.2, 180.70, 210.140 and 216.22 et al

The TANK Plan provides for an **Industry Programme Group** or a **Catchment Collective** to work ~~collectively~~ on behalf of their members to meet local water quality and environmental objectives.

Alternatively, landowners may also prepare an individual **Freshwater Farm Environment Plan**.

This schedule sets out the requirements for:

- ~~the establishment of a TANK Industry Group or~~ TANK Catchment Collective, their operation and the preparation of their ~~environment-freshwater-~~ plan in order for them to be approved by the Hawke's Bay Regional Council.
- ~~It also sets out the requirements for Freshwater Farm Environment Plans.~~
- Industry Programmes.

Heretaunga Plains Water Management Unit

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

Industry Groups and Catchment Collectives

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

Industry Programme or Catchment Collective Programme

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

- ~~The catchment(s)~~
1. ~~the modelled or measured water quality as indicated in Schedule 26, 28 or the Council's SOE reports, or local water quality measured using comparable water quality monitoring methods in the applicable catchment(s)~~
 2. ~~other water quality monitoring may be used as a guide to measure progress towards water quality targets.~~
 3. ~~the nature of the land and water use activities carried out within that catchment~~
 4. ~~the scale of the effects on water quality or water quantity from the land and water use activities in that catchment.~~

~~The Programme will describe an environmental management strategy relevant to the freshwater water management objectives where the member properties are located. An Industry Programme can be based on existing good agricultural practice industry⁵² programmes, and will in addition need to address local water quality and quantity issues.~~

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

Any TANK ~~Freshwater Plan Programme~~ prepared in accordance with Schedule 30 may include or contribute to other initiatives or objectives (such as in relation to farm production, pest control, biodiversity or other land management issue) as desired by the Catchment Collective or Industry Programme. These aspects are not subject to the Council's approval but may be a means of enabling integrated land and water management for a wider range of management objectives.

Catchment Collectives

A TANK Catchment Collective must meet the requirements set out below.

The properties within a Catchment Collective will contribute water (by overland or groundwater flow) to a waterbody common to all Catchment Collective members. Where a property straddles a catchment, a property owner may choose to belong to both groups, but if joining only one Collective, is required to join the one where the property has the greatest area. Neighbouring groups are encouraged to work collaboratively in these situations.

The relevant catchment in relation to Section A of the Schedule is the catchment of the river or stream common to all of the member properties¹⁸⁰.

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

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Farm Environment Plan

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

Programme Requirements

Section A: Industry Groups and Catchment Collectives Governance and Management

1. Governance and Management

- 1.1 Each Catchment Collective ~~or Industry Group must undertake to carry out the requirements of Sections A and B and must specify in writing the manner in which it will carry this out. This~~ must address the following ~~: Details relating to the~~ governance and management arrangements of the Programme Catchment Collective including:
- How decisions are to be made and how the requirements of Section B will be carried out including obligations by members to carry out the property specific requirements
 - Conditions of membership of the Programme Catchment Collective by individual land managers (the 'Members' who commit to the Catchment Collective Programme), including the circumstances and terms of membership, sanctions or removal from the Collective ~~or Industry Programme~~ including in relation to unreasonable non-performance of actions identified in clause 2 below.
 - The process for assessing performance at an individual property level compared to agreed actions at the catchment scale.

Note 1: the Catchment Collective ~~or Industry Programme~~ may prepare its own terms of reference as well as manage their own decision making processes and administration. This may include appointing a spokesperson or secretary to ensure recording and reporting work is completed as necessary. ~~Note 2: If a membership is lapsed, refused or discontinued, the Council will require the landowner to comply with~~ Rule TANK 1.

Note 2: The Council will support the governance and management of Catchment Collectives through the provision of a conflict resolution service should this be necessary^{197.9}

- 1.2 Information and management systems and processes to ensure:
- Competent and consistent performance in meeting the requirements of this sSchedule
 - Robust data management, including up-to-date registers of Programme Catchment Collective Members
 - Timely provision of suitable quality data and information required under the following clauses to Hawke's Bay Regional Council
 - Conditions of membership of the Programme by individual land managers (the 'Members') who commit to the Programme including provision of information to enable reporting requirements to be met.
- 1.3 A description of the Programme area including:
- locations and maps,
 - land uses,
 - locations of ;
 - drains (including subsurface drains), streams, rivers, wetlands and other water bodies,
 - any Source Protection Zone or Extent for any Registered Drinking Water Supply that any properties in the programme area are located in, plus the contact details of the water supply manager (Note – Maps included with this plan show the locations of the SPZs and Extent for any Registered Drinking Water Supplies. Contact information for the supply manager is available on the Council website),
 - activities at particular risk of nutrient loss,
 - property boundaries,
 - up-to-date details about ownership and property managers,
 - up-to-date contact details of individual land managers and landowners within the Programme (the 'Members').

Section B: Catchment Collective Freshwater Plan Requirements

This section sets out the requirements for the Freshwater environment pPlan for each Catchment Collective ~~or Industry Programme~~

The Programme summary report will be made publicly available through the Council website.

2. Environmental Outcomes

- 2.1 The Plan must include statements about the;
- specified target attribute states ~~water quality outcomes~~ in Schedule 26 of this Plan relevant to the location of

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Members' properties

- b) measures or practices needed to minimise and mitigating the cumulative environmental effects of land use that will enable the specified water quality objectives to be met.
- c) timeframes for when each of the actions or mitigations at a property or catchment scale are to be implemented and which are consistent with ~~meeting the timeframes specified for relevant water quality objectives and milestones specified in the TANK Pol 27, Plan~~

2.2 The Plan must address where appropriate;

- a) managing contaminant losses (especially sediment, nutrients and bacteria) to waterways including efficient use of nutrients and good management practice including when carrying out land disturbance activities and especially in relation to management of critical contaminant source areas.
- b) where water quality does not meet 2040 target attribute states standards in Schedule 26, identifying how there will be reductions in losses that contribute to meeting the specified water quality including, where appropriate, reference to:
 - (i) in relation to industry specified benchmarks or good practice for nitrogen and phosphorus management loss;
 - (ii) LUC (Land Use Capability) and soil type;
 - (iii) Olsen P levels in soil;
 - (iv) Stock management including rates and densities of different classes of stock;
 - (v) Application of fertilisers;
 - (vi) Application of collected animal effluent;
 - (vii) Cultivation, soil disturbance or vegetation clearance activities
- c) Management of riparian margins, including to meet the outcomes specified in TANK Pol 11.
- d) ~~and m~~ Maintaining or improving the physical and biological condition of soils in a manner consistent with TANK Pol 20 and RRMP Rule 7 in order to avoid, remedy or mitigate problems arising from;
 - (i) Loss of topsoil by wind or water erosion;
 - (ii) Movement of soils and contaminants into waterways;
 - (iii) Damage to soil structure and health;
 - (iv) Mass movements of soil and soil loss from hill slop erosion^{180.68};
- e) wetland management including to meet the outcomes specified in TANK Pol 14 and 15;
- f) management of animal effluent to avoid contamination of ground and surface waters;
- g) measures required to reduce risk of contamination of the source water for any Registered Drinking Water Supply;
- h) management of stock, including in relation to river or stream crossings and exclusion from waterways in a manner that complies with the Resource Management (Stock Exclusion) Regulations (2020) ~~is consistent with Policy 22 and Rules TANK 1 or 3;~~
- i) **in the Karamū and Lake Poukawa Catchments** ; the identification of opportunities to provide shading of the adjacent waterway or improvements to riparian margin values as specified in TANK Pol 2 and 11.

2.3 The Plan must include measures to address **Nutrient Management** in any catchment or programme area where 2040 target attribute states water quality objectives for nitrogen concentrations as detailed in Schedule 26 are not being met, including;

- a) development of an inventory of the current annual average nitrogen loss rate (kg/ha/year) for every property as determined by application of Overseer (or an alternative nutrient budget loss model approved by the Hawke's Bay Regional Council) and a target nitrogen loss rate that demonstrates industry good practice by a suitably qualified independent practitioner;
- b) a description of any mitigation measures identified as necessary to meet target attribute states relevant to water quality objectives those properties or within the relevant catchment including nutrient budgets using Overseer (or similar alternative nutrient budget model approved by the Hawke's Bay Regional Council);
- c) annual recording and reporting of nutrient input and export data, including annual nitrogen loss rates.

2.4 A Catchment Collective member may adopt or integrate a plan or documentation developed as part of an Industry Good Agricultural Practice programme, provided that the Plan or documentation is consistent with the requirements of the Catchment Collective Programme

3. Approval

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- 3.1 The Catchment Collective ~~Freshwater Pplan~~ ~~or Industry Programme~~ will be submitted for approval by the HBRC no later than by the end of the relevant year specified for that catchment in Schedule 28. In making decisions to approve the ~~Plan programme~~ the Council will take into account;
- whether the requirements of this Schedule are met;
 - whether the programme is consistent with the policies, water quality objectives and milestones that are relevant for that Catchment Collective ~~or Industry Programme~~
 - whether the ~~Plan programme~~ was appropriately informed by person(s) with the necessary ~~professional qualifications-knowledge~~ to make assessments about the contaminant loss risk and mitigation measures
 - whether the governance and management systems are in place to enable the implementation of the ~~Plan programme~~
- 3.2 Where approval is not given, it means the requirements of Rule TANK 1 are not able to be met and land use is therefore subject to either Rule TANK 1 (b)2 or Rule TANK 2.

4. Information Requirements

- 4.1 The Catchment Collective ~~or Industry programme~~ must prepare a statement of the data and information that will be collected in order to monitor implementation and report to Council.
- 4.2 Information will be required where appropriate about:
- changes to programme area and membership;
 - nature and significance of any land use change in accordance with TANK Pol 22 and Rule TANK 5 or 6 and based on land uses at 2 May 2020.
 - the results of any environmental monitoring carried out by the Catchment Collective ~~or Industry Programme~~; consequential
 - the mitigation measures or practices carried out to reduce contaminant loss (consistent with what is industry ~~agreed~~ good management practice) that will be adopted by the property owners or managers and as detailed in clause 2.1;
 - data, which may be aggregated across a catchment, about nitrogen loss and any changes in losses in respect of clause 2.3.

5. Reporting and Review

- 5.1 A summary report on the implementation of the ~~Freshwater Plan Programme~~ shall be submitted annually to the Hawke's Bay Regional Council or less frequently as determined by Council if all agreed mitigations have been completed, 2040 target attribute states in Schedule 26 water quality objectives are being met and there is no land use change exceeding 10ha of the programme area.
- 5.2 The report will be supplied in the format specified by Council.
- 5.3 The report will include;
- information collected under section 4;
 - any amendments to the programmed mitigation measures plus any changes made to them and reasons for them (including any adverse events such as severe weather, earthquakes etc);
 - issues or matters that require input or direction from the Council, including the management of activities outside the Catchment Collective which may be adversely affecting the achievement of the of programme objectives, including identification of additional information/support from HBRC that would assist in the achievement of the objectives of the programme.
- 5.4 Every 5 years the annual report shall provide information about;
- adoption of any new mitigation or good practice measures identified by industry;
 - identification of opportunities for improvements to the programme including, where necessary, amending performance standards, and in relation to nutrient management in clause 2.3.

6. Auditing

- 6.1 Auditing will be carried out as described in Section D.

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Section B: Freshwater Farm Plans

If a property is not subject to a TANK Catchment Collective prepared under Section **AB** or a TANK Industry Programme prepared under Schedule **BC** of this Schedule a Farm Environment Plan must be prepared in accordance with Section **BE**.

Section C: Freshwater Farm Plan Requirements

1. Requirements for Freshwater Farm Plans

1.1 A Farm Environment Plan must;

- a) be submitted to the Council to ensure it complies with the requirements of this Schedule and Schedule 28.
- b) contain the following information;
 - (i) physical address;
 - (ii) details about ownership and property managers including contact details for the person responsible for the implementation of the Plan.
- c) be accompanied by maps or aerial photograph at a scale to clearly show;
 - (i) property boundaries;
 - (ii) locations or activities likely to result in contaminant loss or at risk from contaminant loss including;
 - i. areas at risk of sediment loss;
 - ii. the location of drains (including subsurface drains), streams, rivers, wetlands and other water bodies;
 - iii. the location of any Source Protection Zone or Extent for any Registered Drinking Water Supply that any properties in the programme area are located in, plus the contact details of the water supply manager (*Note Maps included with this plan show the locations of the SPZs and Extents for any Registered Drinking Water Supplies. Contact information for the water supply manager is available on the Council website.*
 - iv. activities at particular risk of nutrient loss;
 - v. contaminant discharge activities.
- d) meet the requirements of Clauses 2 and 4 in Section **AB** of this Schedule as applicable for the property, its location and the land use activities being carried out.

2. Reporting and Review

- 2.1 ~~The A Freshwater Farm Environment Plan report~~ will be submitted to the HBRC no later than by the end of the relevant year specified in Schedule 28 for the catchment(s) the property is located in and an annual report submitted thereafter or less frequently as determined by Council if all agreed mitigations have been completed and target attribute states are being met.^{107.3}
- 2.2 The report will be in the format specified by Council.
- 2.3 The report will include:
 - a) information collected under Clause 4.2 (a) (b) (d) and (e) of Section **AB**
 - b) any amendments to the programmed mitigation measures plus any changes made to them and reasons for them (including any adverse events such as severe weather, earthquakes etc)
- 2.4 Every 5 years the annual report shall provide information about;
 - a) adoption of any new mitigation or good practice measures identified by industry,
 - b) identification of opportunities for improvements to the programme including, where necessary, amending performance standards, and in relation to nutrient management in clause 2.3 of Section **AB**.

3. Auditing

- 3.1 Auditing will be carried out as described in Section D.

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Section C: Industry Programmes

The purpose of this schedule is to set out the minimum standards for Industry Programmes.

Applications for approval of an Industry Programme shall be lodged with the Hawke's Bay Regional Council, and shall include information that demonstrates how the following requirements are met. The Hawke's Bay Regional Council may request further information or clarification on the application as it sees fit.

Approval will be at the discretion of the Chief Executive of the Hawke's Bay Regional Council subject to the Chief Executive being satisfied that the scheme will meet the standards set out below.

1. Governance and management

1.1 Industry Programmes must include:

- a) A description of the governance arrangements of the programme
- b) The contractual arrangements between the programme and its members;
- c) A description of the process for gaining and ceasing membership;
- d) A description of the programme area, including
 - (i) land uses,
 - (ii) key environmental issues and measures to address them,
 - (iii) property boundaries and
 - (iv) ownership details of members' properties;
- e) A procedure for keeping records including up-to-date registers of programme members and provision of data to the HBRC
- f) Details including procedures agreed with the HBRC about how requirements of this Section are to be met.

2. Preparation of Freshwater Farm Plans

2.1 Industry Programmes must include:

- a) A statement of the programme's capability and capacity to deliver certified ~~for preparing and certifying that~~ Freshwater Farm Plans meet the requirements of this Schedule, including;
 - (i) The requirements of Section A2 of this Schedule
 - (ii) ~~The qualifications and experience of any personnel employed by or otherwise contracted to the programme to prepare or certify Freshwater Farm Plans;~~

3. Implementation of Freshwater Farm Plans

3.1 Industry Programmes must include:

- a) A statement of the programme's capability and capacity for monitoring and assessing the implementation of Freshwater Farm Plans, including the qualifications and experience of any personnel employed by or otherwise contracted to the programme to monitor or assess implementation of Freshwater Farm Plans;
- b) A description of the expectations and agreements around landowner and property record-keeping;
- c) A strategy for identifying and managing poor performance in implementing Freshwater Farm Plans.

4. Information and Reporting consequential

4.1 The Industry Programme must prepare a statement of the data and information that will be collected in order to monitor implementation and report to Council.

4.2 Information will be required where appropriate about:

- a) changes to programme area and membership;
- b) the results of any environmental monitoring carried out by the Industry Programme;
- c) the mitigation measures or practices carried out to reduce contaminant loss (consistent with what is industry good management practice) that will be adopted by the property owners or managers;
- d) data, which may be aggregated across member properties, about nitrogen loss and any changes in losses in

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respect of Section A clause 2.3.

4.3 A summary report on the implementation of the Industry Programme shall be submitted annually to the Hawke's Bay Regional Council or less frequently as determined by Council if all agreed mitigations have been completed and target attribute states are being met.

4.4 The report will be supplied in the format specified by Council in consultation with the relevant industry group

5. Audit

5.1 Industry Programmes must include a description of an ~~annual~~ audit process to be conducted by an independent body, including:

- a) A process for assessing the ~~performance-accreditation~~ of the programme and any personnel employed by or otherwise contracted to the scheme to prepare, certify, and audit the implementation of Farm Environment Plans;
- b) A process for auditing FW-FPs
- c) A statement of how audit results will be shared with the programme's members and the wider community;
- d) A summary audit report must be submitted to the Hawke's Bay Regional Council annually.

Section D Council Auditing and Reporting

1. The HBRC will;
 - a) Publicly report on the implementation of requirements for TANK Freshwater Farm Plans and Catchment Collective Plans ;
 - b) Undertake audits of TANK ~~Industry or~~ Catchment Collective Programmes including on member properties in relation to individual and programme implementation of programmed works, adoption of identified good management practices, including nutrient management budgets where required.

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

- ~~2. The HBRC will;~~
 - ~~a) Publicly report on the implementation of TANK Freshwater Farm Environment Plan requirements~~
 - ~~b) Undertake audits of properties in relation the Freshwater Farm Environment Plan implementation of programmed works, adoption of identified good management practices, including nutrient management budgets where required.~~

Appendix 2B – Recommended changes to Proposed Plan Change 9

Advice Note:

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

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

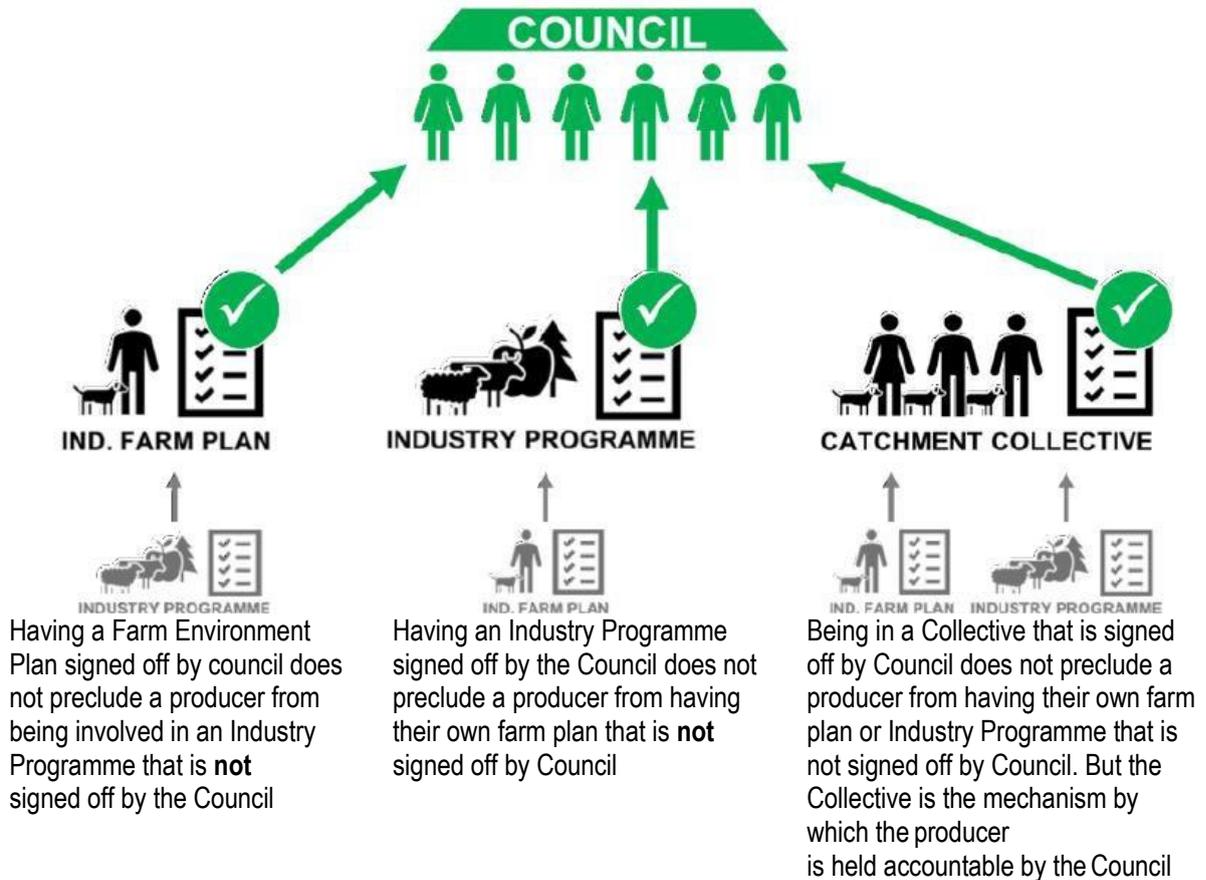


Diagram is from TANK plan change: Barriers and risks to the adoption of proposed mechanisms to co-ordinate management action June 2018 Report by: Justin Connolly Director, Deliberate

Schedule 31: Flows, Levels and Allocation Limits

Minimum and Trigger Flows and Allocation Limits

Refer to Rules TANK 9-11. This Schedule specifies the amount of water that may be authorised for abstraction from the specified water quantity areas management units and the flows at which water abstraction is subject to restrictions or requirements.

The minimum flow is the flow at which surface water and Zone 1 groundwater takes must cease where there is no appropriate stream flow maintenance scheme, or a water user does not participate in a stream flow maintenance scheme.

The flow maintenance trigger is the flow which stream flow maintenance schemes must maintain for participating water users to continue taking water. ^{123.149}

The allocation limits do not apply to water abstraction that is enabled by the release of water ~~from water~~ taken at times of high flow and stored for later release (~~refer to Schedule 32~~). ^{123.149, 210.141}

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

Water Management Units (quantity) Quantity areas and includes any tributaries of the named river	Water bodies	Minimum flow/flow maintenance Flow management site	Minimum Flow (litres/second)	Flow maintenance trigger (litres/second)	Allocation limit (litres/second for surface water and zone 1 and ³ /per year for groundwater)
Ahuriri	All surface water	n/a	n/a	n/a	Existing use only ¹
	All groundwater	n/a	n/a	n/a	Existing use only ¹
Karamū/ Clive River	Awanui Kawerawera-Paritua	The Flume	120	120	Total not to exceed 30 l/s
		Pakipaki		75	
	Irongate	Clarks Weir ²	100	100	
	Louisa Stream	Te Aute Rd	30	30	
	Mangateretere Stream	Napier Rd	100	100	
	Karamū River	Floodgates	1100	1100	
	Raupare Stream	Ormond Rd	300	300	70 l/sec
	Poukawa incl Lake Poukawa Groundwater	n/a	n/a	n/a	Existing use only ¹
	Poukawa incl Lake Poukawa Surface water	At Douglas Rd ²	20	n/a	Existing use only ¹
Ngaruroro River s/w and g/w	Maraekakaho River	Tait Rd	109	n/a	36 l/sec
	Tūtaekurī -Waimate	Goods Bridge	1200	n/a	607 l/sec
	Ngaruroro River (surface and Zone 1)	Fernhill ²	2400		1300 l/sec
	Ngaruroro Groundwater	N/a	n/a	n/a	Existing use only ¹
Tūtaekurī River s/w and g/w	Mangatutu Stream	Puketapu	3800		120 l/sec
	Mangaone River	Puketapu	2500		140 l/sec
	Tūtaekurī (surface plus Zone1)	Puketapu	2500		1140 l/sec
	Tūtaekurī groundwater	n/a	n/a		Existing use only ¹

Appendix 2B – Recommended changes to Proposed Plan Change 9

Heretaunga Plains Groundwater Management Unit Quantity Area	Heretaunga Plains groundwater	n/a	n/a		Existing use only ¹
<p>Note 1; Allocation limit is the reflects total amount allocated to existing consents that were granted prior to 2 May 2020 or a lesser amount as relevant where water is allocated subject to aActual and rReasonable use for takes in the Heretaunga Plains Water Management Unit.</p> <p>Note 2; The location of the Clarke's Weir monitoring site may be changed to provide better representation of sub-catchment flows.^{180.71}</p>					

Schedule 32: High Flow Allocation

Refer to Rules TANK 13-16. This Schedule specifies the amount of water that may be authorised for abstraction from the specified water management units and the flows at which water abstraction is subject to restrictions or requirements. They apply to water abstraction that is enabled by the damming and release of water taken or dammed at times of high flow and stored for later release.

(a) River Name	(B) Flow Management Site	(C) Flow Trigger	(D) High Flow Allocation	(E) Amount reserved for Māori development	(F) Limits for Damming
Ngaruroro R	Fernhill	20 m ³ /sec	8,000litres per second* This includes; the 2 m ³ /sec allocation allocated in consents existing at 2 May 2020 <ul style="list-style-type: none"> the amount taken from high flow in any tributary of the Ngaruroro the amount specified in column (E). 	1,600 litres per second.	Damming on mainstem of Ngaruroro River is prohibited.
		All Trigger flows above 5000 l/sec	Abstraction of up to 1 m ³ /sec authorised in consents existing as at 2 May 2020. Included in the 1m ³ /sec is abstraction of up to 400l/sec which is solely available to be discharged into the Paritua Stream to provide for stream enhancement.		n/a
		Trigger flows above 2400l/sec	200 l/sec which is solely available to be discharged into the Paritua Stream to provide for stream enhancement.		
Ngaruroro and Tūtaekurī Tributaries		Median flow	The high flow allocation from the tributary is proportional to its contribution to the mainstem. It is part of the total allocation for the mainstem high flow allocation.	20% of any high flow allocation from any tributary.	No change of more than 10% to FRE ₃ in the mainstem of the applicable River. Damming on the mainstem of the Taruarau Omahaki, Mangaone and Mangatutu is prohibited.
Tūtaekurī	Puketapu	8,000 litres per second	2,500 litres per second This includes: <ul style="list-style-type: none"> the amount taken from high flow in any tributary of the Tūtaekurī the amount specified in column (E). 	500 litres per second.	Damming on the mainstem of the Tūtaekurī River is prohibited.

Appendix 2B – Recommended changes to Proposed Plan Change 9

Schedule 33: Water Permit Expiry Dates

Refer to [Policy POL TANK 495^{194.11}](#) and Rules TANK 9 - 11. The Council will consider the following Schedule when determining the duration of any permit to take and use water.

Where appropriate, the duration of the consent will be consistent with the next common expiry date for the relevant water management as shown in this Schedule. If an application is made up to three years before the next due date for the relevant zone, the Council may issue the permit for the following expiry date.

For applications in an area for which no expiry date is specified, the duration of the consent will be a matter for Council's discretion.

Current common expiry date	Management Area	Next expiry dates	
Groundwater (Heretaunga Plains Groundwater Quantity Area-HPWMU)			
2019 + 2018	Poraiti —(Heretaunga Plains WMU)	2033	2047 8
2028 + 2029		2047	2059
2019 + 2018	Ahuriri	2033	2048
2019	Unconfined Aquifer & Unconfined Part Of Twyford	2035	2050
2020	Twyford Confined	2035	2050
2021	St George	2036	2051
2022	Te Mata	2037	2052
2023	Longlands/Pakipaki, Hastings	2038	2053
2024	Haumoana, Whakatu/Clive,	2039	2054
2024	Twyford	2040	2055
2025		2040	2055
2025	Pakowhai, Omarunui,	2040	2055
2026	Moteo	2041	2056
2027	Napier/Meeanee	2042	2057
2028?	Poraiti	-	-
2023	Karamū Catchment	2040	2058
2028		2043	2058
Groundwater (not including Zone 1 or Heretaunga Plains Groundwater Quantity Area)			
2019	Ahuriri	2039	2059
2029		2044	2059
2023	Karamū Catchment	2040	2058
2028		2043	2058
2028?	Tūtaekurī Catchment	2043	2058
2025	Ngaruroro Catchment	2040	2055
Surface Water (including Zone 1 groundwater)			
2023	Karamū (and all tribs except Raupare)	2040	2058
2028		2043	2058
2025	Raupare	2040 4	2055 29
2026	Tūtaekurī-Waimate	2041	2056
2028	Tūtaekurī (Whole Catchment)	2043	2058
2025	Ngaruroro (Whole Catchment)	2040	2055
2019	Ahuriri	2039	2059?
+2028		2043	2059?

Amendments to dates are given scope by 58.40

Schedule 34A: ~~Urban Site Specific~~ Stormwater Management Plan

Refer to Rules TANK 21-23. A ~~Site Stormwater~~ Management Plan (SMP) is required to outline the methods by which the site manager or owner will address the risk posed by usage and storage of contaminants of concern associated with the industrial or retail activity. The SMP will specifically include the following information as a minimum:

1. Name and description of Company and location of site

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

2. Site activities and stores

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

3. Site layout and drainage plan(s)

Written summary and maps and plans. Boundaries, location of proposed activities and location of water features on property (streams, drains, ponds etc.)

4. Site receiving environments

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

5. Identification of risks with the activities on the property and how they will be managed

Descriptions of:

- *Management of contaminants of concern: how the consent holder will ensure contaminants of concern and hazardous substances are not discharged*
- *Methods of protecting and where possible improving receiving water quality environments*
- *Source control: methods of good site management, including contingency measures in event of a spill or hazardous event^{207.66}*

6. Management of stormwater treatment devices

Insert full descriptions of all your stormwater treatment devices and reasoning for use. If you need to install devices but have not yet done so explain here including the timeframe for doing so.

7. Maintenance programme

Written summary of how stormwater devices will be monitored over time.

Schedule 34B: Integrated Catchment Management Plan ^{129.4}

Refer to Rule TANK 21. An application for resource consent for network discharges must include an integrated catchment management plan that includes:

1. A monitoring programme to assess existing stormwater discharge quality and level of impact on receiving water quality standards
2. Identification of the spatial extent of the stormwater network to which the application for consent relates
3. Identification of the priority streams or catchments where stormwater discharges currently result in receiving water quality below the standards specified in Schedule 26
4. A programme of mitigation measures including timeframes and milestones for the enhancement of streams identified in (3)
5. Identification of any industrial or trade sites, that use, store or produce the discharge of any contaminant of concern (as defined in Table 3.1 of Hawke's Bay Waterway Guidelines Industrial Stormwater Design)
6. Identification of sites within catchments that have a high risk of contaminants entering the stormwater network or land where it might enter surface or groundwater, including industrial and trade premises and areas subject to new urban development.
7. For sites identified in (6), a programme to ensure Urban Site Specific Stormwater Management Plans are prepared and implemented so that stormwater quality risks are managed. (Schedule 34A)
8. Identification of areas at risk of flooding, and where levels of service to protect communities from flooding are not being met provide information about how this will be managed.
9. The potential effects of climate change on infrastructure capacity and a description of any planned mitigation measures including the identification of secondary flow paths and the capacity of the receiving environment.
10. Identification of measures to demonstrate how discharges shall not cause scouring or erosion of land or any water course beyond the point of discharge
11. Where the stormwater network (or part thereof) or discharge locations are situated within a Source Protection Zone of a registered drinking water supply, a description of measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or any increase in the risk of unsafe drinking water being provided to persons and communities from the drinking water supply
12. Description of measures to demonstrate how the discharge shall not contain hazardous substances or contaminants (including wastewater) and shall not cause any of the following to occur after reasonable mixing:
 - i. production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - ii. any emission of objectionable odour;
 - iii. Any conspicuous change in colour or visual clarity of the receiving water;
 - iv. any freshwater becoming unsuitable for consumption by farm animals;
 - v. the destruction or degradation of any habitat, mahinga kai, plant or animal in any water body or coastal water.

Schedule 35: Source Protection for Drinking Water Supplies

Refer to Policies 6 - 8 and Rules TANK 2-23 and RRMP Rules 1 – 4, 12 -15, 37, 62, 62B. The location and details of groundwater wells (including water infiltration galleries) and surface water intakes used as the source of a Registered Drinking Water Supply can be found on the Registered Drinking Water Supply Protection Zone map layers on the HBRC website. For the avoidance of doubt, the term “Source Protection Zone” or “SPZ” in this Plan includes provisional SPZs and SPZs defined in accordance with this Schedule.^{207.50}

Source Protection Zones

Existing Registered Drinking Water Supplies that provide drinking water to no fewer than 501 people for not less than 60 days per year will have provisional Source Protection Zones determined according to the provisions of Table 1 until the relevant resource consent requires replacement or until an application for resource consent to amend a Source Protection Zone is made. The maps showing the spatial extent of these areas are shown below on the Schedule 35 Planning Maps 1-2.

Table 1: Method for calculating provisional SPZ

Registered Drinking Water supply	Method for calculating SPZ
Hastings District Council Municipal Supply	Hawkes Bay Regional Council Heretaunga Plains Groundwater Model
Napier City Council Municipal Supply	Analytical Element Model meeting artesian head criterion

Where the holder of a water permit for an existing Registered Drinking Water Supply considers the Source Protection Zone is not adequate for the level of protection required for that supply or where new information significantly amends the modelling output, an application may be made to amend the resource consent conditions of the water permit and establish an amended Source Protection Zone

The dimensions of a Source Protection Zone shall form part of any application for resource consent to take or use water for a new Registered Drinking Water Supply or the replacement of an existing permit for that purpose.

The location and extent of a Source Protection Zone around a Registered Drinking Water Supply are to be determined using appropriate technical guidance provided by any relevant National Environmental Standard, National Policy Statement or technical guidance document endorsed by the Ministry for the Environment using site specific information listed in Table 2 below and according to the minimum requirements for the relevant population in Table 3.^{207.49}

Table 2: Site Specific Information

Site Specific Information
1. the topography, geography and geology of the site;
2. the depth of the well;
3. the construction of the well;
4. pumping rates;
5. the type of aquifer;
6. the rate of flow in the surface waterbody;
7. the types of actual or potential contaminants;
8. the level of treatment that the abstracted water will receive;
9. any potential risk to water quality

Table 3: Methodology for Determining Source Protection

Population served class	Microbial Treatment?	Meets Artesian Head criterion	Method	Uncertainty assessment approach
25 – 100	Yes	Yes or No	Manual	None
	No	Yes	Manual	None
	No	No	Manual	Sensitivity analysis
100-500	Yes	Yes	Manual	None
	Yes	No	Manual	Sensitivity analysis
	No	Yes	Manual	Sensitivity analysis

Appendix 2B – Recommended changes to Proposed Plan Change 9

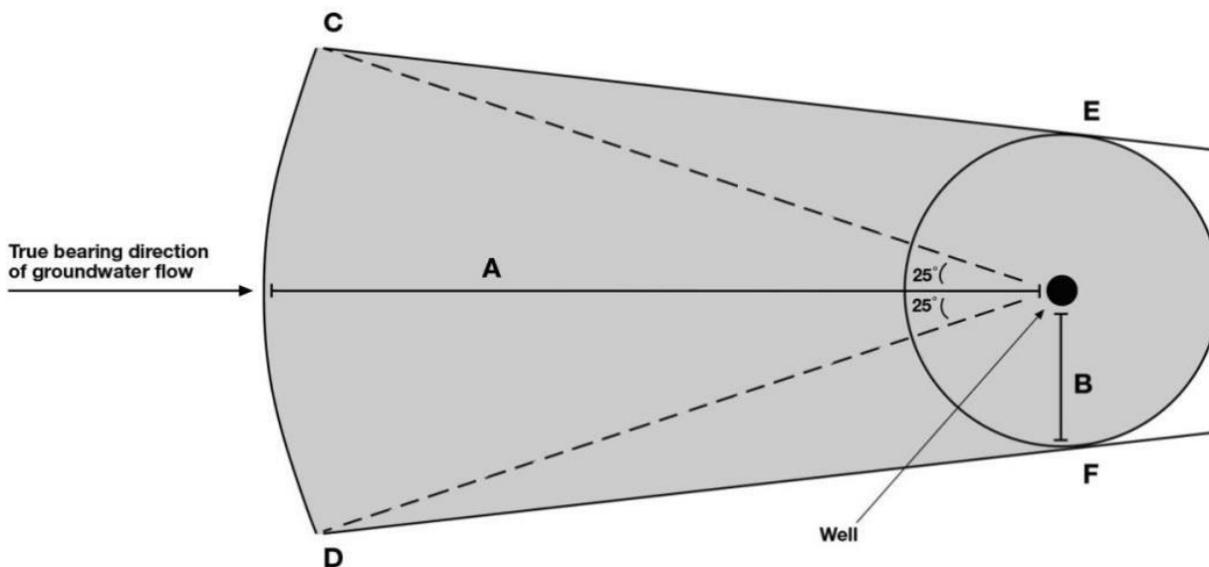
	No	No	Analytical Element Model	Sensitivity analysis
501-5,000	Yes	Yes	Manual	Sensitivity analysis
	Yes	No	Analytical Element Model	Sensitivity analysis
	No	Yes	Analytical Element Model	Sensitivity analysis
	No	No	Analytical Element Model	Stochastic Uncertainty Analysis
>5000	Yes	Yes	Analytical Element Model	Stochastic Uncertainty Analysis
	Yes	No	Numerical Model	Sensitivity analysis
	No	Yes	Numerical Model	Sensitivity analysis
	No	No	Numerical Model	Stochastic Uncertainty Analysis

Source Protection Extent

Method for calculating the area of a provisional Registered Drinking Water Supply Protection Extent.

Existing groundwater Registered Drinking Water Supplies that provide drinking water to between 25 and 500 people for not less than 60 days per year will be protected for the distances specified in Figure 1 and Table 4 below. This provisional protection extent applies until the relevant resource consent requires replacement or until an application to amend the protection extent is made in accordance with the requirements of Tables 2 and 3.

Figure 1 Method for calculating the area of a provisional registered drinking water supply extent



The area of the source protection extent is determined by selecting from the Table 4 below depending on the screen depth (or well depth if no screen depth is recorded) and aquifer type.

Table 4; Provisional Protection Extent

Screen Depth (or well depth if no screen depth is recorded)	Aquifer Type	Protection Distances (m)	
		Up-gradient from bore (A)	Radius around bore
<10m	All	2,000	200
10 - <30 m	Unconfined or semi-confined	1,000	200
	Confined	100	100

Appendix 2B – Recommended changes to Proposed Plan Change 9

30 – 70 m	Unconfined or semi-confined	500	200
	Confined	100	100
>70 m	Unconfined or semi-confined	100	100
	Confined	100	100

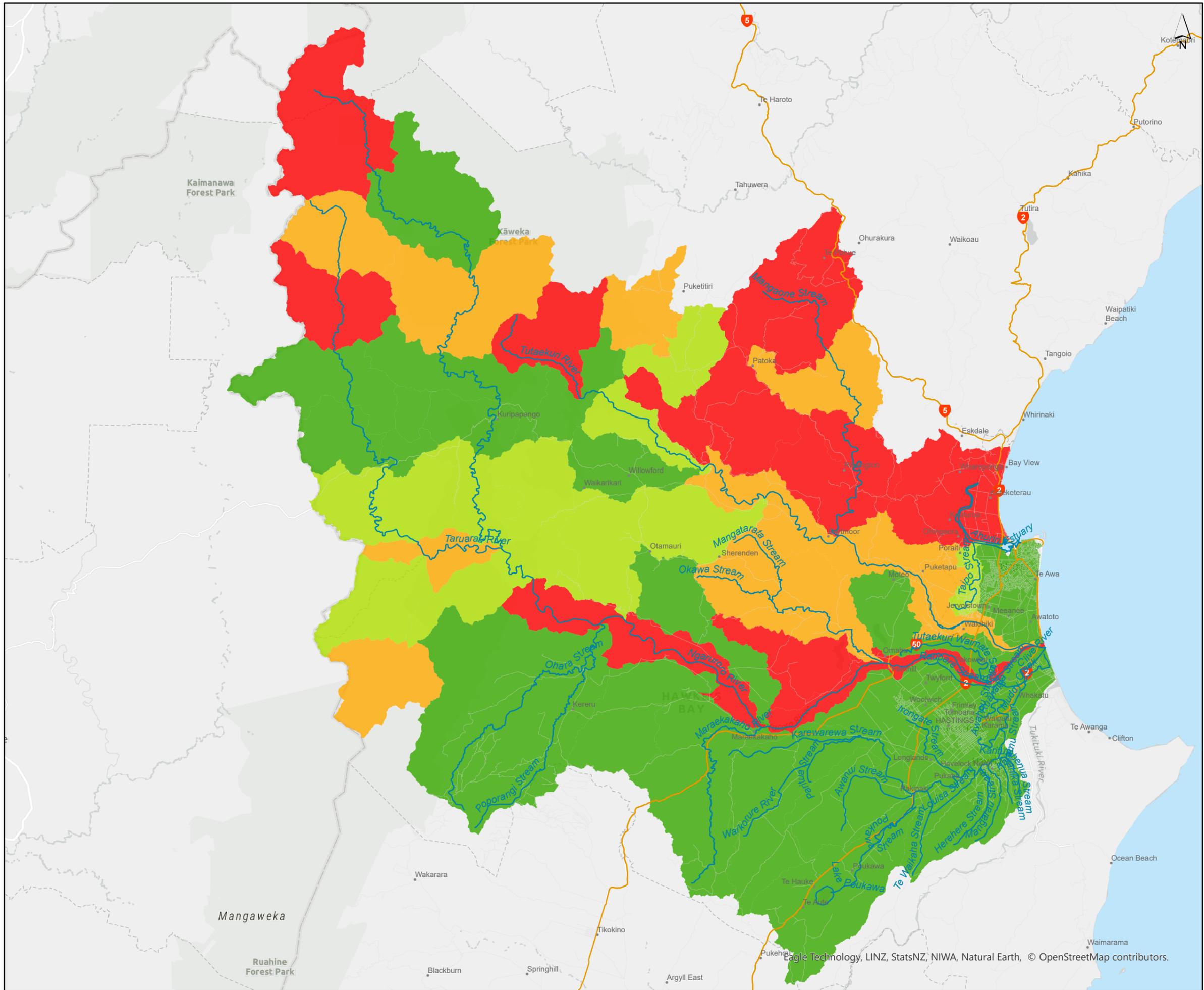
Public Information

All existing and new Registered Drinking Water Supplies and their source protection zones or extent will be added to the Registered Drinking Water Supply Source Protection map layers on Hawkes Bay Regional Council GIS mapping website.

Appendix 2B – Recommended changes to Proposed Plan Change 9

~~**Schedule 36: Heretaunga Plains Stream Flow Maintenance And Habitat Enhancement Scheme**~~

Schedule 36 deleted – consequential amendment to recommended changes to POL TANK 39



TANK
Tūtaekuri, Ahuriri, Ngaruroro, Karamū
Proposed Plan Change 9

**Schedule 28
 Planning Map**

**Map 1
 Priority Catchments
 Sediment Yield**

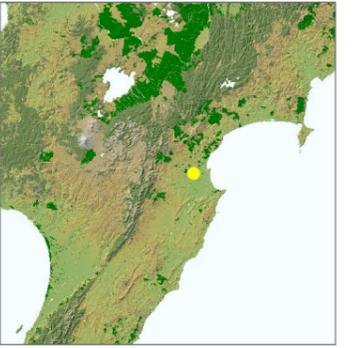
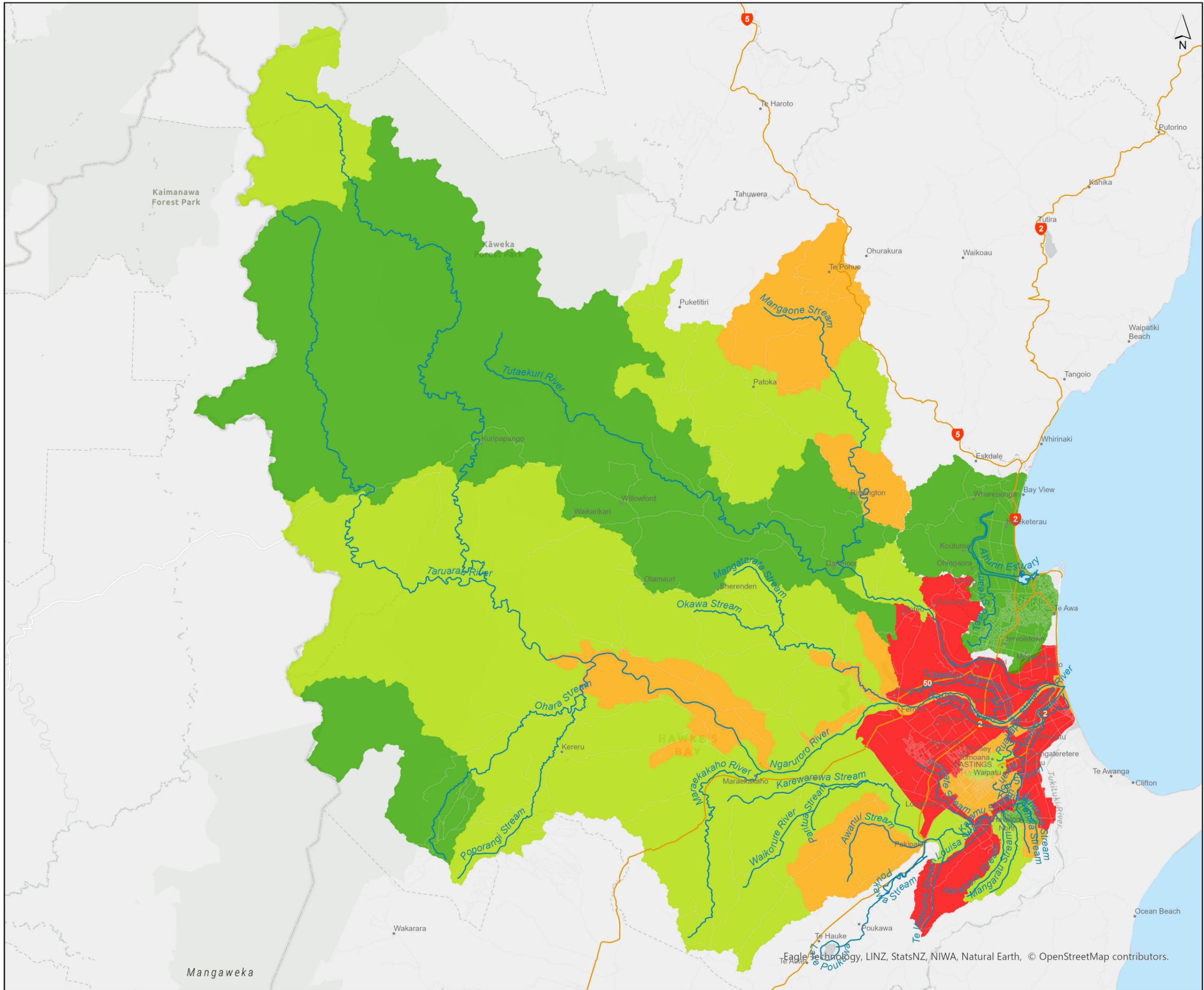
- Long Term Priority
- Low Priority
- Medium Priority
- High Priority



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TANK
Tūtaekurī, Ahuriri, Ngaruroro, Karamū
Proposed Plan Change 9

**Schedule 28
 Planning Map**

**Map 3
 Priority Catchments
 Nitrogen Yield**

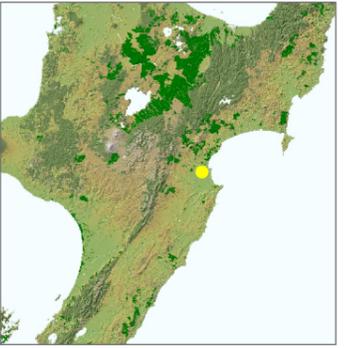
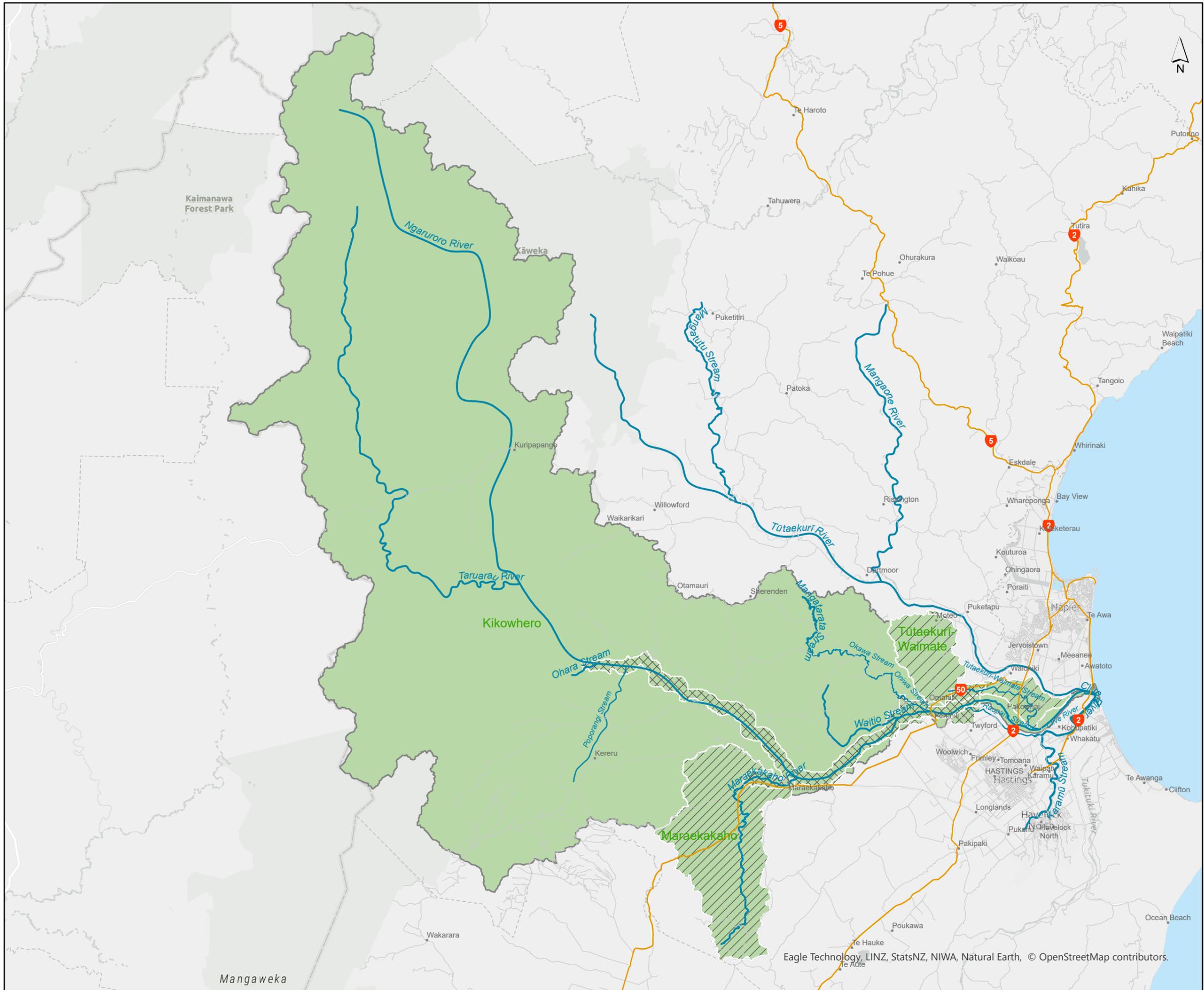
- Long Term Priority
- Low Priority
- Medium Priority
- High Priority



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TANK
Tūtaekuri, Ahuriri, Ngaruroro, Karamū
Proposed Plan Change 9

Schedule 31 C

Ngaruroro
 Water Quantity Area
QUANTITY

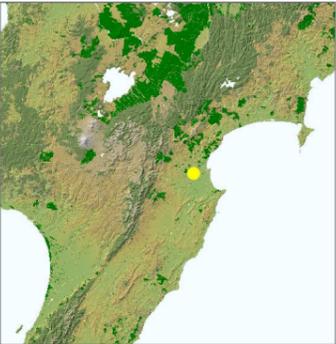
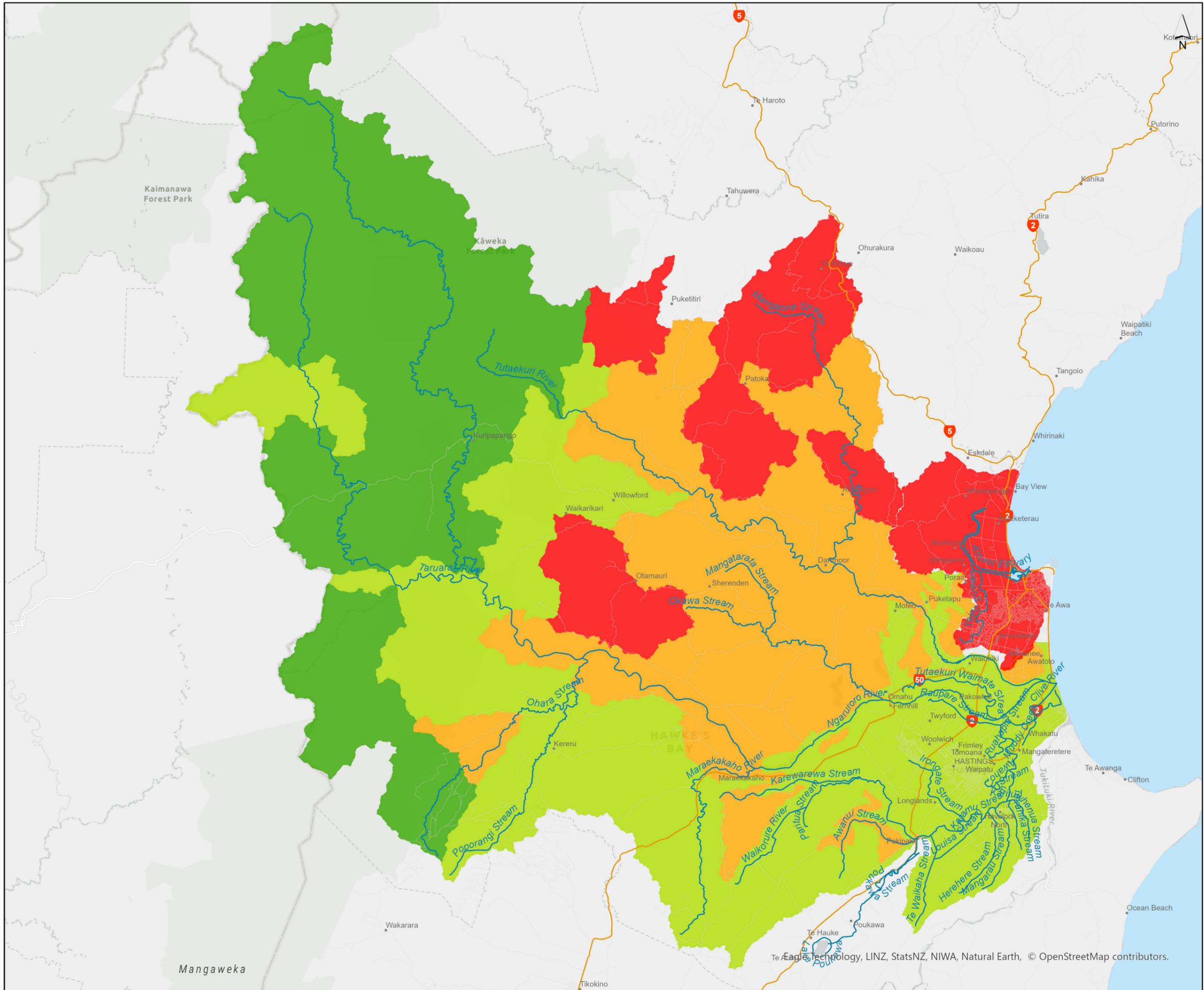
- Ngaruroro Water Quantity Area
- Zone 1 Groundwater
- Water Quantity Sub Area



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TANK
Tūtaekuri, Ahuriri, Ngaruroro, Karamū
Proposed Plan Change 9

**Schedule 28
 Planning Map**

**Map 2
 Priority Catchments
 Phosphorus Yield**

- Long Term Priority
- Low Priority
- Medium Priority
- High Priority



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Appendix 3 Experience and Qualifications of the reporting team

Anne Elizabeth Bradbury

My name is Anne Elizabeth Bradbury. I have been employed by the Hawke's Bay Regional Council for 1 year as a Senior Policy Planner. I have more than 15 years of experience working in planning roles for local authorities in the United Kingdom, Papua New Guinea and New Zealand. I have a broad range of planning experience including processing planning applications and policy development experience relating to development contributions, infrastructure planning, greenfield growth and freshwater. I have appeared before Hearings Panels in the United Kingdom and when I was working at Auckland Council. I began working on PPC9 in August 2020 after PPC9 was put out for notification.

I have a Bachelor of Commerce/Bachelor of Science conjoint degree from the University of Auckland. I have a Post Graduate Diploma in International Development from Massey University.

Mary-Anne Baker

My name is Mary-Anne Baker. I have been employed by the Hawke's Bay Regional Council for 5 years as a Senior Policy Planner. I have more than 25 years of experience working in planning roles for unitary and regional councils and have a broad range of planning experience including for freshwater management as well as soil conservation and erosion control, land use and air quality. Prior to being employed by the Hawke's Bay Regional Council I worked for the Tasman District Council. I am a full member of the NZ Planners Institute. I have a Bachelor of Agricultural Science degree from Massey University.

Ellen Frances Robotham

My name is Ellen Frances Robotham. I hold the qualifications of Post Graduate Certificate in Public Policy and a Bachelor of Arts (Political Science and Development Studies) from Victoria University of Wellington. I am an associate member of the New Zealand Planning Institute and accredited Hearings Commissioner under the Ministry for the Environment's Making Good Decisions programme. I have been employed by the Hawke's Bay Regional Council for almost 3 years as a Policy Planner. Prior to this, I worked as a Policy Advisor at the Ministry of Transport. I began working on PPC9 in March 2020.

Kim Anstey

My name is Kim Sarah Anstey. I hold the qualifications of Masters in Sociology (Environmental) and a Bachelor of Arts (Environmental Studies). I have been working for the Hawke's Bay Regional Council since August 2020 as a policy planner. Prior to this I worked for five years at Napier City Council as a policy planner where I was the reporting officer for Plan Change 12 and undertook a number of bylaw and regulatory policy reviews under the Local Government Act. I am an associate member of the New Zealand Planning Institute. I began working on PPC9 in August 2020 after PPC9 was notified.

Kirsten Jane Tebbutt

My name is Kirsten Jane Tebbutt. I hold the qualifications of Bachelor of Resource Studies from Lincoln University (1994), and a Diploma for Graduates from the University of Otago (1995). I am a full member of the New Zealand Planning Institute, a member of the Resource Management Law Association, and an accredited Hearings Commissioner under the Ministry for the Environment's Making Good Decisions programme. I have worked as a planner since 1995.

I am an Associate with Mitchell Daysh Limited, which practices as a planning and environmental consultancy throughout New Zealand, with offices in Auckland, Hamilton, Napier and Dunedin. I have been employed within the resource management sector for 26 years, and my experience spans local and central and government, and private consultancy. I have worked for Mitchell Daysh (and its predecessor) since mid 2016.