I MUA I TE KOOTI TAIAO O AOTEAROA TĀMAKI MAKAURAU ENV-2020-AKL-

BEFORE THE ENVIRONMENT COURT AUCKLAND REGISTRY

- **UNDER** the Resource Management Act 1991 (**RMA**)
- **IN THE MATTER** of an appeal under Clause 14 of Schedule 1 of the RMA against the decision of the Waikato Regional Council on Proposed Plan Change 1 to the Waikato Regional Plan
- BETWEEN WAIKATO RAUPATU RIVER TRUST, RAUKAWA CHARITABLE TRUST, TE ARAWA RIVER IWI TRUST, TŪWHARETOA MĀORI TRUST BOARD AND MANIAPOTO MĀORI TRUST BOARD ("WAIKATO AND WAIPĀ RIVER IWI")

Appellants

AND WAIKATO REGIONAL COUNCIL

Respondent

NOTICE OF APPEAL ON BEHALF OF THE WAIKATO AND WAIPĀ RIVER IWI AGAINST DECISION ON PLAN CHANGE 1: WAIKATO AND WAIPĀ RIVER CATCHMENTS

8 JULY 2020



M M E Wikaira 027 646 7797 <u>maia@whaialegal.co.nz</u> PO Box 910, WGTN 6140 <u>www.whaialegal.co.nz</u>



J P Ferguson 021 489 478 jamie@kahuilegal.co.nz PO Box 1654, WGTN 6140 www.kahuilegal.co.nz **THE WAIKATO AND WAIPĀ RIVER IWI (Iwi Co-Governors¹)** appeal against part of the 18 March 2020 decision of the Waikato Regional Council (**Council**) in respect of Plan Change 1: Waikato and Waipā River Catchments (**PC1**).

Introduction

- Pursuant to Waikato and Waipā River Settlement Legislation (Settlement Legislation)², the Iwi Co-Governors participated jointly in the development of PC1 as cogovernors and co-managers of the Waikato and Waipā Rivers.
- 2. The Iwi Co-Governors were joint members, together with the Council, of:
 - (a) Te Ropū Hautū, the working party established to provide management oversight of the PC1 project.
 - (b) Healthy Rivers Wai Ora Committee, which decided jointly on the final recommendation to the Council on the content of PC1 to be notified.
- 3. The Iwi Co-Governors also made submissions, and further submissions, both collectively and individually, on PC1.
- 4. The Iwi Co-Governors are not trade competitors for the purposes of section 308D of the Resource Management Act 1991 (**RMA**).
- The Iwi Co-Governors received noticed of the Council's decision (**Decision**) to adopt the recommendations of the PC1 Independent Hearing Panel (**Panel**) on 23 April 2020.

Support for part of the Decision

6. PC1 is underpinned by a unique Treaty settlement context that responds to the acknowledged history of exclusion³ and

 $^{^1}$ This is the term used to describe the Waikato and Waipā River Iwi in the Decision, Vol 1, paragraph 76. We adopt it for consistency.

² Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (**Waikato River Act**), s 46; Ngāti Tūwharetoa, Raukawa and Te Arawa River Iwi Waikato River Act 2010 (**Upper Waikato River Act**), s 48; and Ngā Wai o Maniapoto (Waipā River) Act 2012 (**Waipā River Act**), s 22.

³ Waikato River Act, Preamble (8).

deterioration⁴ that characterised the effect of past Crown actions on:

- (a) the relationship of the Iwi Co-Governors with the Waikato and Waipā Rivers; and
- (b) the rivers themselves.
- 7. The plan change is required to respond to the statutory imperatives, arising from the Settlement Legislation and fulfilling the aspirations of tūpuna (ancestors):
 - (a) To restore and protect the health and wellbeing of the Waikato and Waipā River for future generations.⁵
 - (b) For Te Ture Whaimana o Te Awa o Waikato (the Vision and Strategy for the Waikato River) (**Te Ture Whaimana**) to be the primary direction-setting document for the Waikato River and Waipā Rivers and activities within their catchments affecting the Waikato and Waipā Rivers.⁶
 - (c) To give effect to Te Ture Whaimana (as part of the regional policy statement) in regional and district
- 8. The Iwi Co-Governors agree with, and support, the following PC1 decisions made by the Panel, which are cognisant of the statutory imperatives (**Core Decisions**):
 - (a) The interpretation of the status and effect of Te Ture Whaimana.⁷
 - (b) Increasing the improvement required in the 10-year period after which PC1 becomes operative to 20% of the long-term goals (**20% Improvement**).⁸

⁴ Waikato River Act, Preamble (9).

⁵ Waikato River Act, s 3. Section 3 of the Upper Waikato River Act refers to 'current and future generations'. Section 3 of the Waipā River Act refers to restoring and maintaining 'the quality and integrity of the waters that flow into and form part of the Waipa River for present and future generations and the care and protection of the mana tuku iho o Waiwaia'.

⁶ Waikato River Act, s 5; Upper Waikato River Act, s 5; and Waipā River Act, s 4.

⁷ Decision Vol 1 paras 73, 195, 205 - 206, 232, 243, 254, 258 - 259, 260 - 262, 270.

⁸ Decision Vol 1 paras 18 and 823 – 825; Vol 2 page 10.

- (c) Retaining the long-term water quality goal to be achieved by 2096.⁹
- (d) Signalling resource consents for farming and commercial vegetable production (CVP) should generally not be granted for durations beyond 2035.¹⁰
- (e) Signalling further diffuse discharge reductions and future management regimes (including potentially allocation of diffuse discharges of contaminants) in subsequent plan changes.¹¹
- (f) Retaining the pathway to develop Tangata Whenua Ancestral Lands (**TWAL**), being land returned through Te Tiriti o Waitangi settlement processes or Māori freehold land under the jurisdiction of Te Ture Whenua Maori Act 1993.¹²
- 9. The Iwi Co-Governors' appeal seeks to ensure that, within the ambit of PC1, the operative provisions of the plan change properly reflect, and do not undermine, these Core Decisions.

Parts of Decision appealed against and reasons for appeal

10. Parts of the operative PC1 drafting is unclear, not sufficiently linked to the Panel's Core Decisions, or inconsistent with, and indeed undermines, those decisions. On that basis, there is a material risk that the operative PC1 will not achieve the intent of the Decision

Ground One - Core Decision Intent not reflected

- The Iwi Co-Governors appeal those aspects of PC1 that do not achieve, or that undermine, the Panel's Core Decisions. In particular, as the Decision Version of PC1 is drafted:
 - (a) It is unclear whether the policies, methods and schedules in PC1 will achieve the 20% Improvement:

 $^{^9}$ Decision Vol 1 paras 779 and 823 – 825; Vol 2 page 10, Objectives 1 and 5.

¹⁰ Decision Vol 1 para 1236; Vol 2 Policy 7.

¹¹ Decision Vol 1 para 1282; Vol 2 Policy 10.

 $^{^{12}}$ Decision Vol 1 paras 866 - 885; Vol 2 Objective 4 and Policy 18 and the definition at page 60.

- Policy 1(a) requires a general reduction in the diffuse discharge of nitrogen, phosphorus, sediment and microbial pathogens. These improvements cannot realistically be achieved unless reductions in all four contaminants that PC1 seeks to control are achieved at the whole-of-catchment scale.
- Policy 1(b) and 2(b)(i) require priority focus to reduce identified contaminants in specific subcatchments.
- (iii) Rules 3.11.4.1 and 3.11.4.3 introduce new permitted activity winter stocking rate thresholds which have the effect of:
 - providing for unmanaged intensification of drystock farming resulting in an increase in the diffuse discharge of contaminants.
 - b. increasing the number of drystock properties that only need to comply with the minimum farming standards in Schedule C.
 - c. increasing the number of drystock properties that only need to prepare a standards-based Farm Environment Plan (FEP) in conformance with Schedule D1.
- (iv) Rules 3.11.4.3, 3.11.4.4, 3.11.4.5, 3.11.4.6, 3.11.4.7 and 3.11.4.8 do not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in amended Table 3.11-2.¹³

¹³ Table 3.11-2 prioritises contaminants in each sub-catchment.

- (v) Rule 3.11.4.8 provides for the expansion of up to 3,698ha of new CVP within specific subcatchments resulting in an increase in the diffuse discharge of contaminants.
- (vi) Schedule C, Schedule D1 and Schedule D2 do not provide the necessary guidance to inform the selection of the most effective mitigation measures in relation to each contaminant through the development of FEPs. In particular, the extent of the reduction that is required for the contaminant(s) in Table 3.11-2 is not clear.
- (vii) The effectiveness of the collective outputs of implementing Schedule C, Schedule D1 and Schedule D2 (as notified in the Decision Version of PC1) is unknown.
- (b) Amended Tables 3.11-2 and 3.11-3¹⁴ have no clear linkage to the 20% Improvement in Table 3.11-1, and do not effectively guide the development of FEPs:
 - Table 3.11-1 sets the short-term (10-year) numerical water quality attributes as a 'target' for the purpose of achieving the 20% Improvement.
 - (ii) The principle method to achieve the water quality attributes in Table 3.11-1 is to design mitigation measure on farms to reduce one or more of the four contaminants, through the use of FEPs as per Schedules D1 and D2.
 - (iii) The Decision Version of PC1 is problematic in a number of ways, including:
 - Amended Tables 3.11-2 and 3.11-3 list priority contaminant(s) in each subcatchment. The problem is amended Tables 3.11-2 and 3.11-3, Schedule C, Schedule D1 and Schedule D2 have no

¹⁴ Tables 3.11-3 sets out the sub-catchment application dates.

clear linkage to the whole-of-catchment or sub-catchment scale improvement targets in Table 3.11-1.

b. It is unclear whether the sequencing of when sub-catchments progress through the PC1 regulatory methods has any relationship to Table 3.11-1. Subcatchment prioritisation in Table 3.11-3 needs to optimise achieving the shortterm numerical water quality attribute states in Table 3.11-1.

Ground Two – 'Hold the line' and Tangata Whenua Ancestral Lands policies undermined

- 12. A further critical aspect of the Iwi Co-Governors position at the Council level hearing was support of the 'hold the line' approach of PC1, which made specified land use changes in the catchment that were otherwise expected to result in additional diffuse discharges of the four contaminants, a non-complying activity.¹⁵
- 13. It was in this context that the Iwi Co-Governors advocated for flexible development of TWAL through the pathway provided by notified PC1 Objective 5 and Policy 16. Those provisions, which are retained (with amendment) in the Decision Version of PC1 as Objective 4 and Policy 18, provide policy guidance for non-complying activity applications for use of TWAL. As identified in the Decision, and consistent with Te Ture Whaimana, "... the window provided for iwi development in PC1 is not a wide one."¹⁶ Changes in land use on TWAL remain non-complying. What is different is the policy provision applying to those lands, which allows the potential for these lands to pass through the s 104D RMA gateway test.
- 14. Both the 'hold the line position' and the TWAL provisions have been undermined by new permissive provisions in the Decision Version of PC1, namely:

¹⁵ Notified PC1 Rule 3.11.5.7.

¹⁶ Decision Vol 1 para 872.

- (a) The provision for the expansion of CVP under Policy 3(d) and Rule 3.11.4.8.
- (b) The allowance for intensification of drystock farming up to 18 winter stock units per hectare under Rule 3.11.4.3.

Ground Three – Flawed approach to Commercial Vegetable Production

- 15. By Policy 3 and Rule 3.11.4.8, the Panel has provided for the expansion of CVP as a discretionary activity in some identified sub-catchments (**CVP Expansion Provisions**).
- 16. The Iwi Co-Governors oppose the CVP Expansion Provisions for the following reasons:
 - (a) The Panel's reasoning is wrong at law. Policy 3(d) refers to "recognition of the contribution to people and communities from commercial vegetable production consistent with Te Ture Whaimana o Te Awa o Waikato..." This is a misinterpretation of Te Ture Whaimana. Under clause 1(2) of Te Ture Whaimana abundant life and prosperous communities are identified as the positive consequence of a healthy river. Accordingly, giving effect to Te Ture Whaimana, first and foremost, requires consideration of the impact of CVP on the health and wellbeing of the Waikato and Waipā Rivers.
 - (b) If CVP expansion is provided for, it will detrimentally affect the overall reduction in nitrogen loading and the ability to give effect to Te Ture Whaimana.
 - (c) The Panel is picking winners:
 - (i) The evidence presented for Horticulture NZ predicted an increase in total nitrogen load of 35,775kg. While evidence suggests CVP adoption of best management practice will reduce 19,847kg/N, the short-fall of 15,928kg/N relies on mitigations made by other land uses — particularly dairy — in the catchment.

- (ii) As noted above, development of TWAL requires non-complying activity resource consent. The stark approach that the Panel has taken to TWAL at paragraphs 874 to 876 of the Decision, and the issues of equity that arise as a consequence, demonstrate its favouring of CVP. All or part of any 'buffer' created by the mitigations made by other land uses that was available for TWAL development will be lost.
- (d) The rule is also in error. The evidence presented for Horticulture NZ requested approximately 715ha to allow for growth and land lost to urban development. The Panel's Decision 'constrained' expansion to 13 sub-catchments in the lower Waikato and Waipā.¹⁷ However, that area equates to nearly 3,698ha.

Ground Four – Approach to Tangata Whenua Ancestral Lands policy

- 17. The Panel have made an error both at law, and in reflecting policy intent, in the apparent provision for flexible development of TWAL through Objective 4 (and associated Policy 18).
- 18. At paragraphs 874 to 876 of the Decision, the Panel considered that:

"any such provision [for flexible development of TWAL through policy provisions applying to an otherwise non-complying activity] must **necessarily be subject to Te Ture Whaimana**."

[Emphasis added]

19. The Panel later added that:

"In particular, [provision for iwi development] must be consistent with putting the Waikato and Waipā catchments on a track towards

¹⁷ Decision Vol 1 para 1625; Vol 2 Rule 3.11.4.8.

restoration and protection of their health and wellbeing and keeping them on that track."

[Emphasis added]

20. The result is new Objective 4(b):

Any impediments to the flexibility of the use of tangata whenua ancestral lands and land returned via treaty settlements **are restricted to those necessary to give effect to Te Ture Whaimana o Te Awa o Waikato**.

[Emphasis added]

- 21. The Panel has imposed an express proviso that development must be restricted as necessary to give effect to Te Ture Whaimana – that is in fact implicit in the whole plan as a consequence of the statutory direction of Te Ture Whaimana. Yet the Panel have chosen to expressly record this proviso against TWAL only. The effect is to suggest that:
 - (a) The application of the statutory expectations of Te Ture Whaimana are more pointed when it comes to TWAL than other lands. The irony is that the intention to recognise and seek to affirmatively address the historical and contemporary restrictions placed on TWAL, and ensure PC1 does not provide a further impediment to the use and development of TWAL, is completely undermined. TWAL is now shackled with an express burden that is ostensibly not carried by other classes of land.
 - (b) The pathway afforded TWAL risks actions contrary to Te Ture Whaimana. This is inconsistent with the Panel's own acknowledgement that "...the window provided for iwi development in PC1 is not a wide one. Changes in land use on tangata whenua ancestral lands remain noncomplying."

Ground Five: Non-complying activity status end date

- 22. As notified, Rule 3.11.5.7 (now Rule 3.11.4.9), which requires non-complying land use consent for any change to existing land use as specified in the rule, only had effect until 1 July 2026 (**End Date**). That End Date has been removed in Rule 3.11.4.9. This is the rule to which TWAL is subject.
- 23. The Iwi Co-Governors supported Rule 3.11.5.7 as notified.
- 24. A key factor in its general acceptability was its interim nature, which signalled that the relevant rule, and indeed the regulatory framework, will be replaced. The Section 32 Report stated of Rule 3.11.5.7:¹⁸

It was judged to be unacceptable to lock in current land uses indefinitely without this specified timeframe. Therefore, an important part of the non-complying activity rule for land use change is the end date of 2026.

If the land use rule no longer has effect from the date specified in the rule, then the change of land use will no longer require resource consent. Specifying an 'end date' means that the adverse effects of any land use change after that date are only covered by the remaining rules. The intention is to commit the Waikato Regional Council to establishing new rule(s)."

[Emphasis added]

- 25. Recognising the impracticality of a specified End Date in the context of a plan change development that could take longer to come into effect than first anticipated, the Iwi Co-Governors advocated for retention of an End Date '10 years from the date on which PC1 would become operative'.
- 26. At that time, the Iwi Co-Governors noted that removed of the End Date:
 - (a) removes the trigger to commit the Council to establish new land use plan provision(s); and
 - (b) signals the potential for retention of the noncomplying activity rule (contrary to the stated

¹⁸ Section 32 Report at page 188.

'interim' purpose of notified Rule 3.11.5.7) in a manner that locks in existing land uses.

27. The permissive nature of the CVP Expansion Provisions, and the effect they have of undermining the TWAL provisions, now make the End Date even more critical.

Further Resource Management reasons for appeal

- 28. In addition to the above reasons, the Iwi Co-Governors oppose the provisions listed at paragraph 14 as they:
 - (a) Will not give effect to, and are inconsistent with, Te Ture Whaimana.
 - (b) Are inconsistent with, and undermine, the PC1 Core Decisions.
 - (c) Undermine the TWAL non-complying activity rule pathway; now rendering that pathway comparably ineffective such that it has little utility. This is inconsistent with the policy intent behind the TWAL provisions.
 - (d) Will not promote the sustainable management of natural and physical resources.
 - (e) Will not promote the efficient use and development of natural and physical resources.
 - (f) Are contrary to good resource management practice.
 - (g) Do not comply with the requirements of section 32 of the RMA, particularly in that the provisions are not the most appropriate means of achieving the relevant plan objectives having regard to their efficiency and effectiveness and taking into account benefits, costs and risks.
 - (h) Do not have proper regard to the requirements of, and do not give effect to, the NPS-FM.
 - (i) Are inconsistent with the Waikato Regional Policy Statement.

- (j) Are otherwise inconsistent with the relevant provisions of the RMA, including the purposes and principles of the RMA under Part 2.
- (k) Are inappropriate.

Other, and more specific, reasons for appeal

29. Without limiting the generality of the overall reasons and grounds for the appeal outlined in the paragraphs above, the tables in **Appendices One and Two** contain other, and more specific, appeal points and relief sought to address the Iwi Co-Governors' concerns, including an example of how Table 3.11-1 might be amended, and new Table 3.11-2A.

Relief sought

- 30. Generally, the Iwi Co-Governors seek a robust PC1 in which the execution of the operative provisions of the plan change properly reflects, and does not undermine, the decisions of the Panel.
- 31. The Iwi Co-Governors seek the following specific relief:
 - (a) The relief set out in Appendices One and Two.
 - (b) Such further or other relief or other consequential amendments that are considered appropriate and necessary to address the concerns of the Iwi Co-Governor.
 - (c) Costs.

Service

32. An electronic copy of this notice is being served today by email on the Waikato Regional Council at <u>PC1Appeals@waikatoregion.govt.nz</u>. Waivers and directions have been made by the Environment Court in [2020] NZEnvC 063 in relation to the usual requirements of the RMA as to service of this notice on other persons.

Attachments

33. Waivers and directions have been made by the Environment Court in [2020] NZEnvC 063 in relation to the usual requirements of the RMA to file a copy of the appellant's submissions and/or further submissions on PC1, the Council's decision, and a list of the names and addresses of each person required to be served with the notice of appeal, and the date of service on each such person.

DATED this 8th day of July 2020

toina

M M E Wikaira / J P Ferguson Counsel for the Iwi Co-Governors

Address for Service

C/- Maia Wikaira Whāia Legal PO Box 910 Wellington 6140

Telephone

027 646 7797

Email

maia@whaialegal.co.nz

TO: The Registrar of the Environment Court at Auckland

AND TO: Waikato Regional Council

Advice to recipients of copy of notice of appeal

How to become party to proceedings

- 1. If you wish to be a party to the appeal, as per the requirements in Environment Court decision [2020] NZEnvC 063, within 30 working days after the period for lodging a notice of appeal ends you must:
 - (a) lodge a signed or unsigned notice of your wish to be a party to the proceedings (in form 33) with the Environment Court by emailing <u>WRC.PC1appeals@justice.govt.nz;</u>
 - (b) serve copies of your notice on the Waikato Regional Council on <u>PC1Appeals@waikatoregion.govt.nz</u>; and
 - (c) serve copies of your notice on the appellant electronically.
- 2. Service on other parties is complete upon the Court uploading a copy of the notice onto the Environment Court's website.
- 3. You may apply to the Environment Court under section 281 of the Resource Management Act 1991 for a waiver of the above timing requirements (see form 38).
- 4. Your right to be a party to the proceedings in the Court may be limited by the trade competition provisions in section 274(1) and Part 11A of the Resource Management Act 1991.

How to obtain copies of documents relating to appeal

- 5. Environment Court decision [2020] NZEnvC 063 waived the requirement on all parties to attach a copy of appellant documents relating to the appeal to this notice.
- 6. Documents relating to the appeal can be obtained at <u>https://www.waikatoregion.govt.nz/council/policy-and-plans/healthy-rivers-plan-for-change</u>.

Advice

7. If you have any questions about this notice, contact the Environment Court Unit of the Department for Courts in Auckland

APPENDIX ONE

Other, and more specific, reasons for appeal

PC1 provision	Reasons for appeal	Relief sought
Objective 4	 Objective 4(c) Objective 4 articulates a desired future state where tangata whenua values are integrated into the management of the Waikato and Waipā River catchment. The publicly notified version of PC1 included Objective 4(b) that specifically stated, "new impediments to the flexibility of the use of tangata whenua ancestral lands are minimised". The Iwi Co-Governors supported the specific phrasing of Objective 4(b). The amendments to Objective 4(c) now explicitly restrict impediments to the use of TWAL to, "those necessary to give effect to Te Ture Whaimana". The Iwi Co-Governors consider the flexibility for the use of other land – that is not defined as tangata whenua ancestral land – is not restricted in the same manner. For example, flexibility for the intensification of drystock farming is unrestricted under Rule 3.11.4.3 and flexibility for the expansion of CVP is explicitly provided for under Rule 3.11.4.8. 	Amend Objective 4(c) to read: a. Any-new impediments to the flexibility of the use of tangata whenua ancestral lands and land returned via treaty settlements are restricted to those necessary to give effect to Te Ture Whaimana o Te Awa o Waikato are minimised;
Policy 2	 Policy 2(b)(ii) Policy 2 provides for farming activities, other than CVP, that require resource consent and are prepared in accordance with Policy 4. Policy 2(b)(i) requires properties with 'High' Nitrogen Leaching Loss Rates (NLLR) to make significant reductions to their NLLR and has no parallel requirement of significant reductions for phosphorus or sediment. Policy 2(b)(ii) provides an avenue for properties to demonstrate, to the Waikato Regional Council (WRC), why significant reductions to their 'High' NLLR should not be required. It is unclear what the specific 	Delete Policy 2(b)(ii). OR Amend Policy 2(b)(ii) to identify the specific circumstances/situations where it is appropriate for a property with a 'High' NLLR to avoid making significant reductions to their NLLR.

PC1 provision	Reasons for appeal	Relief sought
	 circumstances/situation would be for a property with a 'High' NLLR to opt out of making significant reductions in accordance with Policy 2(b)(ii). The risk is Policy 2(b)(ii) becomes a de facto gateway for properties to avoid making significant reductions to their NLLR and could jeopardise achieving the 20% Improvement. Note Policy 2(b)(iii) already provides for WRC to consider extended timeframes to enable a farming system to transition to low nitrogen leaching land uses, or to make significant reductions to a 'High' NLLR. Note Policy 2(c), requiring that resource consents will generally not be granted, is expressly linked to Policy 5 – providing for offsetting and compensation. 	
Rule 3.11.4.1	 Rule 3.11.4.1 Policy 1(c) enables low intensity farming as a permitted activity where there is a "low risk of diffuse discharge of contaminants". Rule 3.11.4.1 increases the permitted activity threshold for 'very low intensity' farming from less than 6 to less than 12 (wintered) stock units per hectare (wsu/ha). The increase in wsu/ha threshold means an unknown number of drystock farms greater than 20 hectares will now only need to demonstrate conformance with Schedule C. The Decision provided no information or evidence to quantify the number of drystock farms that are captured by the increase from less than 6 to less than 12 wsu/ha, or the cumulative impact of fewer properties than the notified version of PC1 being required to prepare an FEP in conformance with Schedule D1 (Part D). The risk is the unknown number of drystock properties between 6 and 12wsu/ha that no longer need to prepare an FEP will jeopardise achieving the 20% Improvement. 	Re-calibrate the less than 12 wsu/ha threshold down, to ensure more farms are required to prepare an FEP in conformance with Schedule D1 (Part D), as 'low' intensity farming systems.

PC1 provision	Reasons for appeal	Relief sought
Rule 3.11.4.3	 Permitted intensification of drystock farming up to 18 wsu/ha Policy 1(c) enables low intensity farming as a permitted activity where there is a "low risk of diffuse discharge of contaminants". Rule 3.11.4.3 allows for the intensification of drystock farming up to 18 wsu/ha as a permitted activity. Increasing the stocking rate to 18 wsu/ha will lead to an unknown increase in the diffuse discharge of contaminants and is no longer "low risk" under Policy 1(c). The Decision provided no information or evidence to quantify the number of drystock farms that are currently farming greater than 12 wsu/ha but less than 18 wsu/ha and the probable increase in the diffuse discharge of contaminants that will result from increasing stocking rates up to 18 wsu/ha. Policy 2 and Policy 4 do not apply, as the intensification of drystock farming is a permitted activity meaning it does not require resource consent and is effectively unable to be managed by the WRC. The risk is unmanaged intensification of drystock farming that leads to a probable increase in the diffuse discharge of contaminants; will jeopardise achieving the 20% Improvement and cut across the opportunity for TWAL to be developed. Application of 18 wsu/ha threshold The definition of winter stocking rate is an average stocking rate across the effective grazed area of a drystock property, and means the 18 wsu/ha threshold applies to all land use classes (LUC). There will be a difference between the physical carrying capacity of higher LUCs [i.e. LUC 4, 5, 6, 7 and 8] on a drystock property and the 18 wsu/ha threshold. The natural limitation of some drystock farming properties, particularly within sub-catchments that are dominated by steep hill country, will be substantially less than 18 wsu/ha.	 Re-calibrate Rule 3.11.4.3 to reduce the less than 18 wsu/ha threshold for 'low' intensity farming to minimise the permitted intensification of drystock farming and ensure more properties prepare FEPs in conformance with Schedule D2 (Part D) as 'moderate' or 'high' intensity farming systems. OR Re-calibrate Rule 3.11.4.3 to constrain the less 18 wsu/ha threshold to LUC 1, 2, 3 and 4 land. AND Insert new clauses in rule 3.11.4.3(7) to read: b. where 3A(ii) applies, provide evidence to demonstrate the Nitrogen Leaching Loss Rate for the property is Low in Table 1 of Schedule B(B); and c. demonstrates a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and d. demonstrates what farming practices will be actioned to reduce diffuse discharges of the contaminant(s) of priority for the relevant sub-catchment set out in Table 3.11-2; and

PC1 provision	Reasons for appeal	Relief sought
	 The risk of increasing the stocking rate up to 18wsu/ha on steeper hill country is likely to exacerbate the diffuse discharge of sediment and phosphorous. This is likely to be counter-productive to achieving the 20% Improvement. 	
	 Relationship between 18 wsu/ha and 'Low' intensity NLLR The 18 wsu/ha permitted activity threshold also acts as a proxy in lieu of a drystock property calculating a NLLR in conformance with Schedule B (Part A). The setting of the 18 wsu/ha number has limited evidential basis in the Decision. As a proxy for calculating a NLLR, the wsu/ha number that is used in Rule 3.11.4.3 must have equivalency to the NLLR range for 'Low' intensity farms. The NLLR and wsu/ha number requires reconsideration as the Iwi Co-Governors are not satisfied that the proposed 18 wsu/ha and less than 31 kg N/ha/yr NLLR reflect 'Low' intensity farming operations. 	
	 <u>Rule 3.11.4.3(7)</u> Rule 3.11.4.3(7) does not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. Schedule D1 (Part D) may provide tools to achieve the "general improvement in farming practice". However, the linkage between Policy 1(a), Rule 3.11.4.3 and Schedule D1 is not clear. Rule 3.11.4.3 does not provide a linkage to the contaminant(s) that are deemed to be a priority in Table 3.11-2. 	

PC1 provision	Reasons for appeal	Relief sought
	• This means that it is possible for an FEP to be developed, compliant with Rule 3.11.4.3 and Schedule D1 (Part D), that does not adequately reflect the requirements of Policy 1(b).	
Rule 3.11.4.4	 <u>Rule 3.11.4.4(6)(b)</u> Rule 3.11.4.4(6)(b) does not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. Schedule D2 (Part D) may provide tools to achieve the "general improvement in farming practice". However, the linkage between Policy 1(a), Rule 3.11.4.4 and Schedule D2 is not clear. Rule 3.11.4.4 does not provide a linkage to the contaminant(s) that are deemed to be a priority in Table 3.11-2. This means that it is possible for an FEP to be developed, compliant with Rule 3.11.4.4 and Schedule D2 (Part D), that does not adequately reflect the requirements of Policy 1(b). 	 Insert new clauses in rule 3.11.4.4(6)(b) to read: iii. <u>demonstrating a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and</u> iv. <u>demonstrating the farming practices will be actioned to reduce diffuse discharges of the contaminant(s) of priority for the relevant subcatchment set out in Table 3.11-2;</u>
Rule 3.11.4.5	 Rule 3.11.4.5(5)(b) Rule 3.11.4.5(5)(b) does not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. Schedule D2 (Part D) may provide tools to achieve the "general improvement in farming practice". However, the linkage between Policy 1(a), Rule 3.11.4.5 and Schedule D2 is not clear. Rule 3.11.4.5 does not provide a linkage to the contaminant(s) that are deemed to be a priority in Table 3.11-2. 	 Insert new clauses in rule 3.11.4.5(5)(b) to read: iii. <u>demonstrating a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and</u> iv. <u>demonstrating the farming practices will be actioned to reduce diffuse discharges of the contaminant(s) of priority for the relevant subcatchment set out in Table 3.11-2;</u>

PC1 provision	Reasons for appeal	Relief sought
	• This means that it is possible for an FEP to be developed, compliant with Rule 3.11.4.5 and Schedule D2 (Part D), that does not adequately reflect the requirements of Policy 1(b).	
Rule 3.11.4.6	 <u>Rule 3.11.4.6(5)(b)</u> Rule 3.11.4.6(5)(b) does not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. Schedule D2 (Part D) may provide tools to achieve the "general improvement in farming practice". However, the linkage between Policy 1(a), Rule 3.11.4.4 and Schedule D2 is not clear. Rule 3.11.4.6 does not provide a linkage to the contaminant(s) that are deemed to be a priority in Table 3.11-2. This means it is possible for an FEP to be developed, compliant with Rule 3.11.4.6 and Schedule D2 (Part D), that does not adequately reflect the requirements of Policy 1(b). 	 Insert new clauses in rule 3.11.4.6(5)(b) to read: iii. <u>demonstrating a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and</u> iv. <u>demonstrating the farming practices will be actioned to reduce diffuse discharges of the contaminant(s) of priority for the relevant subcatchment set out in Table 3.11-2;</u>
Rule 3.11.4.7	 <u>Rule 3.11.4.7(4)(b)</u> Rule 3.11.4.7(4)(b) does not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. In respect of 'High' intensity farming systems, Rule 3.11.4.7(4)(b) does not reflect the requirement to make significant reductions to the NLLR. Chapter 3.11 does not define "significant reduction" and the determination of what constitutes a "significant reduction" is at the discretion of WRC as a discretionary activity. All properties should be making reductions across all four contaminants consistent with Policy 1(a), but the degree of reduction for 'High' 	 Insert new clauses in rule 3.11.4.7(4)(b) to read: iii. demonstrating a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and iv. demonstrating the farming practices will be actioned to reduce diffuse discharges of the contaminant(s) of priority for the relevant sub-catchment set out in Table 3.11-2; and v. showing actions and mitigations that demonstrate how the farming activity will achieve the goals and principles set out in Part D of Schedule D2: and

PC1 provision	Reasons for appeal	Relief sought
	 intensity farms should be defined and linked to a time scale for improvements. Such reductions can be addressed through Schedule D2 (Part D), but there should be a quantifiable reduction to elicit change. Schedule D2 (Part D) provides the tools to achieve the "general improvement in farming practice". However, the linkage between Policy 1(a), Rule 3.11.4.7 and Schedule D2 is not clear. Rule 3.11.4.7 does not provide a linkage to the contaminant(s) that are deemed to be a priority in Table 3.11-2 This means that it is possible for an FEP to be developed that is compliant with Rule 3.11.4.7 and Schedule D2 (Part D) but does not adequately reflect the requirements of Policy 1(b). Note relief sought for Policy 2(b)(ii). 	vi. <u>providing evidence to demonstrate how a</u> <u>significant reduction in the Nitrogen Leaching</u> <u>Loss Rate will be made; and</u>
Rule 3.11.4.8	 This is a new rule, but it relates to Notified Non-Complying Activity Rule 3.11.5.7, and Decision Version Policy 3(d). Land for CVP expansion must: be located entirely within the sub-catchments specified in Table 1 of Rule 3.11.4.8; be entirely within LUC 1 and/or LUC 2 land; and must not exceed the maximum limits of the sub-catchment area. This rule is opposed for the reasons outlined at paragraph 16 of the notice of appeal. 	Delete Policy 3(d) and Rule 3.11.4.8. OR Discretionary rule for the development of TWAL (currently a non-complying activity) so as to be comparable to Rule 3.11.4.8, to prevent the intent of Objective 4(b) and Policy 18 from being undermined. AND Re-calibrate Table 1 in Rule 3.11.4.8 to identify a combined maximum area limit of 716ha from the identified sub-catchments. AND Insert new clauses in rule 3.11.4.8(4)(b) to read: iii. <u>demonstrating a general improvement in farming practice to reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens; and iv. <u>demonstrating the farming practices will be</u> actioned to reduce diffuse discharges of the</u>

PC1 provision	Reasons for appeal	Relief sought
Rule 3.11.4.9	 This issue is related to Policy 3(d) and Rule 3.11.4.8. As notified, Rule 3.11.5.7 (now Rule 3.11.4.9), which requires non-complying land use consent for any change to existing land use as specified in the rule, only had effect until 1 July 2026 (End Date). Recognising the impracticality of a specified End Date in the context of a plan change development that could take longer to come into effect than first anticipated, the Iwi Co-Governors advocated for retention of an End Date '10 years from the date on which PC1 would become operative'. Any concept of an End Date has been removed in Rule 3.11.4.9. This is the rule to which TWAL is subject. The permissive nature of the CVP Expansion Provisions, and the effect they have of undermining the TWAL provisions, now make the End Date 	 <u>contaminant(s) of priority for the relevant sub-catchment set out in Table 3.11-2;</u> v. showing actions and mitigations that demonstrate how the farming activity will achieve the goals and principles set out in Part D of Schedule D2; and vi. if the NLLR for the property is High as identified in Table 1 in Schedule B(B), demonstrate how a significant reduction in the Nitrogen Leaching Loss Rate will be made; and Delete Policy 3(d) and Rule 3.11.4.8. AND Retain Rule 3.11.4.9 End Date '10 years from the date on which PC1 would become operative'. OR Discretionary rule for the development of TWAL (currently a non-complying activity) so as to be comparable to Rule 3.11.4.8, to prevent the intent of Objective 4(b) and Policy 18 from being undermined.
Schodulo P	even more critical.	Po colibrate down the values for the 'Low' and
Scheuule B	 The purpose of Table 1 in Schedule B (Part B) is to use the NLLR, that is calculated for a property in conformance with Schedule B (Part A), to identify whether a use of land for farming has a 'Low', 'Moderate' or 'High' leaching loss rate for nitrogen. The 'Low', 'Moderate' or 'High' leaching loss rate for nitrogen translates to 'Low', 'Moderate' or 'High' intensity farming, and therefore determines the applicable regulatory pathways and a divide status in Charle 2.11 	'Moderate' NLLR Levels set out in Table 1. AND Amend all references to "Nitrogen Leaching Loss Rate is produced for the property with Schedule B; and" in Policy 4(a), Rule 3.11.4.3, Rule 3.11.4.4, Rule 3.11.4.5, Rule 3.11.4.6, Rule 3.11.4.7, Rule

PC1 provision	Reasons for appeal	Relief sought
	 Once the NLLR is calculated, there is no requirement in any of the rules or schedules in Chapter 3.11 for that property to continue to comply with the NLLR, or the 'Low', 'Moderate' or 'High' NLLR Levels set out in Table 1. The Iwi Co-Governors consider that the 'Low', 'Moderate' or 'High' NLLR Levels set out in Table 1 are not intended to be used as a compliance tool or a NLLR level target for conditions of any resource consent. If the NLLR levels were to be used for compliance purposes, the Iwi Co-Governors consider that there is a potential risk of intensification occurring within the NLLR Levels (e.g. a condition of resource consent that requires a property to maintain a 'High' NLLR Level could mean anything greater than 57kgN/ha/year in the Upper Waikato Freshwater Management Unit). With respect to Rule 3.11.4.3, the Iwi Co-Governors are not satisfied that both the 18 wsu/ha threshold and less than 31 kg N/ha/year NLLR level have equivalency as 'Low' intensity farming operations. Amendments are required to Table 1 to better reflect the 'Low' and 'Moderate' NLLR levels and how they equate to other proxy thresholds for 'farming intensity' in PC1. 	 3.11.4.8, Schedule D1(C)(5) and Schedule D2(C)(3)(d) to read: "Nitrogen Leaching Loss Rate is produced for the property with Schedule B(A); and" AND Insert new note in Table 1: Nitrogen Leaching Loss Rate levels to read: <u>Note: The 'Low', 'Moderate' or 'High' NLLR levels</u> in Table 1 are not intended to act as a numerical target to demonstrate compliance with any condition of resource consent. AND Amend Rule 3.11.4.3(3A)(ii) to read: The Nitrogen Leaching Loss Rate for the property is Low <u>as identified in in conformance with Table 1 in</u> Schedule B(<u>B</u>); AND Amend Rule 3.11.4.4(4A)(ii) to read:
	 Use of term 'in conformance with' and 'calculate' in respect of Table 1 in Schedule B (Part A) in Chapter 3.11 Chapter 3.11 uses the term 'in conformance' to test where a process or steps in Schedule B have been undertaken as prescribed. Schedule B has two parts; Part A prescribes the process that is to be used to calculate a NLLR; Part B contains Table 1: NLLR levels. When a NLLR is calculated for a property in conformance with Part A, it is then 'identified' as a NLLR Level [either 'Low', 'Moderate' or 'High']. The language of "in conformance with" is awkward and could be misinterpreted to mean the NLLR must be conformed with at all times. We suggest amending it to "as identified in". 	The Nitrogen Leaching Loss Rate for the property is Moderate <u>as identified in in conformance with Table 1</u> in Schedule B <u>(B);</u> AND Amend Rule 3.11.4.4(4B)(ii) to read: The Nitrogen Leaching Loss Rate for the property is Low <u>as identified in in conformance with Table 1</u> in Schedule B <u>(B);</u> AND Amend Rule 3.11.4.7(7B) to read:

PC1 provision	Reasons for appeal	Relief sought
	 Policy 4(a) directs the use of an appropriate decision support tool in accordance with Schedule B to 'quantify' the NLLR. For consistency of language, a NLLR is 'calculated' in conformance with 'Schedule B(A)'. 	The Nitrogen Leaching Loss Rate for the property is High <u>as identified in in conformance with</u> -Table 1 in Schedule B <u>(B);</u> AND Amend Policy 4(a) to read: a. If a property is used for dairy farming, commercial vegetable production, or has a stocking rate of more than 18 stock units per hectare and/or more than 5% in arable cropping, use an appropriate decision support tool in accordance with Schedule B <u>(A)</u> of this Chapter, to <u>calculate</u> quantify the Nitrogen Leaching Loss Rate for the property; and
Schedule C	 <u>Utility of Schedule C</u> The minimum requirements for fertiliser application rates, sacrifice paddocks, forage cropping and cultivation are considered current good practice. It is unclear the number of properties in the Waikato and Waipā River catchments that are greater than 20ha and have not already incorporated these good practices. The biggest issue will be hill country sediment and phosphorous discharges which may be exacerbated/high due to the increased su/ha thresholds for Rules 3.11.4.1 and 3.11.4.3. <u>Stock exclusion</u> Amendments to stock exclusion criteria mean the properties that run fewer than 18 su/ha in paddocks adjoining a waterbody on land over 15 degrees, will not need to fence those waterbodies. Schedule C(1)(b) is unlikely to result in stock being excluded from waterbodies on slopes greater than 15 degrees with a stocking rate 	Re-calibrate Rule 3.11.4.1 to reduce the less than 12wsu/ha threshold, to ensure more farms prepare FEPs under Schedule D1 (e.g. as 'low' intensity farming systems). AND Re-calibrate the 18su/ha threshold for Schedule C(1)(b) to ensure stock are excluded from more waterbodies. AND Improvements to Schedule C are required, starting with acknowledging and requiring adherence to current industry guidance documents (e.g. Farm Dairy Effluent Code of practice); setting requirements to minimise sediment loss; controls around stock movement in confirmed areas; cultivation and irrigation.

PC1 provision	Reasons for appeal	Relief sought
	 greater than 18 su/ha, due to the limitations of heavily stocking greater than LUC4 hill country. Enforcing compliance with the 18 su/ha threshold on hill country that is greater than 15 degree slope and adjacent to waterbodies will be challenging. 	
Schedule D1	 Schedule D1 sets out requirements for FEPs for properties that are defined as 'Low' Intensity farming under Rule 3.11.4.3. Part D of Schedule D1 is essentially a broader suite of minimum standards that substantially expands on the minimum standards in Schedule C. Rule 3.11.4.3 requires actions and mitigations in a FEP to demonstrate how minimum standards in Part D will be achieved. The evidence that is required to demonstrate each minimum standard has been met is unclear. Schedule D1 does not require opportunities for improvements to be made in farming systems over and above the minimum standards in Part D, or to build on the Minimum Farming Standards set out in Schedule C. The risk is Schedule D1 leads to very basic FEPs that simply codify existing farming systems and do not adequately reflect the requirement in Policy 1(a) to make a general improvement in farming practice to reduce diffuse discharges of the four contaminants, or Policy 1(b) to focus priority actions on those farming practices that reduce the contaminants listed in Table 3.11-2. It is unclear how many farming properties will be required to prepare FEPs in conformance with Schedule D1, versus Schedule D2. The Iwi Co-Governors are concerned that the current requirements in Schedule D1, coupled with the identified problems in Rule 3.11.4.1, will not achieve the 20% Improvement in the 10-year timeframe post Chapter 3.11 becoming operative. 	 WRC needs to undertake modelling to provide comfort that Schedule C + Schedule D1 + Schedule D2 will equate to a 20% Improvement in the 10-year timeframe post Chapter 3.11 becoming operative. AND Amend Part E of Schedule D2 to read: PART E - <u>REVIEWING AND UPDATING</u> A FARM ENVIRONMENT PLAN The FEP shall be reviewed by a Certified Farm Environment Planner who holds a reviewing endorsement (issued by Waikato Regional Council) and updated as necessary to provide for continuous improvement in farming practices to reduce diffuse discharges of contaminants, the adoption of new technologies and mitigation practices and for consistency with this schedule, as follows: 1. Within 12 months of the date that the FEP is required and thereafter at intervals of no more than 3 years; 2. An FEP shall also be reviewed in the event of any material increase in the intensity of farming. The purpose of the review is to provide an expert opinion as to whether the farming activities on the property are being undertaken in a manner that meets the Part D minimum standards and to update

PC1 provision	Reasons for appeal	Relief sought
	 Part E in Schedule D1 requires FEPs to be reviewed by a Certified Farm Environment Planner for 'consistency with this schedule' within 12 months of the date of the FEP, and every 3 years thereafter. Part E only refers to a review of the FEPs, and not to updating or amending the FEPs as a result of that review. There is no requirement in Part E to include as part of that review a consideration of the need to update the FEPs to provide for continuous improvement and the adoption of new technologies and mitigation practices that is required to achieve Policy 4(h). 	<u>the FEP</u> . The results of the review <u>, including any</u> <u>updates to the FEP</u> , shall be provided to the Waikato Regional Council within 20 working days of the review date.
Schedule D2	 Utility of Schedule D2 Schedule D2 sets out requirements for FEPs for properties that are defined as: (i) 'Moderate' and 'High' Intensity farming under Rules 3.11.4.4 and 3.11.4.7; (ii) existing CVP under Rule 3.11.4.5; (iii) located within the Whangamarino wetland catchment under Rule 3.11.4.6; or (iv) new CVP under Rule 3.11.4.8 (acknowledging that new activities including TWAL would likely be required to prepare a FEP in conformance with Schedule D2). Part D of Schedule D2 provides substantially more scope to develop specific, time-bound actions and practices that will be adopted to ensure the farming activities are consistent with the seven (7) goals and principles. The key will be ensuring FEP developed under Schedule D2 "will result in the greatest reduction in diffuse discharges possible" as set out in the purpose. However, the use of language "where appropriate" in Part B(2) infers that properties preparing a FEP in conformance with Schedule D2 may not be required to put in place "specific, time bound actions and mitigation" to implement the requirements of Policy 1(a), (b), (d), Policy 2(b)(i) and Policy 4 and Policy 4. Similar to Schedule D1, it is unclear how many farming properties will be required to prepare FEPs in conformance with Schedule D2. 	 WRC needs to undertake modelling to provide comfort that Schedule C + Schedule D1 + Schedule D2 will equate to 20% improvement in the 10-year timeframe post Chapter 3.11 becoming operative. AND Amend Part B(2) of Schedule D2 to read: Where appropriate, i Identify and record the specific, time bound actions and mitigations that will be adopted to ensure the farming activities are consistent with the goals and principles set out in Part D of this schedule, that will result in the greatest reduction in diffuse discharges as practicable. AND Amend Part E of Schedule D2 to read: PART E - <u>REVIEWING AND UPDATING</u> A FARM ENVIRONMENT PLAN The FEP shall be reviewed by a Certified Farm Environment Planner <u>and updated as necessary</u> for consistency with this schedule <u>and to provide for continuous improvement in farming practices to</u>

PC1 provision	Reasons for appeal	Relief sought
	 The Iwi Co-Governors are concerned that the 20% improvement to achieve Te Ture Whaimana will not be met in the 10-year timeframe post Chapter 3.11 becoming operative. Review and updating FEP Part E in Schedule D2 requires FEPs to be reviewed by a Certified Farm Environment Planner for 'consistency with this schedule' within 12 months of the granting of the consent application and in accordance with the review intervals set out in the conditions of the resource consent. Part E only refers to a review of the FEPs, and not to updating or amending the FEPs as a result of that review. There is no requirement in Part E to include as part of that review a consideration of the need to update the FEPs to provide for continuous improvement and the adoption of new technologies and mitigation practices that is required to achieve Policy 4(h). 	 <u>reduce diffuse discharges of contaminants, the</u> <u>adoption of new technologies and mitigation practices</u> <u>as appropriate</u>: Within 12 months of the granting of the consent application; and <u>In accordance with the review intervals set out in</u> the conditions of the resource consent. <u>An FEP shall also be reviewed in the event of any</u> material increase in the intensity of farming. The purpose of the review is to provide an expert opinion whether the farming activities on the property are being undertaken in a manner consistent with the goals and principles set out in Part D of this schedule <u>and to update the FEP</u>. The review, including any updates to the FEP, shall be undertaken by re-assessing the FEP in accordance with the requirements set out in this schedule.
Table 3.11-1	 Table 3.11-1(b) as amended in the Decision introduces requirements for catchment-scale nitrate-nitrogen and ammoniacal-nitrogen concentration reductions that are inconsistent with both: the expert recommendations¹⁹ to use the 99% species protection (Band A) for the Waikato and Waipā Rivers mainstems and the 95% species protection level (Band B) for all tributaries; and the Decision's stated intend to use the current state nitrate and ammonia values as targets²⁰. The nitrate-nitrogen and ammoniacal-nitrogen concentration reduction requirements are quite variable across the sub-catchments and result in situations where sub-catchments with relatively better water quality is 	Amend Table 3.11-1 to follow the expert recommendations.

 ¹⁹ PC1: Joint Witness Statement – Expert Conferencing - Table 3.11-1. Dated 17/06/2019, Section 3/Table 1, pages20-21.
 ²⁰ Decision Vol 1 paragraph 40, second bullet point.

PC1 provision	Reasons for appeal		Relief sought							
	required to make a greater proportional improvement neighbouring sub-catchment with more degraded v	red to make a greater proportional improvement than a bouring sub-catchment with more degraded water quality.								
	 The following sub-catchments are present in Table omitted from Table 3.11-1, presumably because th current state of water quality. It would be preferab these sub-catchments in Table 3.11-1 and signal th attributes will be set at levels that are not worse th as soon as sufficient monitoring data is collected. 	3.11-2 but are ere is no data on the le to incorporate nat water quality nan the current state	Include the sub-catchments identified here. AND Include a new method to require setting water quality attributes for the sub-catchments when sufficient monitoring data is collected							
	Sub-catchmentWaikato at KarapiroPuniu at Wharepapa)Waikato at Bridge StWaikato at RangiririWaikato at Port WaikatoFirewoodWaikareAwaroa (Rotowaro) at Harris/Te Ohaki BrMangaramaMangarapaMoakuraruaWaipā at Waingaro Rd Br	No. 41 50 27 15 6 21 13 18 61 55 42 24								
Table 3.11-2	 Linkages between Water Quality Attribute States and La Table 3.11-1 requires reductions in phosphorus, nit improvement in water clarity in the mainstem of th River. These improvements cannot realistically be achieve all four contaminants PC1 seeks to control are achi catchment scale. 	and Use Management trogen and <i>E.coli</i> and te lower Waikato ed unless reductions in eved at the whole-of-	 Improve and strengthen the linkages between what PC1 sets out to achieve (the water quality Attribute States set in Tables 3.11-1) and how it will achieve it (the various land use control policies, rules and schedules), including, but not limited to, the following: Include an additional Table 3.11-2(a) to include the relative reduction in nitrogen, phosphorus 							

PC1 provision	Reasons for appeal	Relief sought
	 Additional reductions in contaminants and/or water clarity improvements are required in some sub-catchments to achieve the Water Quality Attribute States set in Table 3.11-1. However, Table 3.11-2 and Schedules D1 and D2 do not make specific reference to the whole-of-catchment or sub-catchment reductions in contaminants and/or water clarity improvements set in Table 3.11-1. 	 and <i>E.coli</i> required (as set in Table 3.11-1) at the whole-of-catchment scale. Amend Table 3.11-2 to include the relative improvement required in each sub-catchment, where this improvement is greater than that required at the whole of catchment scale. Identify the priority contaminant(s) for each subcatchment. The prioritisation of contaminants may be based on an analysis of: the water quality improvements required to achieve the water quality Attributes states at the sub-catchment scale; or the contaminant loads or yields contributed to the mainstem by each sub-catchment; or a combination thereof. Include a requirement in Schedules D1 and D2 to demonstrate how specific, time bound actions and mitigations will contribute to achieving the relative improvements identified in Tables 3.11-2(a) and 3.11-2. Include a requirement in Schedules D1 and D2 to demonstrate how specific, time bound actions and mitigations will focus on the priority contaminant(s) identified in table 3.11-2 for each sub-catchment.
Table 3.11-3	Catchments and consent implementation over 5 year period	Re-order the sub-catchments in Table 3.11-3 to
	• It is understood that the intent of spacing out of the FEPs and consents over a 5-year period acknowledges the significant volume of work	optimise achieving the short-term [10-year] numerical water quality attributes in Table 3.11-1.
	required to prepare FEPs for the whole catchment, and reflects that	The prioritisation may need to be based on an
	limited professional resources are available to prepare and audit FEPs.	analysis of:

PC1 provision	Reasons for appeal	Relief sought
	 The requirements to prepare FEPs in the PC1 Decision version is materially different from those of the Notified version. This is likely to affect the total number of FEPs required in each sub-catchment and in the whole catchment. Table 3.11-3 should prioritise sub-catchments on the basis of where the greatest water quality benefits may be achieved by the implementation of FEPS, both at the sub-catchment and catchment scale. 	 The number of FEPs required in each sub-catchment; the water quality improvements required to achieve the water quality Attributes states at the sub-catchment scale, or the contaminant loads or yields contributed to the mainstem by each sub-catchment; or a combination thereof

APPENDIX TWO

Table 3.11-1(b) – Dissolved Nitrogen and Phosphorus Attribute States

(1): Value to be set when current state data are available, as the lesser of current concentration or the value specified in the table

(2) Where the current concentration is greater than the long-term Attribute State, the short-term Attribute State is to be calculated as [current]+0.2*([current]-[80-year Attribute State])

Sub-Catchment ²¹ (identifying	Median nitrate		95	th %ile nitra	ite	Me	dian ammo	onia ²²	Maxi	mum amm	ionia ²³	Median dissolved reactive phosphorus			
number)		(mg/L)			(mg/L)			(mg/L)			(mg/L)			(mg/L)	
	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year
Upper Waikato FMU															
Waikato at Ohaaki (73)	0.039	0.039	0.039	0.076	0.076	0.076	0.002	0.002	0.002	0.013	0.013	0.013	0.006	0.006	0.006
Waikato at Ohakuri (66)	0.086	0.086	0.086	0.177	0.177	0.177	0.003	0.003	0.003	0.017	0.017	0.017	0.009	0.009	0.009
Waikato at Whakamaru (67)	0.101	0.101	0.101	0.251	0.251	0.251	0.003	0.003	0.003	0.010	0.010	0.010	0.008	0.008	0.008
Waikato at Waipāpa (64)	0.164	0.164	0.164	0.320	0.320	0.320	0.007	0.007	0.007	0.016	0.016	0.016	0.016	0.016	0.016
Waikato at Karapiro (41)	TBD	Current	<u>Current</u>	<u>TBD</u>	Current	Current	TBD	<u>Current</u>	<u>Current</u>	<u>TBD</u>	<u>Current</u>	<u>Current</u>	<u>Current</u>	<u>Current</u>	Current ²⁴
		<u>or (2)</u>	<u>or 1.0⁽¹⁾</u>		<u>or (2)</u>	<u>or 1.5⁽¹⁾</u>		<u>or (2)</u>	<u>or 0.03⁽¹⁾</u>		<u>or (2)</u>	<u>or 0.05⁽¹⁾</u>			
Pueto (74)	0.450	0.450	0.450	0.536	0.536	0.536	0.003	0.003	0.003	0.009	0.009	0.009	0.074	0.074	0.074
Torepatutahi (72)	0.500	0.500	0.500	0.825	0.825	0.825	0.002	0.002	0.002	0.011	0.011	0.011	0.082	0.082	0.082
Waiotapu at Homestead (65)	1.285	1.2 <mark>85</mark>	1. <u>285</u>	1.665	1.6 <u>65</u>	1.665	0.121	0.103	0.030	0.190	<u>0.190</u>	<u>0.190</u>	0.034	0.034	0.034
Mangakara (69)	1.300	1. <u>30</u> 0	<u>1.300</u>	1.675	1. <u>675</u>	1. <u>675</u>	0.008	0.008	0.008	0.063	<u>0.063</u>	0.063	0.048	0.048	0.048
Kawaunui (62)	2.600	2.560	2.400	3.100	3.100	3.100	0.006	0.006	0.006	0.083	<u>0.083</u>	<u>0.083</u>	0.054	0.054	0.054
Waiotapu at Campbell (58)	0.915	0.915	0.915	1.135	1.135	1.135	0.301	0.289	0.240	0.349	0.349	0.349	0.002	0.002	0.002
Otamakokore (59)	0.740	0.740	0.740	1.360	1.360	1.360	0.006	0.006	0.006	0.025	0.025	0.025	0.153	0.153	0.153
Whirinaki (56)	0.770	0.770	0.770	0.885	0.885	0.885	0.002	0.002	0.002	0.013	0.013	0.013	0.061	0.061	0.061
Tahunaatara (54)	0.555	0.555	0.555	0.845	0.845	0.845	0.003	0.003	0.003	0.015	0.015	0.015	0.031	0.031	0.031
Mangaharakeke (57)	0.525	0.525	0.525	0.795	0.795	0.795	0.003	0.003	0.003	0.015	0.015	0.015	0.031	0.031	0.031
Waipāpa (70)	1.210	1. <u>210</u>	1. <u>21</u> 0	1.555	1.5 <u>55</u>	1.5 <u>55</u>	0.003	0.003	0.003	0.005	0.005	0.005	0.086	0.086	0.086
Mangakino (71)	0.650	0.650	0.650	0.875	0.875	0.875	0.003	0.003	0.003	0.012	0.012	0.012	0.039	0.039	0.039
Whakauru (49)	0.260	0.260	0.260	0.461	0.461	0.461	0.003	0.003	0.003	0.033	0.033	0.033	0.019	0.019	0.019
Mangamingi (48)	2.800	2.720	2.400	3.400	3.400	3.400	0.098	0.084	0.030	0.323	<u>0.323</u>	<u>0.323</u>	0.290	0.290	0.290
Pokaiwhenua (45)	1.755	1.604	1.000	2.200	2. <u>20</u> 0	2.200	0.002	0.002	0.002	0.020	0.020	0.020	0.087	0.087	0.087
Little Waipā (44)	1.580	1.464	1.000	2.150	2. <u>150</u>	2.150	0.002	0.002	0.002	0.089	0.089	<u>0.089</u>	0.051	0.051	0.051

²¹ See Map 3.11-2 for the location and extent of each sub-catchment

 $^{^{\}rm 22}$ The annual median and annual maximum ammonia have been adjusted for pH

 $^{^{\}rm 23}$ The ammonia maximum is the average of five annual maxima

²⁴ Note this is an example to show what the data could look like, and should be replicated for the other missing sub-catchments.

Sub-Catchment ²¹ (identifying	tifying Median nitrate 9		95	75 th %ile nitrate Median ammonia ²²			Maxi	mum amm	nonia ²³	Median dissolved reactive phosphorus					
number)		(mg/L)			(mg/L)			(mg/L)			(mg/L)			(mg/L)	
	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year
						Mido	lle Waikato	5 FMU							
Waikato at Narrows (33)	0.235	0.235	0.235	0.545	0.545	0.545	0.010	0.010	0.010	0.018	0.018	0.018	0.015	0.015	0.015
Waikato at Horotiu (25)	0.260	0.260	0.260	0.550	0.550	0.550	0.007	0.007	0.007	0.029	0.029	0.029	0.019	0.019	0.019
Karapiro (32)	0.520	0.520	0.520	1.760	1. <u>760</u>	1. <u>760</u>	0.008	0.008	0.008	0.031	0.031	0.031	0.042	0.042	0.042
Mangawhero (35)	2.100	<u>2.100</u>	<u>2.100</u>	2.720	2. <u>720</u>	<u>2.720</u>	0.042	0.040	0.030	0.074	<u>0.074</u>	<u>0.074</u>	0.040	0.040	0.040
Mangaonua (29)	1.505	1. <u>505</u>	1. <u>505</u>	2.100	<u>2.100</u>	<u>2.100</u>	0.037	0.036	0.030	0.051	0.051	<u>0.051</u>	0.012	0.012	0.012
Mangaone (31)	2.600	2.560	2.400	3.200	3.200	3.200	0.009	0.009	0.009	0.020	0.020	0.020	0.063	0.063	0.063
Mangakotukutuku (30)	0.800	0.800	0.800	2.350	2. <u>350</u>	<u>2.350</u>	0.082	0.072	0.030	0.141	<u>0.141</u>	<u>0.141</u>	0.213	0.213	0.213
Waitawhiriwhiri (28)	0.880	0.880	0.880	1.265	1.265	1.265	0.258	0.254	0.240	0.346	0.346	0.346	0.031	0.031	0.031
Kirikiriroa (23)	0.815	0.815	0.815	1.975	1. <u>975</u>	1. <u>975</u>	0.104	0.089	0.030	0.198	<u>0.198</u>	<u>0.198</u>	0.014	0.014	0.014
						Low	er Waikato	FMU							
Waikato at Huntly-Tainui Br (20)	0.365	0.365	0.365	1.010	1.010	1.010	0.005	0.005	0.005	0.015	0.015	0.015	0.020	0.020	0.020
Waikato at Mercer Br (9)	0.365	0.365	0.365	0.895	0.895	0.895	0.003	0.003	0.003	0.011	0.011	0.011	0.016	0.016	0.016
Waikato at Tuakau Br (4)	0.325	0.325	0.325	0.890	0.890	0.890	0.003	0.003	0.003	0.008	0.008	0.008	0.014	0.014	0.014
Komakorau (22)	1.310	1.310	1.310	5.300	4.940	3.500	0.251	0.249	0.240	0.421	0.417	0.400	0.010	0.010	0.010
Mangawara (17)	0.765	0.765	0.765	3.350	<u>3.350</u>	<u>3.350</u>	0.111	<u>0.111</u>	<u>0.111</u>	0.185	<u>0.185</u>	<u>0.185</u>	0.047	0.047	0.047
Awaroa (Rotowaro) at Sansons	0.700	0.700	0.700	1.390	1.390	1.390	0.024	0.024	0.024	0.093	0.093	0.093	0.002	0.002	0.002
Br (19)															
Matahuru (14)	0.715	0.715	0.715	1.905	1. <u>905</u>	1. <u>905</u>	0.017	0.017	0.017	0.060	<u>0.060</u>	0.060	0.023	0.023	0.023
Whangape (16)	0.004	0.004	0.004	0.795	0.795	0.795	0.008	0.008	0.008	0.143	<u>0.143</u>	<u>0.143</u>	0.002	0.002	0.002
Waerenga (12)	0.820	0.820	0.820	1.420	1.420	1.420	0.005	0.005	0.005	0.023	0.023	0.023	0.019	0.019	0.019
Whangamarino at Jefferies Rd	0.625	0.625	0.625	2.500	2. <u>500</u>	<u>2</u> .500	0.011	0.011	0.011	0.055	0.054	0.050	0.030	0.030	0.030
Br (8)															
Mangatangi (2)	0.110	0.110	0.110	1.290	1.290	1.290	0.006	0.006	0.006	0.038	0.038	0.038	0.021	0.021	0.021
Mangatāwhiri (1)	0.013	0.013	0.013	0.400	0.400	0.400	0.003	0.003	0.003	0.011	0.011	0.011	0.011	0.011	0.011
Whangamarino at Island Block	0.075	0.075	0.075	0.865	0.865	0.865	0.013	0.013	0.013	0.158	<u>0.158</u>	<u>0.158</u>	0.006	0.006	0.006
Rd (10)															
Whakapipi (3)	3.500	3.280	2.400	5.350	4.980	3.500	0.006	0.006	0.006	0.084	<u>0.084</u>	<u>0.084</u>	0.022	0.022	0.022
Ohaeroa (7)	1.525	1. <u>525</u>	1. <u>525</u>	1.915	<u>1.915</u>	<u>1.915</u>	0.003	0.003	0.003	0.015	0.015	0.015	0.008	0.008	0.008
Opuatia (11)	0.740	0.740	0.740	1.081	1.081	1.081	0.005	0.005	0.005	0.016	0.016	0.016	0.006	0.006	0.006
Awaroa (Waiuku) (5)	1.410	1. <u>410</u>	1. <u>410</u>	2.500	<u>2.500</u>	<u>2.500</u>	0.022	0.022	0.022	0.144	<u>0.144</u>	<u>0.144</u>	0.004	0.004	0.004
						Wa	aipā River F	MU							
Waipā at Mangaokewa Rd (68)	0.380	0.380	0.380	0.710	0.710	0.710	0.003	0.003	0.003	0.017	0.017	0.017	0.005	0.005	0.005
Waipā at Otewa (60)	0.228	0.228	0.228	0.504	0.504	0.504	0.003	0.003	0.003	0.008	0.008	0.008	0.008	0.008	0.008
Waipā at Otorohanga (51)	0.370	0.370	0.370	1.150	1.150	1.150	0.004	0.004	0.004	0.020	0.020	0.020	0.008	0.008	0.008
Waipā at Pirongia-Ngutunui Rd	0.565	0.565	0.565	1.535	1.528	1.500	0.008	0.008	0.008	0.023	0.023	0.023	0.014	0.014	0.014
Br (43)															

Sub-Catchment ²¹ (identifying	M	edian nitra	ate	95	th %ile nitra	ate	Mee	dian ammo	nia ²²	Maxi	mum amm	onia ²³	Median dis	solved reactive	e phosphorus	
number)		(mg/L)			(mg/L)			(mg/L)			(mg/L)			(mg/L)		
	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	
Waipā at SH23 Br Whatawhata	0.673	0.673	0.673	1.587	1.570	1.500	0.009	0.009	0.009	0.026	0.026	0.026	0.018	0.018	0.018	
(34)																
Ohote (26)	0.495	0.495	0.495	1.385	1.385	1.385	0.023	0.023	0.023	0.052	<u>0.052</u>	<u>0.052</u>	0.020	0.020	0.020	
Kaniwhaniwha (36)	0.350	0.350	0.350	0.995	0.995	0.995	0.007	0.007	0.007	0.022	0.022	0.022	0.007	0.007	0.007	
Mangapiko (38)	1.410	1 <u>.410</u>	1 <u>.410</u>	2.650	<u>2.650</u>	<u>2.650</u>	0.022	0.022	0.022	0.078	<u>0.078</u>	<u>0.078</u>	0.115	0.115	0.115	
Mangaohoi (39)	0.230	0.230	0.230	0.415	0.415	0.415	0.003	0.003	0.003	0.008	0.008	0.008	0.043	0.043	0.043	
Mangauika (37)	0.210	0.210	0.210	0.286	0.286	0.286	0.002	0.002	0.002	0.003	0.003	0.003	0.002	0.002	0.002	
Puniu at Bartons Corner Rd Br	0.650	0.650	0.650	1.305	1.305	1.305	0.007	0.007	0.007	0.029	0.029	0.029	0.022	0.022	0.022	
(40)																
Mangatutu (47)	0.380	0.380	0.380	0.908	0.908	0.908	0.003	0.003	0.003	0.012	0.012	0.012	0.009	0.009	0.009	
Waitomo at SH31 Otorohanga	0.520	0.520	0.520	0.925	0.925	0.925	0.008	0.008	0.008	0.026	0.026	0.026	0.006	0.006	0.006	
(46)																
Mangapu (53)	0.860	0.860	0.860	1.428	1.428	1.428	0.016	0.016	0.016	0.064	<u>0.064</u>	<u>0.064</u>	0.023	0.023	0.023	
Waitomo at Tumutumu Rd (52)	0.630	0.630	0.630	0.825	0.825	0.825	0.004	0.004	0.004	0.013	0.013	0.013	0.010	0.010	0.010	
Mangaokewa (63)	0.525	0.525	0.525	1.060	1.060	1.060	0.005	0.005	0.005	0.014	0.014	0.014	0.014	0.014	0.014	

Table 3.11-1(c) – Chlorophyll, Total Nitrogen and Total Phosphorus Attribute States

Sub-Catchment ²⁵ (identifying number)	Media	an Chlorop	hyll-a	Maximum Chlorophyll-a		Median Total Nitrogen			Median Total Phosphorus			
		(mg/m³)			(mg/m³)			(mg/m³)			(mg/m³)	
	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year
Upper Waikato FMU												
Waikato at Ohaaki (73)	1.5	1.5	1.5	13	13	13	134	134	134	10	10	10
Waikato at Ohakuri (66)	3.1	3.1	3.1	11	11	11	216	216	216	17	17	17
Waikato at Whakamaru (67)		5.0	5.0		25	25	271	271	271	20	20	20
Waikato at Waipāpa (64)	4.0	4.0	4.0	25	25	25	336	329	300	25	25	25
Pueto (74)							540			93		
Torepatutahi (72)							625			96		
Waiotapu at Homestead (65)							1860			100		
Mangakara (69)							1580			74		
Kawaunui (62)							2990			82		
Waiotapu at Campbell (58)							1955			72		
Otamakokore (59)							990			144		
Whirinaki (56)							810			62		
Tahunaatara (54)							780			44		
Mangaharakeke (57)							685			48		
Waipāpa (70)							1355			95		
Mangakino (71)							760			47		
Whakauru (49)							470			42		
Mangamingi (48)							3495			325		
Pokaiwhenua (45)							2010			106		
Little Waipā (44)							1780			68		
Middle Waikato FMU												
Waikato at Narrows (33)	5.5	5.4	5.0	23	23	23	410	410	410	28	27	25
Waikato at Horotiu (25)	6.0	5.8	5.0	23	23	23	441	441	441	36	35	31
Karapiro (32)							860			86		
Mangawhero (35)							2930			163		
Mangaonua (29)							1905			52		
Mangaone (31)							3060			118		
Mangakotukutuku (30)							1875			415		
Waitawhiriwhiri (28)							2110			91		
Kirikiriroa (23)							1490			63		
Lower Waikato FMU												
Waikato at Huntly-Tainui Br (20)	6.0	5.8	5.0	19	19	19	585	568	500	45	42	31

²⁵ See Map 3.11-2 for the location and extent of each sub-catchment

Sub-Catchment ²⁵ (identifying number)	Median Chlorophyll-a		Maxin	Maximum Chlorophyll-a			Median Total Nitrogen			Median Total Phosphorus		
		(mg/m³)			(mg/m ³)			(mg/m³)			(mg/m³)	
	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year	Current	Short	80-year
Waikato at Mercer Br (9)	10.5	9.4	5.0	30	29	25	662	630	500	52	49	38
Waikato at Tuakau Br (4)	12.0	10.6	5.0	38	35	25	595	576	500	52	49	38
Komakorau (22)							2900			90		
Mangawara (17)							1890			210		
Awaroa (Rotowaro) at Sansons Br (19)							990			12		
Matahuru (14)							1310			98		
Whangape (16)							2116			122		
Waerenga (12)							1115			46		
Whangamarino at Jefferies Rd Br (8)							1085			88		
Mangatangi (2)							493			72		
Mangatāwhiri (1)							181			23		
Whangamarino at Island Block Rd (10) ²⁶							1831	1625	800	152	132	50
Whakapipi (3)							3875			51		
Ohaeroa (7)							1825			26		
Opuatia (11)							1070			31		
Awaroa (Waiuku) (5)							2095			46		
Waipā River FMU												
Waipā at Mangaokewa Rd (68)							585			16		
Waipā at Otewa (60)							366			20		
Waipā at Otorohanga (51)							600			22		
Waipā at Pirongia-Ngutunui Rd Br (43)							860			48		
Waipā at SH23 Br Whatawhata (34)							912			70		
Ohote (26)							1320			76		
Kaniwhaniwha (36)							590			29		
Mangapiko (38)							2095			240		
Mangaohoi (39)							365			52		
Mangauika (37)							275			8		
Puniu at Bartons Corner Rd Br (40)							910			48		
Mangatutu (47)							510			20		
Waitomo at SH31 Otorohanga (46)							755			30		
Mangapu (53)							1240			60		
Waitomo at Tumutumu Rd (52)							765			22		
Mangaokewa (63)							775			36		

²⁶ The Whangamarino at Island Block Road water quality monitoring site is representative of the surface water across Whangamarino Wetland. This is because the Whangamarino River and the wetland are hydrologically connected.

Table 3.11-1(d) – Dune, Riverine, Volcanic and Peat Lakes Freshwater Management Units

					Attributes				
Lake FMU	Annual Median Chlorophyll- <i>a</i> (mg/m ³)	Annual Maximum Chlorophyll- <i>a</i> (mg/m ³)	Annual Median Ammonia ²⁷ (mg NH₄-N/L)	Annual Maximum Ammonia ¹¹ (mg NH ₄ -N/L)	Annual Median Total Nitrogen (mg/m³)	Annual Median Total Phosphorus (mg/m³)	95 th percentile <i>E. coli</i> (<i>E. coli</i> /100mL)	80 th percentile Cyanobacteria (biovolume mm³/L)	Clarity ²⁸ (m)
	80 year*	80 year*	80 year*	80 year*	80 year*	80 year*	80 year*	80 year*	80 year*
Dune	12	60	0.24	0.40	750	50	540	1.8*	1
Riverine	12	60	0.24	0.40	800	50	540	1.8*	1
Volcanic Zone	12	60	0.24	0.40	750	50	540	1.8*	1
Peat	12	60	0.24	0.40 ²⁹	750	50	540	1.8†	1

*unless a lake is already of better water quality, in which case the water quality is to not decline

[†]1.8mm³/L biovolume equivalent of potentially toxic cyanobacteria or 10mm³/L total biovolume of all cyanobacteria

 $^{^{\}rm 27}$ The annual median and annual maximum ammonia have been adjusted for pH

²⁸ Median black disc horizontal sighting range under baseflow conditions

Catchment-wide nitrogen, phosphorus and *E.coli* reductions and visual clarity improvement required to achieve the water quality attribute states in the lower Waikato River mainstem

	E. coli	Ν	Р	Visual clarity
	(% reduction)	(% reduction)	(% reduction)	(%improvement)
Short-term	13%	5%	7%	37%
80 years	66%	24%	31%	186%

New map to be added

Map 3.11-2: Map of the Waikato and Waipā River Catchments, showing sub-catchments/ Te Mahere 3.11-2: Te mahere o ngā riu o ngā awa o Waikato me Waipā e whakaatu ana i ngā riu kautawa