

**BEFORE WAIKATO REGIONAL COUNCIL
HEARINGS PANEL**

UNDER the Resource Management Act 1991 (**RMA**)

IN THE MATTER OF Proposed Plan Change 1 to the Waikato Regional Plan
and Variation 1 to that Proposed Plan Change: Waikato
and Waipā River Catchments

LEGAL SUBMISSIONS

**ON BEHALF OF THE AUCKLAND/WAIKATO & EASTERN REGION FISH AND
GAME COUNCILS (“FISH & GAME”)**

Dated: 14 March 2019

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Auckland/Waikato and Eastern Fish and Game Councils (Fish & Game)

1. Fish & Game represents persons who live in, or travel to, the Waikato Region to fish or to hunt gamebirds.
2. Hunting and fishing are sports that involve food gathering, as well as recreation. These sports promote social wellbeing under section 5 of the Act. They rely on adequate habitat quality. Fish & Game has a statutory function to advocate for that habitat quality.¹ The protection of trout (and salmon) is recognised under section 7(h) of the Act.
3. Fishing is second most popular use activity in the Waikato catchment after 'swimming and paddling'.²
4. Unlike some other areas in NZ, for the trout fishery, hatchery-reared stock is not liberated into the Waikato or Waipā catchments on a regular basis so that habitat quality is very important.³
5. The Vision & Strategy refers to communities along the Waikato River. The fishing and gamebird communities are important ones, as I now outline.
6. In terms of fishing:
 - 6.1 Angler use in the catchments is as follows:
 - 6.1.1 approximately 17,230 angler days annually (combined use Waikato and Waipā Rivers) in the Auckland/Waikato Fish & Game Region;⁴ and
 - 6.1.2 approximately 3,510 angler days annually in the Eastern Fish & Game Region.⁵
 - 6.2 Fishing occurs primarily in Lakes Arapuni and Karapiro and the mainstem below the Karapiro dam - although the upper reaches of the Waipā are also surprisingly popular, given their relatively limited access and more limited trout fishing opportunity.

¹ Section 26Q(1)(e)(vii) Conservation Act 1987.

² Daniel EIC at [4.2.4] citing Phillips Y., 2014 "Non-market values for freshwater in the Waikato region: a combined revealed and stated preference approach" (2014).

³ Daniel at [4.1.5].

⁴ Daniel EIC at [4.2.4]

⁵ Daniel EIC at [4.2.3].

- 6.3 Dr Daniel, Auckland/Waikato Fish & Game's trout fishery Manager, discusses the significant declines in angler use in the Waikato and Waipā catchments. The evidence is that anglers are leaving these catchments to go to rivers that have not experienced the same water quality declines e.g. the Whakapapa and upper Whanganui Rivers.
- 6.4 Dr Daniel provides evidence on the migratory nature of trout in the Waikato River catchment, including the importance of the Waipā River tributaries as a sanctuary for trout in the summer months, and the need for trout to forage in the lower Waikato River.
- 6.5 Gamebird hunting is enjoyed in wetlands, lake and river margins in the Waikato and Waipā catchments. Mr Klee is Fish & Game's Gamebird Manager. Mr Klee sits on the Executive Committee of Waikato RiverCare and is a member of the Waikato and Waipā Peat Lakes and Wetlands Accord groups. He says that:
- 6.6 Hunters spend an average of 168,000 hours recreating in the Auckland/Waikato Fish & Game Region's lakes, rivers and wetlands annually.⁶
- 6.7 Auckland/Waikato Fish & Game have substantial ownership interests in wetlands in the Waikato, including due to the foresight of its predecessor, the Auckland Acclimatisation Society.⁷
- 6.8 Gamebird productivity and healthy populations are reliant on healthy freshwater ecosystems, in particular healthy wetlands and shallow lakes with functional basal food webs that contain a high density and diversity of invertebrates.⁸
- 6.9 There has been a decline in game bird populations.⁹
- 6.10 Approximately 7000 adult whole season gamebird hunting licences are held in the Auckland/Waikato Fish & Game Region. But there

⁶ Klee EIC at [4.3].

⁷ The Auckland/Waikato Council own some 1,700 ha of wetland, as shown in Figure 1 (page 9) and Figure 2 (page 21) Klee EIC.

⁸ Klee EIC at [4.8].

⁹ Klee EIC at [4.9].

has been a decline in licences - which were historically as high as 12,000.¹⁰

- 6.11 Licence income is used on wetland protection, restoration and enhancement.
7. It is ambiguous whether the identified *values* in PC1 represent the values of anglers and gamebird hunters. The Officers recommend that a subtle reading would include Fish & Game values. Fish & Game says that ambiguity causes inefficiencies – it will result in case by case argument in consent decision-making. This hearings process provides the opportunity to clarify these values. These are very popular recreational and food gathering values - it is inappropriate to rely on subtleties for their identification.

The Vision and Strategy

8. I submit that the outcomes in the Vision and Strategy do not compete.
9. The Objectives do recognise economic values stating that:
- 9.1 relationships with the river include economic, social, cultural and spiritual relationships;¹¹ and
- 9.2 the River holds strategic importance to NZ's social, cultural, environmental and economic wellbeing.¹²
10. But the recognition of the strategic importance of the River to economic wellbeing also states:
- “... economic wellbeing requires the restoration and protection of the health and wellbeing of the Waikato River.” (emphasis)*
- 10.1 This recognises that economic prosperity and the wellbeing of the Waikato River and its tributaries go hand-in-hand. Restoration and protection of the health and wellbeing of the Waikato River is compatible with prosperous communities and economic (as well as social, cultural, spiritual) wellbeing.

¹⁰ Klee EIC at [4.3].

¹¹ Objectives (b), (c) and (d).

¹² Objective (j): *“the recognition that the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic wellbeing is subject to the restoration and protection of the health and wellbeing of the Waikato River”.*

11. Dr Denne's evidence discusses the need for any economic analysis to acknowledge that the economy is dynamic. Resources can be re-deployed to new activities.¹³
12. The above interpretation must be accepted, because:
- 12.1 Restoration and protection of the health and wellbeing of the Waikato River is the overarching purpose of the settlement.¹⁴
- 12.2 In the Vision¹⁵, the life of the River is to be sustained so as to be "abundant". The communities are also to be sustained. There is an implicit assumption that sustaining the life of the river will, in turn, sustain the communities.
- 12.3 In the Vision, the communities are responsible for "*restoring and protecting*" the "*health and well-being of the river*".¹⁶ The focus is on the River.
- 12.4 The Objectives exist in order "*to realise the vision*"¹⁷ (emphasis).
- 12.5 The Strategies exist in order to "achieve the vision" and are to be followed.¹⁸ The Vision is pre-eminent.
- 12.6 Some of the strategies are very strongly worded e.g. (a) "ensure that the highest level of recognition is given to the restoration and protection of the Waikato River." (emphasis)
13. So, reading the Vision & Strategy, Fish & Game generally agrees with the analysis of Counsel for the Regional Council.¹⁹
14. For the purposes of this hearing, the following provisions of the Vision & Strategy are particularly relevant to Fish & Game's interests:

¹³ For example Denne at [4.20].

¹⁴ Waikato-Tainui Raupato Claims (Waikato River) Settlement Act 2010, s 10 states that 1 "the overarching purpose of the settlement is to restore and protect the health and wellbeing of the Waikato River for future generations."

¹⁵ "Our vision is for a future where a healthy Waikato River sustains abundant life and prosperous communities who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato River, and all it embraces, for generations to come."

¹⁶ The words "all it embraces" means that the matters relating to the health and the wellbeing of the River are not to be 'read down' or unduly confined.

¹⁷ Clause 1(3) States "*In order to realise the vision, the following objectives will be pursued...*".

¹⁸ Clause 1(2) states "*To achieve the vision, the following strategies will be followed...*". (Emphasis)

¹⁹ Opening legal submissions 11.03.19 at [48] "... it cannot credibly be suggested that economic considerations have priority under the Vision and Strategy."

- 14.1 “the protection and enhancement of significant ... fisheries”;²⁰
- 14.2 the references to “taking food” from the River;²¹
- 14.3 references to the “latest available scientific methods”²² (i.e. do not wait);
- 14.4 adopt a precautionary approach for potentially significant adverse effects;²³
- 14.5 “recognise and protect appropriate sites associated with the River that are of significance to the Waikato regional community”.²⁴
15. Fish & Game represents a community that has a “relationship to” the River and its catchments.²⁵

RELIEF THAT FISH & GAME IS SEEKING IN PC 1, BLOCK 1

Broad relief

16. Fish and Game’s submission is that changes must be made to PC 1 if it is to give effect to the Vision & Strategy and the NPSFM. Fish & Game’s submission requests:²⁶

“That the objectives of PC 1 and numerical attribute targets and limits are sufficient to safeguard life supporting capacity, ecosystem health and processes of fresh water, provide for the habitat of trout and indigenous fish, provide for primary contact recreation and cultural values including mahinga kai, and recognise and protect the natural character of rivers, lakes and wetlands.”

17. I deal first with the terminology issue: “objectives”, “limits” and “targets”. Ms Marr considers it vitally important to identify these matters clearly, for the

²⁰ Objective (i). Note the protection of trout and salmon is also recognised under section 7(h) RMA, consistent with this provision.

²¹ Objective (k).

²² Strategy (b), (c).

²³ Objective (f).

²⁴ Strategy (g).

²⁵ Objective (d).

²⁶ Original Submission page 13: PC1-11007 (9).

purpose of the NPSFM.²⁷ In Ms Marr’s experience, freshwater objectives that are a *mix of* narrative statements with references to numeric attribute tables are best practice. Ms Marr considers that:²⁸

- the objectives of PC1 (except Objective 4) are freshwater objectives for the purpose of the NPSFM; and
- the attribute states in Table 3.11-1 should also form part of the freshwater objectives.

18. Ms Marr supports the Officers’ use of the term “water quality attribute states” for Table 3.11-1 but considers that it should also be clear what the targets and limits are. There is no reason why something cannot be a freshwater objective as well as a limit/target, and this has been done in other plans such as Plan Change 6 for the Tukituki Catchment, Hawkes Bay Region.²⁹ Numerics for nitrogen, DRP, visual clarity and deposited sediment should apply as both freshwater objectives *and* limits/targets.

‘Scenario 1’

19. Fish & Game generally agrees with the explanatory material or narrative for Scenario 1, except that it does not identify sites of particular value for the trout fishery.³⁰
20. Fish and Game agrees with the Officers that settling upon the 80-year goal is not an exercise in balancing the needs of people, the economy and the environment. That approach would not give effect to higher level planning documents. The ‘bar’ must be set at a reasonable level for ecosystem health (and for other values that are relevant, such as fisheries).

²⁷ EIC Marr pages 21 – 22.

²⁸ Marr EIC at [107] - [108].

²⁹ Appendix 2 to Ms Marr’s evidence shows Table 5.9.1B for this Plan Change. Appendix 1 to Ms Marr’s evidence Table 3.11-1 shows how this could be presented in PC 1.

³⁰ Dr Canning’s numbers reflect a desired state generally consistent with Scenario 1, as expressed in Table 1, page 15 of Doole, G., Elliott, S., & McDonald, G. (2015). *Evaluation of scenarios for water-quality improvement in the Waikato and Waipā River catchments*. Healthy Rivers/Wai Ora project: Hamilton, NZ (Document 3564910).

Time for achieving Scenario 1

21. Fish & Game sought that a 20 year target be put in Objective 3, in addition to the 10 year target. Fish & Game sought that the 20 year target be 30% of the required change toward the 2096 goal for nitrogen.³¹ The submission stated:

“While the time limit (2026) for actions to be put in place and implemented has been set, no ‘short term’ defined timeframe for the achievement of targets for water quality required by Objective 3 has been set in either Objective 3 or Tables 3.11-1.”

“... short term water quality targets must be set to a specific point in time.”

“Some short term targets can be easily achieved within 5 or 10 year timeframe, such as a reduction in E Coli concentrations at median flow and below. Others, such as the 30% nitrate-nitrogen reductions from current leaching requested by Fish and Game will require 20 year targets”.

“... short term targets fail to establish a trajectory of progress towards foreseeably achieving these outcomes.”

22. The meeting Minutes of the CGS 26 May 2016 state:

“The dilemma ... is that the [CSG] needs to give people confidence that the first stage ‘does enough’ ... while recognising that it does not know how future allocation based on land suitability will affect future landowners”.

23. Leaving aside modelling as to what the ‘policy mix’ in PC 1 will actually achieve,³² the objective itself is very important.

³¹ PC1-10809.

³²Section 32 report Page 77 table - there may be ‘overs and unders’ of the achievement e.g. there may be over-achievement but then attenuation must be considered.

24. Officers provide little analysis on submissions seeking to have higher short-term or medium term goal(s), except stating that the social and economic implications may be greater than anticipated.³³

25. Dr Denne's economic evidence for Fish & Game is:³⁴

“Cost analysis provides only one side of the equation and does not provide a sufficient basis for assessing whether any level of environmental quality is preferred, in terms of impacts on regional wellbeing.” (emphasis)

“There has been no obvious attempt to undertake a full cost benefit analysis (CBA), and the reports by Doole et al. do not provide this information.”

26. The Council's current modelling is not sufficiently comprehensive to support the 10% objective, or to reject more ambitious medium-term objectives.

27. As I now outline, the reasons for adopting only a 10% objective were largely based on:

27.1 limited and problematic economic analysis,

27.2 indicators that sit outside the RMA; and

27.3 a sub-group exercising judgment that sat outside the First Schedule process (and excluded Fish & Game).

(Noting that attenuation issues were also a reason for the objective).

28. The CSG analysed steps (10%, 25%, 50% and 75% toward the 80-year target) against a series of environmental, social and economic “indicators”.³⁵ The indicators were chosen based on what people value about the Waikato Catchment as well as the ways they use the land and rivers. Unfortunately Fish and Game was not a member on the CSG and was not able to have any substantial input.

29. The “indicators” are separate to the purpose and principles of the RMA, the Vision and Strategy and the NPSFM.³⁶ Although some do inter-relate with

³³ E.g. at [527] Section 42A Report.

³⁴ Denne EIC at [5.1] – [5.2].

³⁵ CSG process - discussed at pages 73-74 Section 32 Report.

³⁶ A Technical Leaders Group convened on 23 September 2015 to assess the outputs of a second round of modelling, for the 10, 25, 50 and 100% steps toward scenario 1: Wedderburn and Coffin (2016) Integrated Assessment One: Assessment of Scenarios from modelling round one. Report No. HR/TLG/2015-2016/6.2

statutory requirements, an indicator such as “*minimise social disruption and provide social benefit*” could be interpreted to mitigate against *any* change.

30. Dr Denne’s evidence is that, for Round 2 (cost estimates for achieving to achieving different step-wise changes toward Scenario 1):
- 30.1 The Doole *et al* (2015b) Input Output (IO) analysis is only useful in-so-far as it captures the immediate impact on farm level profit.
 - 30.2 The ‘downstream’ cost component of the IO analysis (effects on jobs and other industries e.g. retail, transport and utility sectors) must be disregarded because it proceeds on inappropriate assumptions.³⁷ Guidance from NZ Treasury emphasises this limitation of IO analyses.
 - 30.3 The analysis does *not* show a marked change in the cost curve at 10% or 25%. If equidistant intervals were used on the x-axis, the cost curve is smoothed.³⁸
 - 30.4 It is unclear why Doole *et al* did not present the 10% and 25% steps except on a “constrained land use” basis³⁹ - an unconstrained basis would have identified lower costs for these steps.⁴⁰
 - 30.5 The higher costs presented in Doole *et al* 2015 are exacerbated by CSG criteria that used the word “realistic”.⁴¹ Applying this criteria over-weighted the short-run costs already included in the economic modelling,⁴² but this formed part of the reason the CSG chose to limit improvements required, to 10% of Scenario 1.
 - 30.6 Without a full cost/benefit analysis, there was simply insufficient information to apply the policy selection criterion: *Optimises environmental, social and economic outcomes*.⁴³

2016a: did not attempt to monetarise benefits of achieving scenario 1 (such as benefits of increased recreational use) but provides a narrative and a judgment on the trend that would be observed for each indicator (scale 1-5).

³⁷ Denne EIC at [4.23] – [4.24].

³⁸ Denne EIC at [4.5] – [4.8] and Figure 1 on page 8

³⁹ Extent of land use change constrained to within the range observed in the last 40 years.

⁴⁰ Denne EIC at [4.9].

⁴¹ “*Realistic to implement, monitor and enforce*” and, under the criterion “*Optimises environmental, social and economic outcomes*”: “*provide realistic timeframes for change*”.

⁴² Denne EIC at [6.1] – [6.4].

⁴³ Denne EIC at [6.9].

31. The Doole *et al* (2015) IO analysis may then inform one small piece of the puzzle that forms the whole cost/benefit analysis for the purpose of section 32. It quantified immediate costs at a snapshot in time. That is, immediate impact on profits when the policies and rules ‘kick in’. Doole *et al* (2015) does not provide information on what would occur over time in terms of regional costs or impacts, such as would a general equilibrium (GE) analysis.
32. The third round⁴⁴ of scenario modelling appeared to jump to the cost of the policy mix to achieve 10%. This was also flawed because the estimated costs of implementing the policy mix (with varying levels of Iwi land development) were overstated. This analysis assumed that the reductions would need to be achieved without *land use change* (e.g. from dairy or horticulture to something else). It focussed on what would be required to reduce discharges from current activities.
33. A conclusion may be reached that the 10% was (inappropriately) based on costs to existing sectors. But the assessment under section 32 should have been made on the basis of costs to the Region, not costs to particular sectors.
34. Dr Denne says that research suggests 10 years is adequate time for *significant* change, and does not need to rely upon development of new technologies (for example land use change from say dairy to forestry).⁴⁵
35. Dr Denne says it would be informative to do a full CBA. Under the RMA I note that the assessment of an *objective* for water quality does not require such.⁴⁶
36. To the extent you may be required to consider costs, although Fish & Game has not done an economic CBA, a non-market valuation study for the Waikato River Catchment was undertaken using stated and revealed preference techniques (including a survey) and household “willingness to pay” to improve water quality.⁴⁷ The total value of a 30% reduction in N and P had a medium

⁴⁴ Summarised at pages 74-76, Section 32 Report.

⁴⁵ Denne EIC at [6.3] – [6.5].

⁴⁶ The analysis is the extent to which the objectives are the most appropriate way to achieve the purpose of the Act: section 32(1).

⁴⁷ To certain levels on the basis of water clarity, human health risk based on e-coli counts, and N and P but using less technical descriptions.

estimated value of \$22 million per annum (to NZ), \$6 million attributed to the Waikato Region.⁴⁸

37. While the authors of that study said that it was not suitable to assess the impact of different central and regional government water quality policies on non-market values, Dr Denne concludes that the analysis does show the monetary benefits estimated are in the same *order of magnitude* as the costs for the 10% or even the 25% shift toward Scenario 1.⁴⁹ It is correct that no other submitter has provided an evaluation as comprehensive as Council's section 32 evaluation, but ultimately there is nothing substantive in the Council's analysis that supports 10% as distinct from 25%, or (conversely) provides grounds for rejecting a 30% medium-term (e.g. 20 year) objective.

Table 3.11-1

38. Fish & Game is seeking *inter alia*:
- 38.1 (Original submission): The introduction of additional attributes as limits and targets, including for chlorophyll a, clarity, MCI.⁵⁰
 - 38.2 (Variation 1 submission): 'regional bottom line' attribute states for DRP, Nitrate-nitrogen, MCI and e-coli.⁵¹
 - 38.3 (Variation 1 submission) - deposited sediment and periphyton in hard-bottomed streams, and add estuary trophic index for Port Waikato Sub-catchment.⁵²
 - 38.4 Water clarity is set according to specific ecosystem health, swimming and fishing values.⁵³
 - 38.5 Ecosystem health states are consistent across all attributes.⁵⁴
39. In its submission on Variation 1, Fish & Game refined and clarified amendments that it sought in Table 3.11-1 from its original submission. It

⁴⁸ Denne EIC at pages 18 – 19 citing Marsh and Mkwara (2013) Review of Freshwater Non-market value studies University of Waikato.

⁴⁹ Denne EIC at [5.12]: he also says that the costs have likely been overestimated and the benefit is likely underestimated.

⁵⁰ Original submission page 14: PC1-11007 (10).

⁵¹ Variation 1 submission: V1PC1-278: Include attributes, limits and targets that reflect the states sought in Appendix 2 to Fish & Game's further submission and consistent with Appendix 1 to that submission.

⁵² Variation 1 submission: V1PC1-299.

⁵³ Variation 1 submission: V1PC1-293: Submission stated include a clarity target of 2m for trout fishing values in the main stem and 3.75m for trout spawning and significant rivers.

⁵⁴ Variation 1 submission: V1PC1-289.

sought specific 'bands' for some sites, and additional attributes. These matters are dealt with in Dr Canning's evidence. Some of the 'numerics' sought in Dr Canning's evidence for Fish & Game differ from its original and further submissions due to updates in scientific information.⁵⁵

40. Dr Canning shows numerics for 6 ecosystem health attributes showing attribute states that would achieve Excellent, Good, Fair, Poor and Very poor states.⁵⁶ Dr Canning's Table A4 represents attributes for Table 3.11 for the purpose of adequate reflection of Scenario 1 together with values for sites of significance for the trout fishery, at specific subcatchment sites that have been identified by Dr Daniel.⁵⁷ Dr Canning also recommends an Estuary Trophic Index (ETI) numeric for the Waikato Estuary.
41. Fish & Game supports expression of nutrient attribute states as a *load* as well as a concentration. A load represents the total mass of a contaminant which passes a point over a defined time period. As stated by Ms Marr,⁵⁸ without loads it will be difficult for the Council or others to understand if resource consents granted under PC1 are making sufficient progress toward the objectives. Dr Canning's evidence is that numerous methodologies exist to calculate loads in situations where concentration data is collected discretely from flow data. While no methodology is perfect, previously he has estimated nutrient loads using the average of 3 methodologies.⁵⁹ Dr Canning has sourced existing in-stream nutrient *loads* for the tributaries and has applied the same percentage reductions to these that would be required for the *concentrations*, to reflect desired state.

Planning issues on a medium-term objective

42. As stated, Fish & Game sought a 20 year objective be included in PC 1 that 30% of the 2096 goal (for nitrogen) be achieved in-stream, while for other attributes earlier achievement is possible.
43. It is not correct that because the life of the plan is 10 years then medium-term objectives beyond that period do not need to be considered.

⁵⁵ Dr Canning recommends that targets/limits should for nitrogen and phosphorus should not diverge more than 20% from 'natural state' of the waterbody concerned, based on Clapcott *et al.*

⁵⁶ Table A1: DRP, N-N, %MCI reduction, Fish Q-IBI, DO and deposited fine sediment.

⁵⁷ Daniel EIC at [4.5.6] and Table 1 (page 15) applies 2.0 m for Waikato River at Horotiu Bridge and different water clarity bottom lines for nationally significant streams, regionally significant streams and significant trout spawning streams

⁵⁸ Marr EIC at [133].

⁵⁹ Canning EIC at [3.40].

44. If another regime is to be put in place by 2026, that would require another review to be initiated in, say, 2023. As that review is intended to contain allocation mechanisms, it will not be a simple one. Realistically, this Panel must recognise that delays occur and that provision for objectives beyond 2026 should be included now.⁶⁰
45. The term of consents to be granted under PC 1 is a matter that Fish & Game will make further submissions on in other hearing Blocks. But, as pointed out by Ms Marr, consents granted under PC1 could conceivably have a longer term than the life of the plan.
46. If this plan change is to lay a foundation for the methods in the Waikato Freshwater Strategy, one of the most important things it must *not* do is to entrench current land use or expectations of such.⁶¹ Reliance cannot be placed on the ability to review consent conditions at a later date.⁶² Other Councils have shown a reluctance to do so. The Officers Report discusses the importance of signals for the future, and the need for certainty before setting any medium-term goal.⁶³ These policies are incompatible. Signals for the future requires a trajectory be put in place now, including with attribute states for the medium term, even if that trajectory is to be ‘finessed’ in a future plan change. Otherwise there is a real risk that the ecosystem health and other values will not be achieved in the long-term.

Objectives must be time-bound

47. PC 1 relies on actions and not achievement.⁶⁴ Ms Marr’s evidence is that this is inadequate and does not comply with the NPSFM. It is not appropriate for targets/limits to be purely ‘aspirational’.⁶⁵

⁶⁰ Legally the requirement for a review exists in 10 years after PC1 is made operative. Assuming the current plan change becomes operative in 2019/2020 EW must commence the review in 2029/2030. However depending on resolution of appeals on this plan change, Ms Marr provides a realistic timeline where another plan change may not be notified until 2034 – 2037: Marr EIC at [121].

⁶¹ Section 42A Report at page 95.

⁶² Under section 128 of the RMA or 68(7): “Where a regional plan includes a rule relating to ... minimum standards of water quality ..., the plan may state—

(a) whether the rule shall affect, under section 130, the exercise of existing resource consents for activities which contravene the rule; and
 (b) that the holders of resource consents may comply with the terms of the rule, or rules, in stages or over specified periods.”

⁶³ Section 42A Report at [391]: “*Objective 3 provides, with certainty, what improvements to water quality are required within the next ten years and subsequently, the expected improvements in management practices to reduce contaminant loss from farming activities. There is insufficient information available to determine what types of improvements and at what rate they would be required over the following years ...*”.

⁶⁴ The short-term objective is not intended to be what will be seen in the water in 10 years, but rather is based on the predicted end point of water quality, which may be some future point in time.

⁶⁵ Ms Marr’s rebuttal evidence rebuts Mr Scrafton’s evidence, on behalf of Watercare Services, that the targets/limits should be aspirational. In relation to his concerns regarding point-source discharges from regionally important infrastructure, following the 3 ‘catchment based’ plan reviews, the PIP has scheduled to

48. Time-bound targets are a requirement of the NPSFM.⁶⁶ Ms Marr acknowledges potential lag times, so that the targets for nitrogen may be stated with different (longer) timeframes than for other contaminants.
49. Ms Marr suggests how time-bound targets could be reflected in Objective 3, while still allowing for lag times.⁶⁷ Fish & Game does not have an expert on attenuation/lag and Dr Canning has simply set out (in his Tables A2 and A3) lag times from the publication Semadeni-Davies, A., Elliot, S. & Yalden S. 2015 *Modelling Nutrient Loads in the Waikato and Waipa River Catchments: Development of catchment-scale models* Hamilton, NIWA. While Ms Marr has suggested Objective 3 of PC1 could provide for meeting attribute states in-stream, at a later date than the 'actions', Fish & Game's position is that any in-stream attribute states must also have sufficient steps (e.g. 20%, 30%) to ensure that the 80 year state can be met.
50. As stated by Ms McArthur⁶⁸, the 10% change toward an 80-year state, with no appropriate interim step, does not set a straight-line trajectory for achieving long-term objectives for water quality. Rather it relies on a 'miracle happening' between 10 and 80 years. Fish & Game wishes to reserve its position on what the steps for the dates in Ms Marr's Objective 3 should be, while it considers outcomes of expert (freshwater conferencing). In the interim, it continues to seek *achievement* of 20% instream for nitrogen in 30 years, and earlier for other attribute states.

Scope to consider other contaminants

51. The following addresses whether submissions seeking additional attributes in Table 3.11-1 are 'on' the plan change. I understand the Panel would like

be a review of the plan as a whole to address matters that are outstanding, for example "...Policy C2 regarding integrated management of the effects from use and development, encouraging co-ordination and sequencing of growth, land use and development and infrastructure."

⁶⁶ A target under the NPSFM is a limit which must be met at a defined time in the future.

⁶⁷ Ms Marr's recommended Objective 3 states (underlining is additional to section 42A Report version):

"Actions put in place and implemented by 2026 to reduce diffuse and point source discharges of nitrogen, phosphorus, sediment and microbial pathogens contaminants, are sufficient to achieve the short-term water quality attribute states in Table 3.11-1 by 2030 (for contaminants other than nitrogen) or 2035 (for nitrogen) ten percent of the required change between current water quality and the 80-year water quality attribute targets in Table 3.11-1. A ten percent change toward the long-term water quality improvements is indicated by the short-term water quality attribute targets in Table 3.11-1.

Actions put in place and implemented by 2036 to reduce diffuse and point source discharges of contaminants, are sufficient to achieve the medium-term water quality attribute states in Table 3.11-1 by 2040 (for contaminants other than nitrogen) or 2045 (for nitrogen)."

⁶⁸ MacArthur EIC for the Director-General of Conservation at [139].

further submissions on this matter after conferencing between the freshwater experts.

52. Fish & Game attempted to get to the bottom how the plan was confined, in the background documents to PC1, but has encountered a lack of clarity.⁶⁹ Fish & Game requested from Environment Waikato the document that clearly discussed and addressed the scope of PC1 being confined to 4 contaminants (to the exclusion of other water quality parameters).⁷⁰ Fish & Game's environmental officer Ms Sintenie received a letter of response⁷¹ stating:

"It is understood that agreement as to scope was concluded as an iterative process across a number of interactions."

53. Whether a submission is "on" a plan change, primarily requires an examination of the plan change itself as distinct from extraneous material.⁷² The settled tests involve:⁷³

1. Examining the extent to which the variation (or plan change) changes the pre-existing *status quo*.
2. Whether the submission would allow the planning instrument to be appreciably amended without real opportunity for participation by those potentially affected.

54. On the first question, PC 1's Explanatory Statement says:

⁶⁹ 2010 Waikato River Independent Scoping Study (WRISS) – managing the effects of contaminant discharges - not confined to 4 contaminants; August 2012 Council decision on receipt of Partnership Charter – to address "effects of discharges" to the Waikato River catchment – not confined to 4 contaminants; 2013 Opus Review of WRP against the Vision and Strategy – not confined to 4 contaminants; 2013 Stakeholder Engagement Strategy – "*Project partners will consider methods that manage the effects of activities that have a bearing on how much nutrient, sediment and bacteria enter water*". 2014 Te Rōpū Hautū (joint steering group established to fulfil settlement legislation requirement including general content of document for notification) – refers to "Four main contaminants" (emphasis) but does not refer to the exclusion of any other contaminants. The 2014 Terms of Reference for the CSG refers to "sediment, bacteria and nutrients" but also to giving effect to the NPSFM.

⁷⁰ Fish & Game's request stated: "Could you please provide me with the document referenced on P2 of this document <https://www.waikatoregion.govt.nz/assets/PageFiles/28959/2/40%20-%203037840.pdf> where it says:

"In late 2012, using the resolution as the guiding document, the partners agreed what would be in-scope and out-of-scope."

I'm not sure if there is record of the agreeance in late 2012 but I request that record as to scope if that is available."

⁷¹ Letter dated 7 February 2019.

⁷² In relation to the section 32 Report, in *Hawke's Bay Fish and Game Council v Hawke's Bay Regional Council* [2017] NZEnvC 187 at [42]; "*neither the s 32 report nor the public notice are determinative of scope but each is a document that can assist interpretation of the intention of the notified [plan change]*".

⁷³ *Clearwater Resort Limited v Christchurch City Council*(HC) Christchurch AP 34/02 (Young J) *Palmerston North City Council v Motor Machinists Limited* [2014] NZRMA 519, at [74]-[83].

“This document is a change to the Operative Waikato Regional Plan (WRP), to restore and protect water quality in the Waikato and Waipā Rivers by managing discharges of nitrogen, phosphorus, sediment and microbial pathogens to land in the catchment, where it may enter surface water or ground water and subsequently enter the rivers, or directly into a water body.”

55. Chapter 3.11 Background and Explanation states:

“The NPSFM process followed in developing Chapter 3.11, included identifying FMUs and the values for each, and then choosing relevant water quality attributes and attribute states that can be monitored over time. Freshwater objectives and limits or targets set out what is required to achieve the attribute states. ...”

56. The overall purpose of PC1 relates to the Vision and Strategy and fulfilling the requirements of the NPSFM for the relevant catchments. In terms of water quality, the *status quo* (the WRP) is to be altered to a substantial extent for the catchments. A key part of PC 1 is the management of *cumulative* adverse effects - a matter that is not adequately provided for in the WRP.⁷⁴ For this purpose (and for the purpose of fulfilling requirements of the NPSFM) PC 1 introduces FMU’s and values. If parties are able to submit that certain values should be modified/added, surely there may be other water quality contaminants or attributes that are required to be addressed for managing the additional or altered values.⁷⁵

57. Ms Marr’s interpretation of the Councils Progressive Implementation programme (PIP) is that Waikato Regional Council intends to implement the NPSFM for each catchment in turn (beginning with Waikato and Waipā),⁷⁶ and only leaving miscellaneous matters till later. There would be obvious problems with considering the 4 contaminants now and leaving until later, consideration of additional contaminants/desired attribute states.

⁷⁴ As identified in the Opus 2013 review “... a cumulative effects approach to the Waikato River does not specifically exist and will need to be more explicitly stated and given effect to in the regional plan review process.”

⁷⁵ For example, from Fish & Game’s perspective, increased requirements for water clarity: Dr Daniel’s evidence discusses this attribute in relation to the needs of the trout fishery.

⁷⁶ Marr EIC at [32].

58. Although PC 1 refers to “*managing discharges of nitrogen, phosphorus, sediment and microbial pathogens*”, it does not say that managing those discharges precludes the use of other attributes. Dr Canning’s evidence is that matters that drive ecosystem health in a waterbody are inter-related. For example, the MCI and Fish Index of Biotic Integrity are direct measures of ecosystem health and can be used to measure the *success of* the management nutrients, e-coli and sediment; the attribute of dissolved oxygen is related to the management of nutrients and periphyton biomass.⁷⁷ Dr Canning says:

“... ecosystems are complex networks where indirect interactions are typically more dominant than direct interactions...”

59. The TLG excluded considering any attributes where the four contaminants were not “direct drivers”.⁷⁸ Dr Canning says this approach ignores ecological reality.⁷⁹

60. So the question is not whether PC 1 is limited to 4 contaminants, but rather whether PC1 is limited to attributes that are ‘direct drivers’ for the four contaminants. Here the scope argument of some other parties⁸⁰ unravels. What is a direct or an indirect driver may be a matter of debate among freshwater ecologists.

61. The *merits* of including the additional attributes is separate to the issue of scope. Fish & Game wishes to await the outcome of freshwater conferencing before making supplementary submissions on the merits of additional attributes but makes the following comments on the *approach* to attribute selection.

Importance of the Precautionary approach to attribute selection

62. Dr Canning considers the attribute selection criteria adopted by the Technical Leaders Group does not comply with the precautionary approach.⁸¹ Dr Canning does not consider that the limited attributes in PC1 would adequately

⁷⁷ Canning EIC Appendix 2.

⁷⁸ Canning EIC at [3.20] - Criterion 3.

⁷⁹ Canning EIC at [3.25].

⁸⁰ E.g. Meridian.

⁸¹ Canning EIC at [3.22] – [3.25].

manage for the value of ecosystem health⁸² and that ignoring indirect links is fraught with risk. Dr Canning sits on the Science and Technical Advisory Group for the Government's *Essential Freshwaters* package of reforms and says there is a strong recognition in that group of the need to consider the precautionary principle, links between attributes and other components of ecosystem health.⁸³

63. Dr Ausseil, giving evidence for the Waikato and Waipā River iwi, poses the question:

“Is the level of knowledge and understanding sufficient to confidently set nitrogen and/or phosphorus limits to control periphyton growth or meet desired ecosystem health?”

64. Dr Ausseil answers this question in the negative and, in rebuttal to Dr Canning's evidence, states that in the Gisborne Regional Plan process (the proposed freshwater plan change for the Waipaoa catchment):⁸⁴

“... all experts, including Dr Canning agreed that sensible DIN and DRP limits could not be developed given the state of knowledge.”

Dr Ausseil attaches to his evidence the Joint Witness Statement from that Gisborne process.

65. In assessing the state of knowledge, each case turns closely on its facts. I invite you to question Dr Canning about the differences between the Waipaoa catchment in Gisborne and the Waikato and Waipā catchments here.
66. What some of the other parties fail to acknowledge is that a precautionary approach must be taken where we have imperfect information, and this means we should be slow to exclude tools in our 'freshwater management toolbox'. That does not mean that all numerics must be hard limits – some may only operate as freshwater objectives.⁸⁵ Although the phrase 'robust scientific information' is an attractive one, the Vision and the RMA provide for the precautionary approach and direct us to act on the *latest available* scientific

⁸² Canning EIC at [3.16]: including % MCI reduction, Fish Index of Biological Integrity (Q-IBI), DO, and (for estuaries) estuarine trophic index.

⁸³ Canning EIC at [3.24] – a different approach to that which informed the NOF in the current NPSFM.

⁸⁴ Ausseil rebuttal at [33].

⁸⁵ Marr EIC at [210].

methods (and maatauranga Maori),⁸⁶ not “perfect” or even “robust” information.

Wetlands

67. Within PC 1 there are approximately 16,000 ha of identified wetlands, the majority falling into the Lower Waikato FMU.⁸⁷ The Plan does not meet higher-level planning direction in relation to wetlands. For the Whangamarino, which is an outstanding water body, there is insufficient confidence (or analysis) that actions in the catchments will achieve what is necessary for the Whangamarino.
68. All wetlands in the Region meet section 6(c) criteria of the WRPS.⁸⁸ The WRPS directs wetland quality and extent be maintained and enhanced.⁸⁹
69. Ms Marr considers Objective 6 should be retained and revised so that it appropriately recognises the importance of the Whangamarino wetland.
70. Fish & Game supports the desired attribute states proposed in Dr Robertson’s evidence for the Director-General of Conservation (narrative states for all wetlands with numerics for the Whangamarino wetland). Prior to numerics being developed for all wetlands, more specific narrative attribute states would provide needed guidance as to the outcomes sought for wetlands.
71. Fish & Game seeks a separate FMU for the Whangamarino wetland, which is an outstanding water body under the NPSFM.⁹⁰ Mr Klee’s comments are supported by Campbell, D. 2016 “*Should the significant values of the Whangamarino Wetland be protected by establishing a ‘wetland FMU’?*” Report to CSG Workshop 22.
72. There is difference between the needs of the sub-catchment and that of the wetland. Both must be managed. Wetland management is quite different to river management. Total loads rather than concentrations are relevant.

⁸⁶ Strategy (c) of the Vision & Strategy.

⁸⁷ Klee EIC at [5.3].

⁸⁸ Klee EIC at [5.10].

⁸⁹ Klee EIC at [5.8].

⁹⁰ Klee EIC at [6.16].

73. Fish & Game says this requires a separate FMU for the wetland. There is currently limited analysis of how river attributes are sufficient for the purpose.⁹¹ For sediment, the effect is highly related to the hydrological regime and this may require special consideration for Whangamarino FMU attributes (at high water levels the wetland is vulnerable to increased sediment and nutrients delivered through flood waters).⁹²
74. The additional reliance on catchment management planning is insufficient.⁹³
75. Mr Klee has been involved in the Catchment Management Plan process for Lake Waikere and the Whangamarino wetland. Although he says the plan contains many worthwhile actions, in his experience we cannot rely on a non-statutory plan to achieve the environmental outcomes that are needed for the Whangamarino.⁹⁴ Caselaw supports the need for a regulatory backstop for section 6(c) landscapes.⁹⁵
76. It is also insufficient to rely on the recent Consent Order resolving appeals on the s128 review of the Lake Waikare Gate consent.⁹⁶ The new consent conditions for the discharge of water from Lake Waikare Gate require the manager of the scheme (ICM) to apply under section 127 of the Act, for a change of conditions to another consent (for the operation of the Te Onetea Control Gate). As Mr Klee states,⁹⁷ although it is *hoped* that the adaptive management framework set out in the new consent conditions will achieve improvements, there are still uncertainties regarding the achievement of the sediment reduction targets in that Consent Order.
77. For consent applications and/or reviews that relate to the Whangamarino wetland, it is important that the planning regime provides guidance that is consistent with the higher-level policy documents.

⁹¹ Dr Robertson's evidence is that river attributes in Table3.11-1 are insufficient for this purpose.

⁹² As stated by David Klee at [6.23] and at [6.27]: "*When water levels rise, velocities slow and sensitive areas of the wetland get inundated. This leads to deposition in those environments. For this reason, an annual reduction in nutrients and sediment load may do little to protect the most sensitive parts of the Wetland if most of those reductions occur during low flow conditions. Thought needs to be given to managing contaminants under fluctuating water level regimes and at times when sensitive parts of the wetland are most susceptible.*"

⁹³ Klee EIC at [6.31].

⁹⁴ Klee EIC at [6.32].

⁹⁵ *RFBPS v New Plymouth District Council* [2015] NZEnvC 219 (Judge Dwyer presiding);

⁹⁶ Section 42A Report at [490]: states that a suite of resource consents for the lower Waikato Flood Protection Scheme was granted in 2002 for a duration of 35 years (expiring 2037). Officers state that amendments to one of the consents, under a section 127 review (to discharge water from the Lake Waikare Gate through the Pungarehu Canal to the Whangamarino Wetland) "*will likely result in sediment deposition and improvement of water quality in the Whangamarino Wetland, in addition to the reduction of the contaminant inputs from contributing Lower Waikato River FMU.*"

⁹⁷ Klee EIC at [6.17].

78. The Waikato Regional Plan does not appropriately provide for wetlands, and there is evidence that wetland decline is continuing under the current provisions.⁹⁸ Although the Section 42A Report⁹⁹ suggests that sections 3.1 and 3.7 of the operative Waikato Regional Plan (WRP) already provide for wetland management activities, those sections do not provide for managing the contaminant loading of wetlands.
79. For wetlands generally, Mr Klee has been involved in many (over 47) discrete restoration and enhancement projects around wetlands, lakes and rivers in the Waikato Region in the last ~10 years.¹⁰⁰ Although the true extent of wetland loss in the Waikato Region is not known, he says:¹⁰¹

“... for every project completed in the Region, there appears to be other wetland sites being drained or degraded at an even faster rate.”

Lakes

80. Mr Klee for Fish & Game and Dr Ngaire Phillips for the Director-General of Conservation, provide evidence on the deficiency of PC1 in providing for the Region’s shallow lakes. PC 1 is deficient because it sets unambitious 80-year attribute states for lakes, and does not set short, or even medium, term states. Fish & Game supports the Director-General’s relief seeking faster and more integrated management for lake catchments, and short and medium term desired attribute states for lakes.¹⁰²
81. There are 59 lakes in the Region that, combined, total approximately 6022 hectares.¹⁰³ It is important that these lakes attain adequate attention and resourcing, including through management actions that are prioritised appropriately.
82. Mr Klee gives an example of Lake Whangapae, an important riverine lake in the Region, having significant populations of black swan where black swan was not found in other riverine lakes. Unfortunately that lake experienced

⁹⁸ Marr EIC at [22], Klee EIC at [5.15] – [5.16] and [5.30]; , Objective 3.1.2 and Policy 1 of the Operative plan focus on the natural character of wetlands and an increase in the extent and quality of the Region’s wetlands. While these goals are laudable, they do not provide sufficient direction.

⁹⁹ At [311].

¹⁰⁰ On DOC, Fish & Game, Waikato Regional Council and private land: Klee EIC at [5.14].

¹⁰¹ Klee EIC at [5.14].

¹⁰² To be presented by Dr Phillips at the hearing of DOC’s submission.

¹⁰³ Phillips EIC at [41].

complete aquatic plant collapse between 1985 and 2004 and black swan populations have declined significantly.

83. If urgent action is not taken for other lakes that have not yet 'flipped', the Region will see the same outcomes in its (currently) better lakes.
84. Even for those lakes that have degraded water quality, the long timeframe that it can take to return lakes to an acceptable state indicates that we also need to act now and that we cannot afford to put this matter in the 'too hard' basket.¹⁰⁴
85. A multi-pronged management approach is required and, in relation to PC1, managing external nutrient loads to lakes is essential.
86. Fish & Game supports DOC's submission that:
 - 86.1 A more refined approach to identifying FMU's for lakes e.g. based on 12 lake classes in Ozkunadakci D. 2015 "*An approach for reconciling the lake type classification for the Waikato Region*" Technical Memo, Waikato Regional Council. This would have benefits including ensuring monitoring programmes are appropriately designed.¹⁰⁵
 - 86.2 Alteration to priorities as sought by DOC, that acknowledge that some lakes have excellent restoration potential, including through quite feasible land management actions.¹⁰⁶
 - 86.3 Realistic but ambitious long, medium and short term attribute states for lakes, that do not simply rely on NOF bottom lines.

Waikato Estuary

87. The NPSFM requires nutrient loads in rivers are set to ensure the desired state of the most sensitive downstream environment is achieved.

¹⁰⁴ Which appears to be the approach in the section 42A Report: Klee EIC at [7.22].

¹⁰⁵ As distinct from the 4 lake classes in PC 1, that are only categorised on the basis of geomorphological origin: Philips at [75].

¹⁰⁶ E.g. Lake Rotomanuka: Klee EIC at [7.19] - [7.28]

88. Dr Daniel's evidence is that, although Waikato and Waipā river trout have access to the estuary, they may be the only known brown trout population that does not migrate to take advantage of the abundant forage fish normally found in estuaries. It is likely that poor water quality is the primary reason that trout no longer utilise the Waikato estuary.¹⁰⁷
89. As stated by Ms Marr,¹⁰⁸ Policy 21 of the NZCPS 2010 "Water Quality" requires prioritising the improvement of deteriorated coastal water quality where it is having a significant adverse effect on ecosystems, natural habitats or water based recreational activities, or where it is restricting existing uses including aquaculture, shellfish gathering and cultural activities. Fish & Game considers that an ETI measure is required for this purpose. Dr Canning recommends a Estuary Trophic Index (ETI) bottom line of 0.75.¹⁰⁹

Conclusion

90. Fish and Game's submission is that PC1 does not resolve the dilemma stated by the CSG in 2016. That is, PC1 does not give people confidence that the first stage 'does enough'. A trajectory must be put in place, including with medium-term objectives, so that we can be confident we achieve the targets that reflect ecosystem health, and other values, in the long-term.

¹⁰⁷ Daniel EIC at [4.4.7]: deterioration in the health of the estuary has also been impacted the whitebait fishery.

¹⁰⁸ Marr EIC at [37].

¹⁰⁹ Canning EIC Table 2 (page 27).