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

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LEGAL SUBMISSIONS

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

'Block 3'

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Introduction

1. Fish & Game has filed the following responses to Blocks 1 and 2:

   1.1 Block 1: Memorandum of Counsel dated 21 May regarding definition of artificial/constructed wetlands and attaching update to Dr Daniel's Primary evidence Table 1 (to include current median water clarity).

   1.2 Block 1: Memorandum of Counsel dated 16 July attaching responses of Dr Canning on the extent 'hard bottomed' streams covered by PC1, and commenting:[1]

   > "…*the stimulatory effects on periphyton is not the only mechanism by which nutrients can affect ecosystems. Therefore I do not propose managing nutrients only for the purpose of managing periphyton growth*."

   1.3 Block 2: Memorandum of Counsel dated 24 July attaching responses of Dr Eivers, on the cost of taking land out of production and fencing should the Panel accept the evidence of Fish & Game that stock exclusion from water bodies (Schedule C) requires:[2]

   1.1.1. at least 5 metres from rivers and streams;[3]

   1.1.2. a 1 metre setback for intermittent artificial watercourses with a channel width of ≤1 m.

2. For this hearing, Ms Marr's evidence covers:

   2.1. Policy 7 and Implementation Methods 3.11.4.7 & 3.11.4.8 ('signalling the future');
   2.2. Policy 15 (Whangamarino Wetland) and Method 3.11.4.4;
   2.3. Forestry; and
   2.4. Farm Environment Plans (FEPs).

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[1] Paragraph 2 of Dr Canning's Response. This was further explained at the presentation of the JWS, 18 July 2019, where Dr Canning referred to nutrient interactions with microbes affecting respiration, driving down DO, affecting productivity of invertebrates and fish (following questioning initially to Dr N Phillips).

[2] Eivers primary evidence Block 2 at [2.3] – [2.4]. At [5.12] Dr Eivers states that, in relation to the definition of "intermittent streams", she does not agree with the "Option to add" in Officer's Recommended Schedule C that would state *"…where the bed is predominantly unvegetated and comprises exposed fine sediment, sand, gravel, boulders or similar material or aquatic vegetation*" as this may not encapsulate all watercourses that require management.

[3] Fish & Game still seeking potentially with larger setbacks for some waterbodies as recommended by DOC evidence.

3. While Ms Marr has not commented on commercial vegetable production, Fish & Game maintains the position in its submission. Supporting the evidence for the Director-General, Fish & Game says that the scale of reductions required from commercial vegetable production must be clarified. This is not clear, following the recommended removal of Policy 3:
   3.1. clause (d) *"A 10% decrease in the diffuse discharge of nitrogen …"*; and
   3.2. clause (a) "*reducing average contaminant discharges over time…*".

4. Ms Marr's evidence does not comment on 'subcatchment planning' but Fish & Game supports the Officers comments that this should not be at the expense of an all-of-catchment approach.[4]

5. Fish & Game's position remains that PC1 should set out more ambitious steps toward Scenario 1, both in the short and the medium term. This includes more than a 10% shift toward Scenario 1, which was analysed on the basis of "constrained land use" and using a limited input/output analysis (as distinct from General Equilibrium analysis). Mitigations on current practices have permeated into a strong focus on FEPs, with substantial issues around balancing certainty with flexibility, and with enforceability. Fish & Game considers that the approach will be bureaucratic, inconsistent in its approach and lacks a link with instream water quality goals.

Policy 7 and Implementation Methods 3.11.4.7 and 3.11.4.8 (signalling the future)

6. Council adopted, the "*Waikato Freshwater Strategy: A strategy to deliver the best use of fresh water through time*" in June 2017.

7. The section 42A Report Block 1, said PC1 is to *lay a foundation* for the methods in the Waikato Freshwater Strategy.[5] The thinking of the CSG, was that PC1 is an 'interim' plan change.

8. In Block 1, Fish & Game cautioned against decisions under PC1, entrenching current land use, or expectations of such.

[4] Block 3 Section 42A Report at [156] and [159].
[5] Block 1 s42A Report at page 95.

9. Policy 4 signals what is "likely" to be required under future plan changes.[6] I submit that it is appropriate this be supplemented by Policy 7.

10. That a future plan change may not be constrained, is not a reason to delete Policy 7. Given its interim nature, it is not enough to rely on vague reference to plan reviews in the future, and a *potentia*l further reductions in contaminants, without sending strong signal that a future plan change is intended to reallocate (at least nitrogen) and *require* further reductions.

11. As stated by Ms Marr, the Region cannot afford arguments that more time is required in the next plan iteration, because people were not aware that an allocation regime was intended.

12. Ms Marr's evidence is that Policy 7 remain, along with Implementation Methods 3.11.4.7 and 3.11.4.8 *or* that the content of Policy 7 be incorporated into those Methods.

13. Fish & Game sought an additional implementation method, as follows:

> **3.11.4.x Initiate allocation of diffuse discharges**
>
> The Waikato Regional Council will initiate a framework for the allocation of diffuse discharges including reductions in nitrogen load according to specified timeframes for reductions by sub-catchment. The Waikato Regional Council will:
>
> a. Use science-based limits for the total allowable load of a contaminant for subcatchment which will meet the water quality objectives of the plan;
> b. Implement contaminant leaching rates for diffuse discharges from properties and enterprises by allocating to limits, targets and timeframes;
> c. Quantify nitrogen load reductions based on over-allocation of nitrogen beyond the science-based limit for sub-catchments; and
> d. Define timeframes for sub-catchment nitrogen load reductions to be made.

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[6] S42A Report Block 2 recommended following text:
To recognise that future regional plan changes or regional plans are **likely** to require all farming activities make further reductions in the diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens in order for Objective 1 to be met.

To grant resource consents that authorise farming activities for a duration that will enable further reductions in contaminant losses to be implemented through replacement resource consents rather than by way of a review of consent conditions; unless the application demonstrates clear and enduring ongoing reductions of contaminant losses beyond those imposed in response to the short-term water quality attribute states in Table 3.11-1 and the property is not in a Priority 1 subcatchment

14. Fish & Game continues to seek this method. In relation to the ability to set sub-catchment loads, at Block 1, Dr Canning said that there are numerous methodologies to calculate loads in situations where concentration data is collected separately to flow data.[7] Fish & Game considers that a better approach would be to provide for nutrient *allocation* through this Plan Change, on the basis of sub-catchment loads.[8] However the above method is sought as alternative relief.

15. The Officers record submissions on Policy 7, including:[9]

> Many submitters are concerned with the uncertainty in regard to how much land potentially has to go into forestry and/or native bush in future. As such, the submitters consider this uncertainty will also result in an unwillingness for farmers to invest.

16. The very nature of the two-stage approach is that it creates uncertainty for investment. Below in these submissions, I comment on the resource-intensive FEP approach. This approach will potentially create 'sunk costs' (i.e. mitigations for those land uses that may be found unsustainable under the next plan iteration). In any case, Policy 7 should not be removed on the grounds put forward in these submission points.

Forestry

17. Section 12(4) of the River Act[10] states that a rule included in a regional plan for the purpose of giving effect to the Vision and Strategy prevails over a national environmental standard, such as the NES-PF, if it is more stringent than the standard. Therefore, it is relevant to enquire whether more is required under the Vision and Strategy, for forestry. I agree with Ms Tumai's comments that s12(4) overrides regulation 6 of the NES-PF. In any case, regulation 6 allows a rule in a plan to be more stringent if the rule gives effect to "*an objective developed to give effect t othe [NPSFM]*". It was also the view of the Regional Council when incorporating provisions of the NES-PF into the WRP, that: [11]

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[7] Canning Block 1 at [3.40].
[8] Fish and Game has supported submissions from Beef and Lamb and the Director-General of Conservation seeking allocating of nitrogen loads to land based on natural capital: FSPC1-374 (Director General) and FSPC1-308 (Beef and Lamb).
[9] Block 1 s42A Report at [448].
[10] Waikato-Tainui Raupatu Claims (Waikato River) Act 2010. Also relevant are Ngāti Tuwharetoa, Raukawa, and Te Arawa Iwi Waikato River Act 2010, and Nga Wai o Maniapoto (Waipā River) Act 2012.
[11] Strategy and Policy Committee Agenda Paper Tuesday 26 June 2018 attaching 17 May 2018 Report to Strategy and Policy Committee at [30].

Where conflicts arise between the Vision and Strategy and the NESPF, the Vision and Strategy prevails. At the time of writing there have been no identified conflicts between the two, however, any conflicts identified will be addressed in accordance with legal requirements.

18. Fish & Game's submissions sought:

18.1. 5.1.5q (proposed to be added by PC1): Amend to include the following provisions in the harvest plan
(v) Buffering measures undertaken; and
(vi) Harvesting and replanting regime.[12]

18.2. Remove the forestry exclusion in the existing Regional Plan Rule 5.1.4.14.6 and 7 and require a 10 metre buffer for ephemeral streams, perennial streams, wetlands and lakes and amend to ensure that no more than 50% of a catchment or subcatchment is harvested in a 10 year period unless 20 metre buffers are used on perennial streams, wetlands, and lakes to protect the downstream environment.[13]

(A copy of the relevant rules is attached to these legal submissions as Appendix 1).

19. The reasons for the submission included:

A 10 m buffer is not adequate to mitigate the impact of plantation forestry during and just after harvest. A 20+m buffer is required to prevent increased amounts of suspended solids or nutrients entering streams. The environmental impact assessment for the NES PF states that a *"10m buffer has a limited capacity to reduce some of the impacts of harvesting on stream environments and was less effective in mitigating harvesting impacts when compared to the wider buffer*."

Land use conversion within the Waikato Region has led to large tracts of land being planted in pine in a short period of time and has resulted in entire

[12] PC1-11016. Reasons for this submission were stated: "The proposed condition does not include provisions that would safeguard streams and rivers from excessive sediment and phosphorus loss from plantation forestry. Despite other primary sectors being required to significantly reduce the loss of sediment and nutrients to meet the water quality objectives of the Vision and Strategy, the proposed PC 1 ignores the significant contribution of plantation forestry to overall contaminants."
[13] PC1-11007.

> subcatchments being harvested in a similarly short time period. This large scale harvesting is more cost effective but has led to accelerated erosion within the catchment downstream. Harvesting large proportions of catchments or sub catchments can significantly increase runoff and suspended solids in streams that can negatively impact stream health and water clarity

20. The intention of this submission point was that either a limit on the extent of subcatchments harvested in a 10 year period should be imposed (with a 10m buffer), or failing that a 20 metre buffer.

21. Rule 5.1.5(q)(a)(iii), proposed to be inserted by PC1 as notified, said that the harvest plan identify *all* waterbodies, streams and wetlands. Ms Marr's evidence is that this was more stringent to the NES-PF (which only requires identification of waterbodies above a certain size).

22. Schedule 3 clause 3(1) of the NES-PF provides that harvest plans must identify the location of, and mark on a map:

> (a) wetlands larger than 0.25 ha and lakes larger than 0.25 ha:
> (b) rivers to their perennial extent:
> (c) rivers where the bankfull channel width is 3 m or more:
> …

23. Fish & Game does not consider that wetlands under 0.25ha come under a *de minimis* threshold, for the purpose of buffers/setbacks. It is however acknowledged that if "perennial extent" is to be interpreted consistent with the definition of "perennial river" then this would include intermittent flows that provide habitat for the continuation of the aquatic ecosystem.[14]

24. At earlier hearing Blocks, in relation to agriculture, Fish & Game's witnesses questioned the definition of "intermittent streams" for the purpose of Schedule C. At Block 2 Dr Eivers stated that, in relation to the definition of "intermittent stream", she did not agree with the "Option to add" in Officer's Recommended Schedule C *"…where the bed is predominantly unvegetated and comprises exposed fine sediment, sand, gravel, boulders or similar material or aquatic vegetation"* because this may not encapsulate all watercourses that require management.[15] For this hearing Fish & Game considers that watercourses

[14] Perennial River means "a river that is a continually or intermittently flowing body of freshwater, if the intermittent flows provide habitats for the continuation of the aquatic ecosystem".
[15] Eivers Block 2 at [5.12].

that may not provide habitats for the 'continuation of aquatic ecosystem' should still be managed.

25. The NES-PF buffer requirements do not take a mountains to the sea approach approach[16] (ki uta ki tai) but rather appear to focus on adverse effects to near-field environments.

26. The River Act[17] states that *"the overarching purpose of the settlement is to restore and protect the health and wellbeing of the Waikato River for future generations."* The evidence is as follows:

    26.1. Dr Daniel's Block 2 - sediment management is the most important factor influencing ecosystem health of wadeable streams in the Region, based on Pingram, M.A. *et al* 2019 "*Improving region-wide ecological condition of wadeable streams: Risk analyses highlight key stressors for policy and management"* (Environmental Science and Policy).[18]

    26.2. Dr Stewart for DOC:

> "Forestry harvest can result in significant pulses of sediment being delivered to lakes where it will drive oxygen depletion and cause release of sediment-bound phosphorus and nitrogen into the water column where it drives eutrophication."

    26.3. Dr Stewart provides evidence that the NES-PF does not provide adequate protection for downstream environments i.e. lakes.

    26.4. Ms Robson in her rebuttal evidence acknowledges particular issues with *sediment* in the Waipā catchment. Although Ms Robson recalls the literature review undertaken for the NES-PF buffer requirements (5 metres for streams less than 3m wide) it is unclear what literature is relied on. I submit Dr Stewart's evidence should be preferred (recommendation to include a 20m buffer for all sources of water reaching lake catchments within the upper river and mid-river FMUs). Dr Stewart is an expert in examining nutrient cycling processes and pollution sources in aquatic systems,

[16] Refer also Dr Daniel Block 2 at [3.6].
[17] Waikato-Tainui Raupato Claims (Waikato River) Settlement Act 2010, s 10.
[18] Dr Daniel Block 2 at [3.2].

> including using stable isotope geochemistry.[19] He draws his conclusions based upon cited literature including Gibbs, M.M., 2008 "*Identifying source soils in contemporary estuarine sediments: a new compound-specific isotope method. Estuaries and Coasts*" 31(2), pp.344-359

27. Fish & Game agrees with Ms Robson that buffers are not the only answer, and that management of the *activity* is also important.[20] Indeed, for grazing practices Dr Daniel gave an example at Blocks 1 & 2 of the Mangatutu River (upper Waipā catchment) where fencing increased from just over 20% in 2005 to over 70% in 2013 with no reduction in sediment loads. Inappropriate farming *practices* essentially eliminating improvements made through fencing mitigation.[21] However buffers (for forestry and agriculture) are clearly form part of the picture.

28. The NPS-PF came into effect 1 May 2018. A One Year Review of the NPS-FM commenced 1 May 2019. In a recent article in the Resource Management Law Journal, *"Plantation Forestry: Are the Legal and Policy Settings Right to Incentivise the Right Tree in the Right Place for the Right Purpose?"*[22] the authors comment:

> "…waterbody setback provisions are inadequate in that they [are] set at a distance for which there is no ecological justification (5m), or at a distance (10m) which, in light of damage that occurs during harvest, will effectively be halved. These setbacks only apply to a subset of water bodies, either because of size restrictions (for example, wetlands) or due to exclusion altogether (for example, ephemeral streams)."
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> "… the presumption inherent in the NESPF that plantation forestry activities should be permitted activities (subject to standards) needs to be revisited. A complex, intensive activity that not only has immediate impacts but contributes to diffuse pollutants does not easily lend itself

[19] Stewart Block 2 evidence [4] – [13].
[20] Robson rebuttal Block 3 at [14]: *"[t]he NESPF rules thus focus on modifying the harvest activities that lead to the generation of sediment…"*.
[21] Dr Daniel Block 1 at [4.5.9] and Block 2 at [3.11].
[22] Based on the Report jointly produced by Environmental Defence Society (EDS) and Forest & Bird analysing the NESPF in advance of the Government's one year review (M Wright, S Gepp and D Hall A Review of the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017: Are the settings right to incentivise "the right tree in the right place", and is a high trust regulatory model the right fit for a high risk industry? (March 2019).

> to the certainty and specificity required for a permitted activity standard of national application. This is particularly so when that activity occurs across a national landscape that is extremely diverse and which, in many areas, is reaching environmental limits."

29. Controlled activity status would enable Council to have oversight and impose further controls on forestry harvest that may generate sediment. This is further explained in Ms Marr's evidence.

Wetlands: Policy 15 and Method 3.11.4.4

30. Fish & Game requests the changes to Policy 15 (Whangamarino Wetland) set out on page 7 of Ms Marr's evidence, and reinstatement of Method 3.11.4.4 (which encompasses wetlands other than just the Whangamarino).

31. At Block 1, discussing Objective 6, Fish & Game sought that *all* remaining wetland habitats be recognised as significant[23] and maintained, enhanced or protected from further degradation and loss.[24] Fish & Game also sought that Whangamarino be recognised as an outstanding water body,[25] and a separate FMU for the Whangamarino.[26] Fish & Game continues to seek these matters.

32. PC1 and WRP considered together do not meet the requirements of ss 6(a) and (c) of the Act, or higher-level planning direction in relation to wetlands, including:

    32.1. Objective A2 of the NPSFM: the need to protect significant values of wetlands; and

    32.2. Direction in the WRPS: wetland quality and extent be maintained and enhanced.[27]

[23] Based upon Dr Robertson EIC Block 1, Appendix 2 *All* wetlands in the region meet the significance criteria under section 6(c) of the Act (ecological significance criteria of the WRPS and that wetlands in the Region meet criteria for being "indigenous vegetation or habitat type that is under-represented (10% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally) because in the Waikato biogeographical region, less than 9% (by area) of wetlands remain. Refer also Klee Block 1 at [5.6].
[24] PC1–1107; V1PC1-223; PC1-10790:
[25] PC1-11007; FSPC1-446
[26] V1PC1-201
[27] 3.16(b)(vi)

33. This is not an academic issue. Analysis of change between 2001 and 2016 shows that, in the Waikato, a further ~1.2% of remnant wetlands were completely lost and ~15% suffered partial loss (MFE 2017).[28]

34. For the Whangamarino, as also explained by Mr Klee at the Block 1 hearing, the recent s128 review of the resource consent for the discharge from Waikare Gate to Pungarehu canal, cannot be relied upon to lead to the necessary sediment reductions for that wetland complex.[29] In relation to the Whangamarino/Waikare CMP, and potential review of the consents for the Lower Waikato Waipā Flood Control Scheme (LWWFCS), the section 42A Report states:

> The Officers consider this is a significant issue however, the management of this Scheme and its impacts on the wetland should be <u>through the more flexible CMP and resource consent regime, not through PC1</u>.
> (Emphasis)

35. With respect, this statement significantly understates the role of a regional plan, and overstates the role of the non-statutory CMP.

36. As noted, and explained by Mr Klee in Block 1, Fish & Game was involved (as a submitter) in the review of consent conditions for the Waikare Gate. Although resolved by Consent Order, this took more than 3 years, from date of the Council-level hearings to resolve.[30] The WRP planning provisions provided little, if any, real guidance to the parties during that process.

37. Dr Robertson's evidence establishes that the bog habitats in the Whangamarino wetland are of very high ecological significance but also that these are not the only ecosystems of significance - fen, swamp and marsh wetland types should also be recognised. Fish & Game seeks Policy 15 be revised "*avoid*" further loss to the bog ecosystem.

38. Fish & Game also seeks that Policy 15 provide for the protection of the other significant values of the Whangamarino wetland complex[31] and manage "*the hydrological regime including the impacts of the [LWWFCS]"*. (I deal with the hydrological regime further).

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[28] Klee EIC Block 1 at [5.7]: However Fish & Game is not aware of formal monitoring by the Waikato Regional Council to truly quantify how much wetland is being lost.
[29] Klee EIC Block 1 at [6.17].
[30] May 2015 Council-level hearing. August 2018 Consent Memorandum lodged with Environment Court resolving appeals.
[31] Robertson Block 3 at [16]: bog, fen, marsh and swamp wetland habitats.

39. Fish & Game also supports the relief sought by the Director-General that the Policy refer to all discharges (both point-source and diffuse), to ensure it captures the discharge from the Waikare control gate to the Pungarehu canal, and be tied to achieving the numeric targets for the Whangamarino Wetland proposed in Table 3.11-1 in JWS.[32]

40. Having relied on the Lake Waikare and Whangamarino Wetland Catchment Management Plan in Block 1, the Officers now recommend deletion of Method 3.11.4.4 that refers to it. Although Mr Klee's evidence at Block 1 was that catchment management planning alone cannot be relied upon to solve the problem[33], Mr Klee still considers PC1 should *refer to* the need for catchment management planning.

41. Fish & Game also relies upon the evidence of Dr Robertson for the Director-General recommending amending Implementation Method 3.11.4.4 to provide technical direction on actions required to achieve short and long-term targets for the Whangamarino including implementation of the Catchment Plan, investment in catchment programmes, review of all consents that relate to the LWWFCS by 2021 and require Council to implement options to reduce the impact of altered hydrological regimes where they exacerbate water quality impacts.[34]

42. The JWS Freshwater, Attachment 13, states the extent of degraded areas in the Whangamarino wetland is heavily influenced by hydrology. It states that the habitats in the Whangamarino wetland with highest TN and TP levels are those areas of wetland most frequently inundated with surface water (pages 103-104). This is illustrated by the extent of low-nutrient status vegetation that has retreated in its distribution. Even if the recommendations for TN and TP attributes for the Whangamarino wetland, contained in Attachment 13 to the JWS are accepted,[35] more is required to implement the NPSFM for the Whangamarino.

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[32] Robertson Block 3 at [20].
[33] Klee Block 1 at [6.32]: *"In my experience, catchment management plans that are non-statutory have failed to deliver outcomes that lead to environmental improvements and "further tangible narrative and numeric objectives are required in PC1 that give some statutory obligation to achieve desired outcomes identified in the CMP."*
[34] Robertson Block 3 at [27].
[35] Proposed 80 year targets are aligned with the water quality targets proposed for riverine lakes and the Waikato River (main stem). The Appendix states (page 106) that the targets (TP50mg/m^3 and TN800mg/m^3 are in the range of water quality for natural inputs to the wetland (Waikato, Maramarua). Narrative targets are proposed for other wetlands for PC1 (page 109).

43. Mr Klee gave evidence at Block 1 on the relationship between hydrology and water quality for the Whangamarino[36] and other wetlands, stating "*[m]aking small reductions in river catchment loads must not be confused with improving the ecosystem health of downstream wetlands"*.[37] I set out Mr Klee's fuller comments as Appendix 2 to these submissions.

44. As stated, the Director-General seeks to include a reference in Method 3.11.4.4 to implement options to reduce the impact of altered hydrological regimes. Fish & Game supports the Director-General's relief in relation to hydrological impacts on wetlands. Fish & Game's requested relief goes further as follows.

45. For the Whangamarino wetland, Fish & Game's submission included:[38]

    45.1. Amendment to WRP 3.6 Policy 4 (additions underlined):

> **Wetlands and Peat Lakes** Enhance or maintain the extent and quality of the Region's wetlands by encouraging activities that will either maintain or reinstate agreed water levels in wetland areas or peat lakes.
>
> Enhance and maintain the extent and quality of the Whangamarino Wetland by implementing the methods set out in Section 3.11.3 of the Plan.

46. This recognised that a link is required between Chapters 3.6 and 3.11.3.

47. For wetlands generally, Fish & Game's submission included:[39]

    47.1. Amendment to WRP 3.6 Policy 2 (additions underlined):

> Manage the damming and diverting of water in perennial water bodies in a manner that ensures: a) Adverse effects on surface water bodies that are inconsistent with the policies in Section 3.2.3 and 3.11.3 of this Plan are avoided as far as practicable and otherwise remedied and mitigated.

    47.2. Amendment to WRP 3.7 Policy 2 (additions underlined):

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[36] Klee EIC at [3.7]: "In my opinion, managing water quality in catchment alone is insufficient to safeguard the health and wellbeing of Whangamarino Wetland. Specific management actions to ensure hydrological functionality and reduced nutrient and sediment loads at specific times when the sensitive parts of the wetland are most susceptible will be required."
[37] Klee EIC Block 1 at [6.16].
[38] V1PC1-317; V1PC1-318; V1PC1-319.
[39] V1PC1-324.

Use a mixture of non-regulatory and regulatory methods (including education and incentives) to achieve an increase in the extent and quality of the Region's wetlands

47.3. Amendment to WRP 3.6 rules so they are the most appropriate way to achieve the Objectives of the Plan, including for the Whangamarino wetland, Objective 6 and Policy 15.

48. Fish & Game's submissions also seek that all wetlands be listed in Table 3.7.7 of the WRP so that they are captured by the Rule 3.7.4.6 which is a rule that controls hydrological effects on wetlands.[40]

49. Based on the evidence of the Director-General and Fish & Game, a finding must be made that neither the rule framework as notified, nor as recommended by Officers, is the most appropriate way of achieving the Objectives and Policies in PC1 for the Whangamarino and other wetlands. Indeed, outcomes available through that rule framework would be *inconsistent with* the Objectives and Policies of PC1 for wetlands.

JWS Freshwater

50. As stated by some other witnesses, the JWS (17 June 2019) has rather limited value due to the further time it would take to have agreement on fundamental issues. The experts did however agree (page 6) that *"a general consensus reached on Day 4 that each of the now 76 sub-catchments should have a target and limit based on the short term PC1 objectives"*. This supports Dr Canning's Block 1 evidence in relation to including short-term targets/limits for the tributaries as well as the main stem.

51. As Ms Tumai pointed out, attachment 1 "*Principles for Attribute Inclusion*" is inconsistent with the Panel's directions for that conferencing in its reference to

[40] **Rule 3.7.4.6 Discretionary Activity Rule – Creation of New Drains and Deepening of Drain Invert Levels**
The following activities:
- the creation of new drains for the purposes of managing water tables, or
- the deepening (relative to the wetland level) of the invert level (bed) of lawfully established or authorised drains constructed prior to the date of notification (28 September 1998) of this Plan
in areas **within 200 metres of the legal property boundaries of any wetland listed in Section 3.7.7** are discretionary activities (requiring resource consent) (except where the location of that activity is hydrologically isolated* from the wetland).

'scope'.[41] The Principles for Attribute Inclusion are also inconsistent with the precautionary approach and potentially the Vision & Strategy. Dr Canning commented on these Principles in his Block 1 evidence. He noted that these principles were picked-up and modified by the TLG, having been used for the NOF (now under review). Dr Canning's concern was that the principles do not adopt the precautionary approach[42] and that they referred to social, cultural, economic and environmental implications (Principle #5). In his role on the Essential Freshwaters 'Science and Technical Advisory Group' (STAG), it was deemed that economic implications are inappropriate for the Group to be considering except in directly implementing the policy e.g. cost to council monitoring teams.[43] Unfortunately the experts in conferencing decided to use the same Principles as used by the TLG.[44] Fish & Game has concerns that this resulted in experts bring policy or planning analysis to the discussion, when that is inappropriate.[45]

52. Dr Canning's comment in the Attachment 17 to the conferencing statement is that:

> "The process has been inappropriate and misleading. Sub-groups were asked to prepare discussion documents on each attribute, we are now being asked to support or disagree with attributes as proposed with little group discussion on some and no discussion at all on others.
>
> As a result, my views are maintained as per my evidence in chief."

53. Although Dr Canning perhaps used stronger wording to describe the process, this is consistent with other authors' statements that various matters were not able to be fully discussed due to limitations in time.

54. Dr Canning also comments, in relation to nutrients:

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[41] I.e. seeking to raise matters of scope the Panel directed that scope issues not constraint the experts' recommendations. Whereas this attachment refers to PC1 being restricted to improving the management of nitrogen (N), Phosphorus (P), sediment and faecal bacteria.

[42] Dr Canning Block 1 at [3.23]: "*Criteria 3 and 4 seek that certain matters are 'well understood', including links between management interventions and limits, and also the current state. More often than not we do not know that a desired outcome will be achieved by manipulating x, y and z. But we know it will drive improvement in the right direction*."

[43] Canning Block 1 at [3.24].

[44] Recorded at page 3 of the JWS.

[45] In this Respect Dr Scarsbrook commented at JWS conferencing in relation to Lake management that resources should be focussed into things that 'give the best bang for the buck' e.g. it may not make sense to focus on reducing N when limited resources may be better spent elsewhere (in the context of FEPs).

> "Basing the nutrient criteria solely on relationships with phytoplankton (as proposed by the option 2 approaches), would lead to a substantial weakening of the proposed nutrient criteria and yield substantial differences in the level of ecosystem health proposed. For the mainstem, I still support the approach suggested in my evidence and reiterate that at a minimum we must set DIN and DRP to achieve periphyton objectives as per the NPS-FM 2017. We must also consider the effects on downstream environments. We have not yet considered the nutrient load requirements to achieve a healthy estuary." (Emphasis)

55. Dr Canning continues to support the inclusion of MCI and QMCI with regional bottom-lines of 90 and 4.5 respectively. Dr Canning is recommending 'bottom lines' for nitrate-nitrogen and DRP of 0.89 mg/L and 0.038 DRP respectively.[46]

56. Dr Canning's recommendations for other attributes were set out in his Block 1 evidence. The additional attributes sought, in Dr Canning's Block 1 evidence, include MCI, Fish Q-IBI, DO, deposited sediment, clarity and Estuarine Trophic Index (for the Waikato Estuary).

Scope

57. In relation to scope, I adopt the legal submissions of Ms Tumai at Block 2[47] and maintain legal submissions made at Block 1 on behalf of Fish & Game.[48] Importantly, this Panel is not bound by the TLG or the CSG.

58. While the scope of PC1 may have expressly excluded water takes & use, habitat that does not relate to the 4 contaminants, management of whitebait stands and the full implementation of the biodiversity provisions of the RPS[49] it did not *exclude* consideration of other parameters or attributes related to the four contaminants.

59. Fish & Game disagrees with the reading down of the section 32 Report promoted by some other parties, to the extent this is relevant.[50]

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[46] As advised in Memorandum of Counsel dated 16 July, Dr Canning wishes to correct a typographical error in his Block 1 evidence: Table 1 on page 19 shows the bottom of the C-band for nitrate-nitrogen at 0.74 mg/L, whereas this number should read 0.89 mg/L consistent with the rest of Dr Canning's evidence (e.g. at [2.3.1]).
[47] Legal submissions on behalf of Director-General of Conservation Block 2 at [5] – [37].
[48] Legal submissions on behalf of Fish & Game Block 1 at [52] – [60].
[49] Eccles evidence on Table 3.11-1 for Federated Farmers at [4.8(d)].
[50] In *Hawke's Bay Fish and Game Council v Hawke's Bay Regional Council* [2017] NZEnvC 187at [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]*".

60. Fish & Game does not accept the suggestion from some other parties that every attribute must be subject to a separate cost/benefit analysis. Dr Canning's approach is that all numerics at a single site be within the same band, such that the desired ecosystem health state is consistent across all attributes. The relevant bands are 'A' (Excellent), 'B' (Good) and C ('Fair'). This is consistent with the CSG's description of "Scenario 1",[51] subsequently accepted by the HRWO Subcommittee. It is also consistent with the requirement of the NPSFM for ecosystem health, although it is acknowledged that Fish & Game has put forward additional clarity 'bottom lines' for sites of significance to the trout fishery.[52]

61. For completeness, Appendix 3 to these submissions sets out my analysis as to why "ecosystem health" cannot be traded off in this process, for example against economic values. Ecosystem health, and human health for recreation, are 'bottom line' requirements under the NPSFM.

FEP's

62. The key recommendations from Block 2 were:[53]

- Shifting the focus of Policy 2 to be a specific policy on FEPs.
- Maintaining, and strengthening FEPs as a core methodology in PC1 to deliver reductions across all of the four contaminants.
- Identifying that the more widely recognised 'good farming practices' (GFP) framework is an important foundation for FEPs, in terms of guiding their development, providing a more outcomes focused approach, and checking on implementation.
- Requiring audits of FEPs and their implementation to give confidence to the Council, the community and farmers that improvements in farm practices are being made.

63. Marr Block 2 evidence was that:[54]

[51] Doole, G., Elliott, S., & McDonald, G. (2015). *Evaluation of scenarios for water-quality improvement in the Waikato and Waipa River catchments.* Healthy Rivers/Wai Ora project: Hamilton, NZ (Document 3564910): Table 1, page 15.
[52] Daniel Block 1 at [4.5.6] and Table 1.
[53] Block 2 Officer's Report at [178].
[54] Marr Block 2 at [6.9].

Concepts like 'Good Farm Practice' will likely fail to achieve the equitable reductions in contaminants that are necessary to achieve instream outcomes, because there is so much uncertainty in what is required of each individual.

64. In addition:

[6.11] A grandparenting type approach rewards existing polluters by allowing their land use to continue (albeit with some policy aspirations for reductions) and restricts owners of good land from developing that land to its potential.

[6.12] In my opinion a likely outcome of the current or recommended framework is uneven imposition of GFPs and a likely failure to achieve short term goals for the waterbodies. This is because those individuals who are committed to improving practice will do so, and those who are not will have FEPs prepared which provide the minimum change required to gain consent. This will result in uneven application of GFPs and as a result, uneven and uncertain improvements in water quality outcomes.

[6.13] The [Block 2] s42A report recommends removing the requirement to comply with an NRP from the permitted activity rules and the strongly worded matter of control from the rules, and replacing it with a regime which relies on an NRP being specified in the FEP and reductions achieved by reliance on implementing GFP. …

[6.14] I anticipate that the conditions placed on consents sought under this framework will be either be based on accepting the FEP at face value or an expensive review of each FEP will have to be undertaken to ensure that the mitigations and management practices recommended in the FEP are in fact good or best practice for the property. Neither of these is a good or efficient option for the management of farming.

65. Ms Marr said in Block 2 that the following would be required for FEPs:[55]

…in order to be effective the approach must contain particular key elements:

- the resource consent needs to clearly state the environmental outcome sought;
- the FEP needs to be prepared appropriately;
- the management actions set out in the FEP must achieve the outcome; and

[55] Marr Block 2 at [6.39].

- those management actions must be set out in a clear and unambiguous way, that it is possible to assess compliance against.

66. For Block 3, the s42A Report states:[56]

> The revised schedule takes an outcome-based and principle-based approach to FEPs, is considered by the implementation team to be inherently more flexible, and is expected to empower land-owners to operate and respond to changing circumstances over time, in a way that focuses on the achievement of a desired result, rather than completing a fixed set of actions.

67. The s42A Report for Block 3 does not substantially improve confidence in the FEP approach.[57] Ms Marr notes that:
    - FEP's do not mention long term or short term water quality goals for the catchment or sub-catchment;
    - There is no requirement in FEP's that actions must be achieved within particular time frames, even linked to the 2026 goal (for actions to be implemented);
    - There is no link to proportionality of reductions to achieve collective goals;
    - There is no requirement that farming actions/practices be described in a clear and specific way;
    - There is no mention of a requirement on farms between the 50th and 75th percentile to reduce nitrogen discharges/losses;
    - There is potential inconsistency between requirements in FEPs and Schedule C (stock access);
    - FEP can be updated so long as it is consistent with Part B (objectives and principles) without capacity for review by Council.

68. It is necessary to link FEP outcomes to instream objectives. Although the proposal includes a reference to NRP's and the 75th percentile, I suggest the link to instream objectives remains unclear.[58]

69. In this respect, it must not be forgotten that:

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[56] At [210].
[57] Ms Marr's analysis at Block 3 EIC [8.11] and Appendix.
[58] In Block 2 I raised the decision in *Day v Manawatu-Wanganui Regional Council* [2012] NZEnvC 182 [5-179] – [5-181], where a reference to 'reasonably practicable farm management practices' was rejected because that would not *quantify* the amount of nitrogen leaching reduction that would be achieved. Without measurement against a yardstick that relates to instream objectives, GMPs/GFPs (or variations) risk the non-achievement of water quality objectives.

69.1. Medium-term objectives/targets/limits have also been sought by Fish & Game for rivers and streams: a 30% 20 year objective/target/limit.[59]

69.2. The Director-General also seeks a medium-term objective and that the outcome statements in FEP's make specific reference to the requirements to achieve the water quality objective/targets/limit in Tables 3.11.1, 3.11-1a, 3.11-3 and 3.11-4 (sought by DOC), which includes numeric objectives/targets/limit for the Whangamarino wetland (under a separate Whangamarino FMU) and narrative targets for all wetlands in the Waikato and Waipā River catchments based on wetland type. (Fish & Game has supported those targets.)

70. If the FEP's are to have meaning, not only their initial approval but also any *change to them* will require substantial resourcing and analysis. Unfortunately, if FEP's are to be relied upon (as distinct from Ms Marr's recommended approach)[60] this *necessarily* involves less flexibility for farm management.

71. This cannot be addressed by allowing changes to FEPs on the basis that the farming activity is to remain consistent with Part B of the Schedule. That is subjective. Where farming practices change, a review *will* be required.

72. The concern of Officers that PC1 as notified had a point of compliance at *actions* in the FEP being completed, meaning an inability to change farming practices except through a s127 application,[61] has been overcome by removing the point of compliance and leaving nothing in its place. As the Dragten Report says *"… the flexibility and pragmatism of the expert judgment review approach creates challenges for enforceability."*[62]

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[59] A matter that was to be addressed by Fish & Game following Block 1 and following JWS (conferencing), and which is still sought: Submission stating *"30% nitrate-nitrogen reductions from current leaching requested by Fish and Game will require 20 year targets".* [PC1-10809]

[60] Marr Block 2 at [6.15]: "T*he necessary, in my opinion, alternative to this, is for PC1 to clearly state in the plan the reductions in each contaminant in each sub-catchment necessary to achieve the objectives of PC1. Resource consent applications for each property in a sub-catchment should be received and processed at a similar time, with consent requirements staged based on catchment priorities. Each and all applications should be assessed as to the extent that individually and collectively they will achieve the required outcomes. Resource consent conditions should allocate the required change equitably amongst all the contributing discharges (and this should include point source discharges as I discuss earlier in this evidence). This should be secured as resource consent conditions specifying particular management actions or restrictions for each property."*

[61] Block 3 s42A Report item 7 under [2.1] Dragten.

[62] Page 7 last paragraph.

73. In the One Plan declaration case[63], the Environment Court accepted that although a management plan can provide information as to how the parameters or controls in the consent can be achieved, it is inappropriate for those parameters to be entirely left to the management plan.[64] An Advice Note on the Horizons consents stating that "updates" to targeted nitrogen leaching or a sustainable milk plan could be approved from time to time (and by an undefined methodology) was found to be unlawful, invalid and contravention of the Act.[65]

74. So, the FEP's implementation proposal raises the following legal issues:

74.1. Ensuring enforceability i.e. that there is a 'point of compliance' expressed with clear wording on the consent.

74.2. Although NRP or 75th percentile target for N is to be specified on the consent, indications from Council Officers are that a numeric limit based on OVERSEER would not be enforced - at least under a prosecution.[66]

74.3. In the absence of any overt intention to enforce OVERSEER limits, there is a reluctance to include FEP actions on the face of the consent. A section 128 review on consent conditions for low ('D') grades is proposed in order to obtain enforceable conditions. However s128 reviews themselves are not enforcement mechanisms. Such reviews themselves carry rights of appeal (delay).

74.4. Council requires FEPs from a certified farm planner but does not require independent check from Council Officer on consent applications.

74.5. Certified planners may be the same person that has been working with the farmer for a number of years.

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[63] Wellington Fish & Game Council v Manawatu-Whanganui Regional Council [2017] NZEnvC 37.
[64] Citing *Wood v West Coast Regional Council* C127/99 pages 6-7 (Judge Skelton presiding).
[65] Above-cited Declaration 7(b): The Environment Court said at [175]: "*We agree with the applicants' position as follows: "Although a management plan can provide information as to how the parameters can and will be met, it is inappropriate for the parameters themselves to be left to the management plan.*
The consent (through conditions) must set the maximum leaching allowed on the face of the consent document – it is inappropriate to leave that matter to a management plan. We agree that the maximum nitrogen leaching (over time) is a fundamental parameter and as such it should be imposed on the face of the consent, and not left to a management plan".
[66] Other enforcement actions may be available on the balance of probabilities.

74.6. Independence between 'certifiers' and 'reviewers' is not required.

74.7. Council enables a grading to be given by certified farm planner under an audit process, becoming the basis for compliance. The rationale appears to be that there is a *trusted* relationship between the farmer and the certified farm planner, but this does not give transparency (or confidence) to parties like Fish & Game. Will Council retain and carry out its compliance function?[67]

74.8. High level of subjectivity associated with assessment against the objectives and principles of the FEP. I note that the ability to make Schedule 1 more certain is also being sought by those seeking a permitted activity status.[68] In response to submissions, including that of Federated Farmers, that interpreting and applying the rules may be inconsistent, and that there is no 'low cost' appeal process, Officers refer to the process under ss357A-D of the Act.[69] This in itself acknowledges the subjectivity involved.

74.9. The emphasis on changing farmers behaviour through a 'softly softly' approach, and through the use of significant resources, whereas in some cases land use change will need to occur.

75. At Block 1 Dr Denne stated the analysis that Council relied upon, does not show a significant change in the cost curve of achieving 10% of the change required. Research suggests 10 years is adequate time for *significant* change (for example land use change from dairy to forestry) and does not need to rely upon the development of new technologies.[70] Assessing the monetary benefits estimated under a Willingness to Pay study[71] the total value of a 30% reduction in N and P had a medium estimate of $22.4 million per annum, $6.2 million of which was to the Waikato region, not including any downstream benefits for wetlands.[72] This indicated that

[67] Dragten Report states (page 17) that *"It would be the role of a Council compliance officer to follow up on FEP reviews that contained information that may suggest non-compliance with the RMA was occurring"* (and at page 18 that a CFEP could potentially be called as a witness in a prosecution). However the purpose of a CFEP is not to gather evidence.
[68] E.g. For Fonterra, Willis Block 3 at [9.4] *"… the approach would seem to be to let each consent processing officer undertake their own process of converting the principles into actions. This would occur over literally thousands of farms and over many years potentially leading to diverging and evolving practice."*
[69] Section 42A Report Block 3 at [200]and [215 6th bullet point].
[70] Denne Block 1 at [6.3] – [6.5].
[71] For water clarity, human health risk based on e-coli, and N and P (but using less technical descriptions): included benefits of recreation and cultural use, option values for future use, and non-use or existence value.
[72] Denne Block 1 at [5.10].

monetary benefits estimated from a limited component of total benefit, are in the *same order of magnitude* as the estimated costs for the 10% or 25% shift towards Scenario 1 assuming constrained land use change and:[73]

> …costs would be expected to be even lower if unconstrained land use was assumed… . This suggests that the relationship between benefits and costs should be examined further, and the current analysis should not be relied upon to prefer a 10% shift toward Scenario 1 as distinct from other (more ambitious) steps toward Scenario 1.

76. Ultimately, Fish & Game does not support the current framework. The improvements suggested in Ms Marr's evidence are recommended in the event that the current framework is the one the Panel favours. Ms Marr's amendments to Schedule 1 include using the concept of "*Critical Source Areas*" as in the evidence of Dr Eivers (Block 2).

77. Finally, the *term* of consents to be granted is a key concern for potential entrenchment of existing land uses, and has been addressed at previous hearing Blocks.[74]

[73] Denne EIC Block 1 at [5.12].
[74] Including in relation to the additional column Fish & Game sought for Table 3.11-2, and wording in Policy 4.

APPENDIX 1: FORESTRY RULES UPON WHICH FISH & GAME SUBMITTED

5.1.4.14 Controlled Activity Rule – Soil Disturbance, Roading and Tracking and Vegetation Clearance, Riparian Vegetation Clearance in High Risk Erosion Areas

Except as restricted by Rule 5.1.4.16, the following activities, occurring in any continuous 12 month period and located in a high risk erosion area:

1. Roading and tracking activities between 100 and 2,000 metres in length, or
2. Soil disturbance activities between 250 and 1,000 cubic metres in volume (solid measure), or
3. Soil disturbance activities between 0.2 and 2.0 hectares in area, or
4. Soil disturbance activities resulting in a cut slope batter exceeding three metres in vertical height over a cumulative distance between 30 and 120 metres in length, or
5. Vegetation Clearance of between one and five hectares with the exclusion of planted production forests, plant pests as specified in the Waikato Regional Council's Regional Pest Management Strategy and vegetation clearance adjacent to a Natural State water body as shown on the Water Management Class Maps
6. Vegetation clearance which is within five metres on either side, of the banks of a water body excluding an ephemeral stream, and which is between 50 to 100 metres in length per kilometre of that water body, with the exclusion of planted production forests and vegetation in riparian margins adjacent to planted production forest, riparian enhancement and replanting programmes and plant pests as specified in the Waikato Regional Council's Pest Management Strategy.
7. Vegetation clearance within five metres on either side of the banks of a water body excluding an ephemeral stream of greater than 50 metres in length per kilometre of that water body of:
    a. Planted production forest (except as provided for in Rule 5.1.4.11(3) and/or vegetation in riparian margins adjacent to planted production forest; or
    b. Vegetation associated with riparian enhancement programmes.
8. Any roading and tracking activities associated with the installation of a bridge or culvert controlled by Rules 4.2.8.2 and 4.2.9.3, within 20 metres of that bridge or culvert;

and any associated deposition of slash into or onto the beds of rivers and any subsequent discharge of contaminants into water or air are **controlled activities** (requiring resource consent) subject to the standards and terms as specified in Section 5.1.5.

Waikato Regional Council reserves control over the matters that are specified in Section 5.1.6.

Exclusion to Rule 5.1.4.14:

a. This Rule shall not apply to vegetation clearance within high risk erosion areas and riparian vegetation clearance where it is for the express purposes of erosion control or natural hazard mitigation, provided Waikato Regional Council is notified in writing at least ten (10) working days prior to the activity commencing. (Rule 5.1.4.11 applies).
b. This Rule shall not apply to the clearance of planted production forest where the clearance is for the express purpose of constructing access across the bed of a river where the crossing structure and associated earthworks are otherwise permitted by this plan or a resource consent.

Notification:

1. Subject to 2. below applications for resource consents under this Rule will be considered without notification.
2. Notice of applications for vegetation clearance under this Rule other than:

    - clearance of planted production forest,
    - vegetation clearance in riparian margins adjacent to planted production forest, or
    - riparian enhancement and replanting programmes

will be served on all adversely affected persons.

5.1.5 Conditions for Permitted Activity Rule 5.1.4.11 and Standards and Terms for Controlled Activity Rules

a. Organic material shall not be placed in fill where its subsequent decomposition will lead to land instability.
b. Erosion/sediment controls shall be installed and maintained on all earthworks during and on completion of the works to avoid the adverse effects of sediment on water bodies.
c. Cut-offs or culverts shall be designed and installed to prevent scour, gullying or other erosion.
d. Any erosion or instability of the coastal environment, or the beds of rivers and lakes or wetlands shall be avoided or remedied if it does occur.
e. The activity shall not result in neighbouring land becoming subject to flooding.
f. All disturbed vegetation, soil or debris shall be deposited or contained to prevent the movement of disturbed matter so that it does not result in:
    i. the diversion, damming or blockage of any river or stream, or
    ii. the passage of fish being impeded, or
    iii. the destruction of any habitat in a water body or coastal water, or
    iv. flooding or erosion.

g. The activity shall not disturb any archaeological site or waahi tapu as identified at the date of notification of this Plan, in any district plan, in the New Zealand Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained.

h. The concentration of suspended solids in any point source discharge arising from the activity shall comply with the suspended solids standards as set out in Method 3.2.4.6. This condition applies only to permitted activity rules and excludes any non-point source discharges from roading, tracking and vegetation clearance activities (refer condition o) below).

i. Any discharge of contaminants into air arising from the activity shall comply with the permitted activity conditions in Section 6.1.8 except where the matters addressed in Section 6.1.8 are already addressed by conditions on resource consents for the site.

j. In the event of any waahi tapu that is not subject to g) above being identified by the Waikato Regional Council to the person undertaking the activity, the activity shall cease insofar as it may affect the waahi tapu. The activity shall not be recommenced without the approval of the Waikato Regional Council.

k. No storage or mixing of fuels, oils, or agrichemicals shall be undertaken in areas where deliberate or inadvertent discharge is likely to enter any permanent natural surface water body.

l. All vegetation that is being felled within five metres of a perennial water body shall be felled away from the water body, except edge vegetation, or vegetation leaning over a water body, which if necessary may be felled in accordance with safety practices.

m. All exposed areas of soil resulting from the activity shall be stabilised against erosion by vegetative cover or other methods as soon as practical following completion of the activity and no later than six to twelve months from the date of disturbance to avoid the adverse effects of sediment on water bodies.

n. The activity shall not be located within 20 metres of a Significant Geothermal Feature.

o. The concentration of suspended solids in any non-point discharges from roading, tracking and vegetation clearance activities shall meet the following standards;

   i. The activity or discharge shall not result in any of the following receiving water standards being breached:

   ii. in Waikato Region Surface class waters - 100 grams per cubic metre suspended solids concentration

   iii. in Indigenous Fisheries and Fish Habitat class waters - 80 grams per cubic metre suspended solids concentration

   iv. in Trout Fisheries and Trout Spawning Habitat class waters - 25 grams per cubic metre suspended solids concentration

   v. in Contact Recreation class waters - black disc horizontal visibility greater than 1.6 metres

   vi. in Natural State class waters - the activity or discharge shall not increase the concentration of suspended solids in the receiving water by more than 10 percent.

q) **[PC1 Insert]:** In the Waikato and Waipa Catchment the Waikato Regional Council shall be notified in writing at least 20 working days prior to commencing harvest operations in a forest. The written notice must include a harvest plan unless otherwise agreed with Waikato Regional Council.

Harvest Plan

For the purposes of 5.1.5 (q) a forest harvest plan means a documented plan, including a harvest plan map, which clearly identifies the area to be harvested and the method to be followed to ensure identified risks to water bodies arising from the harvesting operation are managed.

The harvest plan should include:

a. A harvest plan map to a scale of up to 1:10,000 showing:

i. Title, date, north arrow and harvest area boundary.

ii. The locations of all existing and proposed roads, tracks, landings, fire breaks and stream crossings.

iii. The locations of all water bodies, streams and wetlands.

iv. The location of any protected riparian vegetation including significant natural areas.

v. The proposed harvest methodology including cable and ground based harvest areas and the proposed direction of extraction.

vi. Proposed slash disposal areas.

b. Associated text specifying the controls on the harvest operations to manage the identified risks to water bodies in the block from the harvesting operations including:

i. Measures to control sediment discharges to water.

ii. Management of slash.

iii. Operations restrictions around water bodies.

iv. Areas of existing riparian vegetation to be protected.

Standard a) shall apply, except where the suspended solids concentration or black disc horizontal visibility in the receiving water is greater than the standards specified, at the time and location of discharge or of undertaking the activity. Then there shall not be any increase (i.e. further deterioration) in the receiving water suspended solids concentration or black disc horizontal visibility of more than 20% as a result of the activity or discharge.

The point at which compliance with this standard shall be measured is after reasonable mixing has occurred which in any instance does not exceed 200 metres from the point of discharge.

a. Soil disturbance associated with the construction of a road or track within 20 metres of a culvert or bridge provided for in Rules 4.2.8.1, 4.2.8.2, 4.2.9.1, 4.2.9.2 and 4.2.9.3;

i. Shall not occur adjacent to Significant Indigenous Fisheries and Fish Habitat Class waters during August to December inclusive and Significant Trout Fisheries and Trout Habitat class waters during May to September inclusive; and,

ii. Shall be stabilised against erosion by vegetative cover or other methods as soon as practical following completion of the activity and no later than two months from the date of disturbance to avoid the adverse effects of sediment on water bodies; and

iii. The location of the proposed soil disturbance shall be notified to the Waikato Regional Council in writing at least 10 working days prior to commencing construction.

APPENDIX 2: Quote from Klee Primary evidence Block 1

[6.23] Whangamarino wetland is vulnerable to increased fluctuations in water levels. At low water levels, it is vulnerable to “drying out”. At high water levels, the Wetland is vulnerable to the increased sediment and nutrients delivered to the Wetland with floodwaters. Blyth e al. (2013) found a relationship between flood water levels and changes in vegetation within the Wetland. There have been significant changes to vegetation community structure over time caused by physico-chemical changes to the wetland through alterations to hydrology, sediment and nutrient dynamics. High sediment and nutrients loads, particularly TP causes nutrient enrichment of wetlands and disrupts the natural succession of vegetation and formation of peat soils. The mineral content of the peat in bogs is typically very low because they are disconnected from upland sediment sources. Mineral content in Waikato peat bogs is often <5% (Clarkson et al., 2004).

[6.24] Soil total phosphorus concentrations are tightly linked with sediment deposition rates in Whangamarino Wetland. There has been an apparent shift in sedimentation rates and sediment characteristics with a rapid increase in sediment accumulation since the mid-1980s in Whangamarino (Gibbs 2009). Areas of wetland with high soil total phosphorus typically have a high abundance of introduced plant species. Since 1963 Grey Willow and manuka have invaded a large area of Whangamarino which has negatively affected natural peat forming process in those parts of the wetland (Blyth et al. 2013). Given the current rate of advancement it is likely that significant decreases in the extent of bog habitats will occur in relatively short, 5-10 year timeframes, if management changes are not implemented to significantly reduce further sediment deposition and eutrophication.

…

[6.27] The various wetland types found in Whangamarino Wetland have diverse degrees of sensitivity to differing hydrological, sediment and nutrient regimes. The sensitive raised bog in Whangamarino Wetland is in relatively pristine condition (good water quality) and is of high ecological significance. This wetland type is at high risk particularly due to increased nutrient and sediment loading during flood events. It is important to note

that nutrient and sediment loading in sensitive wetland areas are intertwined with water levels in the wetland. During non-flood periods, the majority of contaminates are contained in river channels and get conveyed through the wetland downstream. 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.

APPENDIX 3: REQUIREMENTS FOR ECOSYSTEM HEALTH IN NPSFM 2017

1.1 The following sets out reasoning why Compulsory National Values cannot be 'traded off' for other national values, under the NPSFM 2017.

1.2 Objective CA1 says that freshwater objectives must be established "*for national values*".

1.3 A "national value" means "any value described in Appendix 1". Appendix 1 includes:

- "Compulsory National Values" (ecosystem health and human health for recreation); and
- "Other National Values".

1.4 Other National Values that may compete with ecosystem health could include water supply, commercial and industrial use, hydro-electric power generation, animal drinking water, irrigation, cultivation and food production. There is a question as to how to reconcile competing values. The preferred interpretation is that if "other" national values are found to apply to the waterbody, they are *also* to be provided for. This does not allow preferring another National Value *over* Ecosystem Health such that ecosystem health is not provided for.

1.5 This approach is supported by Policy CA2e)iii, which states:

> e) formulating freshwater objectives:
> …
> iii … where an attribute applies to more than one value, the most stringent freshwater objective for that attribute is adopted...
> (Emphasis)

1.6 Another interpretation would be contrary to Objective A1 NPSFM and section 5, which both refer to safeguarding "*life supporting capacity".* Dr Canning's evidence Block 1 refers to the concept of ecosystem health - this equates to life-supporting capacity. It

would not be consistent with the purpose of the Act that aspects of the definition of ecosystem health were *not* safeguarded[75].

1.7 Policy CA2(a) says that consideration must be given to how the national values "*apply to the local and regional circumstances"*. This would include consideration of whether the other national values are locally, regionally or nationally important - which economic analysis may contribute to. Even for a nationally important water supply system, or hydro-electric power scheme, the compulsory national values must still be provided for. To find otherwise would make redundant the careful regime put in place in Policies CA3 and CA4:

- Policy CA3 states that freshwater objectives for the compulsory bottom lines must be above the national bottom lines for all FMU's, unless already below the national bottom line and the regional council considers it appropriate to continue that circumstance because, *inter alia* for "*significant infrastructure (that was operational on 1 August 2014) listed in Appendix 3*":

  - it is necessary to realise the benefits provided by the listed infrastructure; and
  - it applies only to the waterbody, water bodies or any part of a waterbody, where the listed infrastructure contributes to the existing water quality.

    (Emphasis)

- The only other circumstances where freshwater objectives may be set below the national bottom lines are on a transitional basis, for the periods of time set out in Appendix 4, or where existing freshwater quality is caused by naturally occurring processes (Policy CA3(a) and CA4).

[75] The definition of "ecosystem health" in NPSFM includes maintenance of "ecological processes", a "range and diversity of indigenous flora and fauna", "resilience to change" and the support of a "healthy ecosystem appropriate to that freshwater body type".

- So, other than for natural occurring processes rendering freshwater quality below national bottom lines, the NPSFM requires all other circumstances where freshwater objectives are set below national bottom lines, to be referenced in Appendices 3 and 4.

- Some parties may argue that this careful regime only applies to attributes contained in the NOF. But the NOF (Appendix 2) misses out some of the attributes necessary to provide for ecosystem health. This is recognised in the NPSFM itself.[76]

- To adopt an approach for those attributes that are not currently in the NOF that differs from the approach in Policy CA3, would make a nonsense of the Policy. For example, this could provide a ability to set a value for an attribute such as Phosphorus, below what scientists consider is necessary to provide for Ecosystem Health, in a waterbody with a significant water supply scheme, while other attributes in the NOF *must* be above bottom lines for ecosystem health (because Policy CA2 requires that). The NPSFM does not intended this. As stated, the NPSFM indicates that other attributes, not contained in the NOF, must be set at the most stringent level (where an attribute applies to more than one value) or at least consistently.[77]

- The fact that there is no infrastructure listed in Appendix 3 is neither here nor there. Parties cannot argue that the absence of any infrastructure in Appendix 3 is an indication Appendix 3 is not intended to have the role as the sole mechanism by which the NPSFM anticipates

[76] Policy CA2(c)(i)(B) - other attributes may need to be added. For additional attribute states, not listed in Appendix 2, freshwater objectives must be formulated in numeric terms where practicable, otherwise in narrative terms (Policy CA2(e)(ii)).

[77] The Periphyton Table contains a "Note" stating *inter alia*:
"Note: to achieve a freshwater objective for periphyton within a freshwater management unit, regional councils must at least set appropriate instream concentrations and exceedance criteria for dissolve inorganic nitrogen (DIN) and dissolved reactive phosphorus (DRP). Where there are nutrient sensitive downstream receiving environments, criteria for nitrogen and phosphorus will also need to be set to achieve the outcomes sought for those environments."
Policy CA2(e)(iii) states that "where an attribute state applies to more than one value, the most stringent freshwater objective for that attribute is adopted".

"other" national values could override the compulsory values.

1.8 It is acknowledged that Policy CA2(f) contains matters that must be considered "*at all relevant points in the process*". Economic wellbeing and productive opportunities may be relevant to the *level* at which ecosystem health is to be provided for, and *timeframes* it is to be achieved. They may also be relevant to choices between values[78] - but not choices between the value of ecosystem health and out-of-stream values.

1.9 Ultimately the NPS must give substance to Part 2 of the Act. Under section 45(1) *"[t]he purpose of national policy statements is to state objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act*" (emphasis). The purpose of the Act was considered by the Supreme Court in *King Salmon* [2014] NZSC 38. The Supreme Court said that, under Part 2, environmental protection is a core element of sustainable management.[79] [80]

[78] The reference in policy CA 2 (f)(iv) to "choices between the values that the formulation of fresh water objectives and associated limits would require".

[79] *King Salmon* at [24(d)], [28], [47], [146], [148], [149] and [152].

[80] *King Salmon* at [24(c)]:

…there has been some controversy concerning the effect of the word "while" in the definition. The definition is sometimes viewed as having two distinct parts linked by the word "while". That may offer some analytical assistance but it carries the risk that the first part of the definition will be seen as addressing one set of interests (essentially developmental interests) and the second part another set (essentially intergenerational and environmental interests). We do not consider that the definition should be read in that way. Rather, it should be read as an integrated whole. This reflects the fact that elements of the intergenerational and environmental interests referred to in subparas (a), (b) and (c) appear in the opening part of the definition as well (that is, the part preceding "while"). That part talks of managing the use, development and protection of natural and physical resources so as to meet the stated interests - social, economic and cultural well-being as well as health and safety. The use of the word "protection" links particularly to subpara (c). In addition, the opening part uses the words "in a way, or at a rate". These words link particularly to the intergenerational interests in subparas (a) and (b). As we see it, the use of the word "while" before subparas (a), (b) and (c) means that those paras must be observed in the course of the management referred to in the opening part of the definition. That is, "while" means "at the same time as".