BEFORE THE NORTHLAND REGIONAL COUNCIL

under:	the Resource Management Act 1991
in the matter of:	Resource consent applications by the Te Aupōuri Commercial Development Ltd, Far North Avocados Ltd, P McLaughlin, NE Evans Trust & WJ Evans & J Evans, P & G. Enterprises (PJ & GW Marchant), MP Doody & DM Wedding, A Matthews, SE & LA Blucher, NA Bryan Estate, SG Bryan, CL Bryan, KY Bryan Valadares & D Bryan (Property No 1), MV Evans (Property No 2), MV Evans (Property No 1), Tuscany Valley Avocados Ltd (M Bellette), NA Bryan Estate, SG Bryan, CL Bryan, KY Bryan Valadares & D Bryan (Property No 2), Tiri Avocados Ltd, Valic NZ Ltd, Wataview Orchards (Green Charteris Family Trust), Mate Yelavich & Co Ltd, Robert Paul Campbell Trust, Elbury Holdings Ltd (C/-K J & F G King) for new groundwater takes from the Aupōuri aquifer subzones: Houhora, Motutangi and Waiharara and applications by Waikopu Avocados Ltd, Henderson Bay Avocados Ltd, Avokaha Ltd (c/- K Paterson & A Nicholson), KSL Ltd (c/- S Shine), Te Rarawa Farming Ltd and Te Make Farms Ltd for increased existing consented takes from the Aupōuri aquifer subzones: Houhora, Motutangi, Sweetwater and Ahipara.

Legal submissions on behalf of the Director-General of Conservation

2 September 2020

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INTRODUCTION

1. The Director-General of Conservation made a submission opposing the applications, stating that more information is required before Council can contemplate granting consents.[1]

2. Yesterday, a number of issues were raised for the Applicant to respond to including:

    a. Stream depletion effects (Mr Williamson said he would provide a table).

    b. Proposed trigger levels for those not already involved in MWWUG (TBA).

    c. Monitoring points for effects on dune lakes (NRC monitoring network).

    d. Sensitivity analysis work on the Aupōuri Aquifer Groundwater Model (AAGWM).[2]

    e. Volumes applied for and whether these were justified.

    f. Comments on the detail of the GMCP's – what is working and is not working and potential changes.

3. We have not included in this list other matters that may be key for other submitters (such as effects on existing bores).

4. DOC would be happy to engage with Applicants, and Council, on these issues, once the information that is required to be provided by Applicants under the Fourth Schedule to the Act is provided.

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[1] The functions of the Department are set out in section 6 of the Conservation Act 1987, and relevantly include:
The functions of the Department are to administer this Act and the enactment specified in Schedule 1, and, subject to this Act and those enactments and to the directions (if any) of the Minister,—
(a) to manage for conservation purposes, all land, and all other natural and historic resources, for the time being held under this Act, and all other land and natural and historic resources whose owner agrees with the Minister that they should be managed by the Department. …".

[2] Aupouri Aquifer Groundwater Model, Factual Technical Report – Modelling – Aupouri Aquifer Water User Group. WWLA0184, Rev 3, dated 5 February 2020 and prepared by Williamson Water & Land Advisory Ltd (hereon referred to as 'the Model Report').

5. It is not DOC's job to identify potential adverse effects on wetlands and other surface water features. Because they are not mapped, or because there is no minimum flow set for an ephemeral waterbody, does not mean that they do not need to be assessed (in the Assessments of Effects). Objective F.1.1 of the Proposed Regional Plan for Northland (PRPN) puts those matters at the forefront.[3]

6. Without the information being provided, the Director-General finds itself in the difficult position that it must seek a decline of the consent applications at this hearing. Alternatively, the Applicants should agree to a further timeframe i.e. adjournment, in which surface features can be identified, analysis made of potential impacts (based on February 2020 modelling) and monitoring points and trigger levels formulated accordingly.

7. The amount of material that is still to be provided by the Applicant, following questioning, also raises *process* issues for the submitters at this hearing.

[3] **F.1.1 Freshwater quantity**
Manage the taking, use, damming and diversion of fresh water so that:
1) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water are safeguarded and the health of freshwater ecosystems is maintained, and
2) the significant values, including hydrological variation in outstanding freshwater bodies and natural wetlands are protected, and
3) the extent of littoral zones in lakes are maintained, and
4) rivers have sufficient flows and flow variability to maintain habitat quality, including to flush rivers of deposited sediment and nuisance algae and macrophytes and support the natural movement
of indigenous fish and valued introduced species such as trout, and
5) flows and water levels support sustainable mahinga kai, recreational, amenity and other social and cultural values associated with freshwater bodies, and
6) adverse effects associated with saline intrusion and land subsidence above are avoided (except where the taking, use, damming or diversion is for groundwater management at the Marsden Point refinery, in which case this clause does not apply), and
7) it is a reliable resource for consumptive and non-consumptive uses.

CUMULATIVE EFFECTS

8. "Cumulative effects" have been defined by the US Department of Commerce as:[4]

> "... the impact on the environment which results from the incremental effects of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency… or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

9. (This definition is consistent with s3(d) of the Act.)

10. The definition of "effect" in the Act, also includes effects that have a low probability but a high potential impact. Section 104 requires assessment of these effects.

11. A tipping point or a saturation point does not need to be reached before cumulative effects become a concern.[5]

12. The AAGWM certainly assists in providing a basis for assessing cumulative adverse effects for water takes from the Aupōuri aquifer. Cumulatively, these applications would increase the allocation of the Aupōuri aquifer from approximately 50% to over 80% - noting that sub-aquifer allocations range from 40 to 101% based on Proposed Regional Plan for Northland (PRPN) allocation limits.

13. Other than relying on the (existing) regime for the Kaimaumau-Motutangi Wetland, most the applications do not take the further step of assessing cumulative effects on surface water bodies.[6]

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[4] Judge Jackson in *Predictions in an Uncertain World – assessing effects under the Resource Management Act 1991,* NZLS Continuing Education Programme, 20.10.16), as consistent with s3(d) of the Act.

[5] Discussed in *RJ Davidson Family Trust v Marlborough District Council* [2016] NZEnvC 81 at [204], a case regarding the potential for cumulative adverse effects on the King Shag habitat in the Marlborough Sounds, referring to *Emerald Residential Limited v North Shore City Council* A31/2004 at [24]. See also *Cashmere Park Trust v Canterbury Regional Council* C48/2004 at [37].

[6] Many of the application documents simply state: *"Based on scenario 2 (Proposed Extraction – includes current and proposed groundwater extraction totalling a combined peak annual rate of 11,673,451 m3 /year), the impact on surface water resources will be less than minor"* without even identifying potentially affected surface waterbodies.

However, without identifying the surface water bodies that may be affected, and potential effects on those, there is no means by which you can have any surety that the important values that may be present in surface water bodies are safeguarded.

14. The Kaimaumau Wetland, Lake Rotokawau, Lake Ngakapua, Lake Ngati, Lake Rotoroa, and the dune lakes are just some of the waterbodies located over the Aupōuri aquifer which the Director-General considers to be outstanding and to contain significant values. Some of which are identified in some applications, but not assessed in any detailed way by the Section 42A Report. (Refer Appendix 1 to these submissions).

15. For none of the applications is the analysis of potential impacts on surface water bodies updated to take into account the modelling re-run in February 2020.

DEALING WITH UNCERTAINTY

16. The conclusions reached in the Officer's Report are based upon coarse analysis. Mr Williamson appears to acknowledge this in his Supplementary Statement. For the impacts on surface flows at a regional scale the model predicts an overall reduction of 4.3% in annual minimum flows, however that may be more or less at different locations.

17. The very fact that the Aupōuri Aquifer Model had to be rerun, due to the inaccuracies in historic bore level data, illustrates difficulties when one places too much reliance on modelling.

18. Evidence of Mr Blyth and Mr Baker for the Director-General, is that uncertainties remain following modelling.[7] As commented

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[7] Mr Baker at [35] –[36]: *"For most of these applications, aquifer parameters from neighbouring wells, and existing pump testing information, has been used to inform the individual assessments. … This is approach is unusual, however I acknowledge that it is not without precedent. It assumes that the new wells will behave and have similar effects to existing wells."* Mr Baker at [68]: *"The AEEs presented for most applications are based on modelled data and have not included data obtained from aquifer and pump testing of the proposed abstraction bore. This is because in most cases the bores are yet to be drilled. The assessment assumes that all of the new bores will have aquifer properties similar to existing bores."* Mr Baker at [48] states that radon sampling has identified some streams where there is groundwater contributing,

upon adjusting various inputs to achieve better calibration, appears to have been rather arbitrary. All parties appear to agree that some uncertainty attaches to the AAGWM. There is little in the way of explanation of the extent of error.

19. Conclusions are at a coarse scale. There may be areas within the overall modelled area that rely more on groundwater inputs. Dr West's evidence points out some surface waterbodies may be more susceptible to changes in water levels. As stated by Dr West, the incidence of critically dry periods in Northland – recently experienced - can be expected to increase.

20. In the *Burgoyne* decision, the Environment Court recognised that some waterbodies and associated values, can be *very* sensitive to changes in water levels - in that instance the Kaimaumau wetland.[8]

21. Mr Blyth's evidence is that the calibration of the water balance (bucket) model, was undertaken on the assumption that the aquifer is rainfed. Sensitivity analysis is required to show whether a calibration is still possible with groundwater inputs. No sensitivity analysis was conducted on the parameter in the modelling report that open water levels are 1.4m. He recommends that data from both KM3 and KM4 should be further examined to verify the divergence from the model. Mr Blyth states that (at his paragraph 24):

> "Model performance or calibration fit for water levels, such as the error, standard deviation or Percent Bias (PBIAS), has not been presented and compared to published modelling literature values. So generalised conclusions about its performance by WWLA are subjective."

22. We do not respond in detail to the Mr Williamson's reliance on the Wildlands Report to establish that the Aupōuri Aquifer is rainfed, because that reporting was clearly carried out for another purpose. The highlighting of Dr Robertson's (DOC)

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indicating that it is feasible that streams in the modelled area could be affected by groundwater takes, therefore streams require identification/analysis.

[8] *Burgoyne v Northland Regional Council* [2019] NZEnvC 028 at [43].

agreeing to methodology, under “Acknowledgements” in the Wildlands Report, is unhelpful.

23. For modelling approaches, we now have the benefit of clause 1.6 NPSFM (2020).[9] 1.6(3)(a) stating that decision-making must not be delayed because of uncertainty. Clearly, this does not mean that applications must be *granted* in the face of uncertainty. Rather, guidance must be taken from what “*will give best effect to the National Policy Statement*”. In our submission, this directs the decision-maker to the NPSFM 2020 Objective: Te Mana o Te Wai.

24. Te Mana o Te Wai recognises that *“the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future”* is important. However, it “prioritises” the following:

> the health and well-being of water bodies and freshwater ecosystems.

25. Te Mana o Te Wai recognises that, for prosperous communities and economic (as well as social, cultural, spiritual) wellbeing, we *first* need to ensure the wellbeing of our waterbodies. The concept of Te Mana o Te Wai recognises that regions such as Northland will not have long-term social & economic wellbeing if the health and wellbeing of their waterbodies are placed second.

[9] “**1.6 Best information**
(1) A requirement in this National Policy Statement to use the best information available at the time is a requirement to use, if practicable, complete and scientifically robust data.
(2) In the absence of complete and scientifically robust data, the best information may include information obtained from modelling, as well as partial data, local knowledge, and information obtained from other sources, but in this case local authorities must:
(a) prefer sources of information that provide the greatest level of certainty; and
(b) take all practicable steps to reduce uncertainty (such as through improvements to monitoring or the validation of models used).
(3) A person who is required to use the best information available at the time:
(a) must not delay making decisions solely because of uncertainty about the quality or quantity of the information available; and
(b) if the information is uncertain, must interpret it in the way that will best give effect to this National Policy Statement.”

26. The coastal influences in the Anapōuri Peninsula also means that Policy 11 of the NZCPS is relevant.[10] The provisions of this Policy are directive, within the meaning of *NZ King Salmon*.[11]

27. The higher level policy documents, do not allow a *'she'll be right'* attitude for potential effects on threatened and At Risk flora and fauna.

28. Dr West discusses some of the taxa listed as 'at risk' in the New Zealand Threat Classification lists. It is difficult for him to take this analysis further, without information from Applicants on what surface water bodies may be affected (and for those Applicants that *have* provided this information, updated assessment what the potential adverse effects may be on ecosystems). There may be adverse effects even from 'minimal' predicted changes in water levels. Ms Letica's Supplementary Statement leaves the door open to working with

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[10] **Policy 11 Indigenous biological diversity (biodiversity)**
To protect indigenous biological diversity in the coastal environment:
(a) avoid adverse effects of activities on:
(i) indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists;
(ii) taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;
(iii) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare;
(iv) habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;
(v) areas containing nationally significant examples of indigenous community types; and
(vi) areas set aside for full or partial protection of indigenous biological diversity under other legislation; and
(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects
of activities on:
(i) areas of predominantly indigenous vegetation in the coastal environment;
(ii) habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;
(iii) indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;
(iv) habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;
(v) habitats, including areas and routes, important to migratory species; and
(vi) ecological corridors, and areas important for linking or maintaining biological values identifed under this policy.

[11] Policy D.2.18 PRPN also says that "the greatest extent of adverse effects reasonably predicted by science, must be given the most weight" where there is "scientific uncertainty about the adverse effects of activities on:species listed as Threatened or At Risk in the New Zealand Threat Classification System."

DOC once DOC provides some more specific information ([4.7] bullet point 1). With respect to Ms Letica, the general information provided by Dr West *is* sufficient to raise the issue of potential adverse effects on threatened fish species and plants found in the modelled area. In the *Burgoyne* decision referring to Joint Witness Conferencing and stating at [21]:

> "… it was acknowledged by all the experts that NZCPS Policy 11 (a) is engaged and that to avoid adverse effects on taxa, ecosystems and vegetation types, and indigenous species, there are surrounding areas that contain nationally significant examples of community types, and areas set aside for full or partial protection. In short, all items of Policy 11 (a) (i) to (vi) are engaged." (Emphasis)

29. In the *Burgoyne* decision, the Environment Court accepted DOC's evidence that even a drop of 100mm could be of concern for the Kaimaumau wetland.[12] The Kaimaumau wetland is not the only sensitive surface water body potentially affected. Outstanding freshwater bodies are identified in the PRPN and are within the modelled area.[13] For the other waterbodies set out in Dr West's evidence (wetlands including ephemeral, springs, streams, lakes and ponds) the analysis may differ.

30. To comment further, DOC would need to assess information provided by Applicants on potentially affected waterbodies, and then their analysis of any potential "*effect on ecosystems,*

[12] At [57]. On this basis the Court inserted trigger levels for the first year of more than 25mm in one month (Tier 1) and 50mm (Tier 2) respectively until more information was obtained, stating: *"Given that we do not, at this stage, understand the natural fluctuation levels, or the effect of the existing draws, we consider that a suitably conservative number would be to look at any change of more than half of that figure, ie 50mm in any yearly period on a rolling basis. On the other hand, any rapid drawdown, of even 25mm, may indicate an ongoing tendency towards exceedence within a very short period of time."* Thus the Court rejected the evidence of Mr Williamson, summarised at [28]: "*It was apparent from the evidence of Mr Williamson, the hydrologist for the Applicant, that there is some form of related data available. However, it was not sufficient to give any certainty in modelling results as to the outcome of additional drawdown. Notwithstanding that, Mr Williamson considered that even with the most conservative modelling available, there is likely to be no more than minimal effects on the area affected by the applications for extraction. … For this reason, he suggested that ongoing monitoring during abstraction for the first year would enable the developing model to be calibrated and to check anticipated outcomes with actual results."*

[13] PRPN lists Outstanding waterbodies, some of which are in the modelled area, and maps the Sweetwater Dune Lakes as an ONF.

including effects on plants or animals" - using the wording of the Fourth Schedule clause 7(1)(c).

ILLUSTRATING DOC'S CONCERNS

31. To illustrate the DOC's concern with the lack of refined analysis, the AEE for the Elbury Holdings Ltd application does identify surface water bodies that may be affected. This includes Lake Rotoroa which is a dune lake and one of the Sweetwater Lakes.[14] That AEE analysis has not (to our knowledge) been updated since the February 2020 model re-run. The AEE concludes effects on this Lake will be minor due to:[15]

> "…Predicted maximum cumulative drawdown in the shallow aquifer at the location of these water bodies is less than 0.35m….approximately 0.105 m change in water level in a standing water body…Lake Rotoroa (and we have assumed the same for the others)…. Is classified as a shallow lake under the pRPN…Policy D.4.15…states…'median lake levels are not changed by more than 10%'...10% is equivalent to 0.365 m and therefore the maximum level of effect indicated (0.105m) is well within the minimum level for the lake. The pattern of lake level fluctuation (high in winter and low in summer) will remain unchanged as irrigation ceases over winter."

32. Following the model re-run, NRC produced a 'renotification' report. This is referred to paragraph 22 of the Officer's Report as support for the following statement *"… the effects on surface water flows have not changed."*

33. Under the heading "Effects on Surface Water Features" the renotification report states:

> Each application's AEE assessed the adverse effects of their take on the surface water features in their respective aquifer subsection and concluded that the effects would be no more than minor. This conclusion was based on the known minimal connectivity between the deep aquifer and the over lying

[14] Champion, P. (2012). Northland Lakes Strategy (No: HAM2012-121). NIWA Client report prepared for NRC – refer Table 3.2.
[15] AEE s4.2 page 11

> shallow aquifer, and that the surface water features largely occur on hard pans that minimise the linkage to the shallow aquifer. For example, in the Sweetwater area water levels in Lakes Heather and Rotoroa are around 30 m above sea level, while groundwater levels in the shallow sand aquifer are around 20 metres lower. The water level in surface water features also naturally fluctuates with seasons. During a 1 in 50 year drought, which is the modelled worst case scenario, it is expected that many of the surface water features will be severely affected by such a sustained dry period. It is considered that the expected drawdown of 0.5 m in shallow groundwater level over the majority of the Aupōuri aquifer model area would not add to the effects on surface water features during such a drought period. It is also considered unlikely that any additional adverse effects on the ecology and habitat of surface water features will occur as a result of these takes during such a drought period.

34. There is no worst case scenario stated.

35. Even the predicted .105m drawdown on Lake Rotoroa could have adverse effects. DOC has not seen these effects analysed anywhere. This drawdown would breach the limit that NRC has now agreed to through appeals on the PRPN (being the same as the standard for wetlands *"no change in their annual or seasonal range in water levels"*).[16]

36. Using another example, the Te Aupōuri Commercial Development application is one that does identify potential effects on surface water bodies stating:[17]

> "… the variation in annual minimum discharge from groundwater to surface water over a range of drought severities (i.e. annual to 100-year recurrence interval) is likely to be in the range of a 2% reduction with the proposed groundwater abstraction, with the relative reduction increasing slightly for the more infrequent events. In the event of a 100-year drought the annual low flow with proposed groundwater

[16] Recorded in the evidence of Mr Tait Evidence dated 28 August 2020 (attached) at [6.45] – [6.46]: "*I consider that given their importance, the minimum level for the outstanding and high ecological value lakes should be no change in their seasonal or annual range in water levels."*

[17] Opus s92 Response, Q3, p7.

> abstraction is likely to be under 2.4% less than under the conditions applied in the Base Case scenario. … This magnitude of alteration of surface water hydrology is considered to be negligible. Consequently, the potential risk of ecological change is assessed as low, and any ecological and natural character effects on overlying surface waterbodies in the drawdown areas will be less than minor."

37. NRC maps show that there are in excess of 100 surface water takes up to 250 L/s across the model domain. The mapping suggests that there are currently two streams located in the area of predicted cumulative drawdown that are over-allocated; the Waihopo Stream in the north, and a tidally affected Stream at Paparore.[18]

38. Policy D.4.10 of the PRPN states:

> *For the purpose of assisting with the achievement of Objective F.1.1 of this Plan:*
> *1) apply the allocation limits set in H.4 Environmental flows and levels when considering and determining applications for resource consents to take, use, dam or divert fresh water, and*
> *2) ensure that no decision will likely result in over-allocation.*
>
> (Emphasis)

ADAPTIVE MANAGEMENT

39. The Director-General would not be opposed, 'in principle', to an adaptive management regime similar to the regime developed for the Kaimaumau Wetland, however there is insufficient information to proceed with that at this time.

40. A version of the precautionary approach, and adaptive management, is contained in the EEZ and Continental Shelf (Environmental Effects) Act 2012. That Act expressly recognises adaptive management regimes can address uncertainty but:

> (1) When considering an application for a [marine] consent, a [marine] consent authority must—

[18] Evidence of Mr Baker.

(a) make full use of its powers to request information from the applicant, obtain advice, and commission a review or a report; and
(b) base decisions on the best available information; and
(c) take into account any uncertainty or inadequacy in the information available.

(2) If, in relation to making a decision under this Act, the information available is uncertain or inadequate, the marine consent authority must favour caution and environmental protection.
(3) If favouring caution and environmental protection means that an activity is likely to be refused, the [marine] consent authority must first consider whether taking an adaptive management approach would allow the activity to be undertaken

(Section 61 Information principles)

41. The decisions in *Trans Tasman Resources Limited v Taranaki Whanganui Conservation Board* cases[19] provide useful discussion of adaptive management (although I note that section 61 above was amended after the initial Trans Tasman Resources decisions). Trans Tasman Resources used a sophisticated sediment plume model in an application for iron sand mining in the South Taranaki Bight. A model is only as robust as its assumptions/inputs – in that case the plume was affected by tides, larger scale currents, weather events, wind, sediment size and concentrations. In answering a question about the accuracy of modelling results, TTR initially stated: *"it will not be possible to establish this directly until, and unless, the consent is granted and the proposal implemented."*

42. The principles developed in those cases, and by the Supreme Court in *Sustaining our Sounds v Marlborough District Council* (King Salmon),[20] include that unanticipated effects must be able to be managed by changing or stopping the activity. The Court expressed concerned about this in the *Burgoyne* decision.

43. The NZ Courts have said that adaptive management is not a 'suck it and see' approach - there needs to be some confidence around the nature and extent of potential damaging effects

[19]Currently culminating in Court of Appeal decision [2020] NZCA 86.
[20] At [129].

before this approach is allowed. Any effects must be able to be remedied before they become irreversible. If you are unsure whether the adaptive management conditions/management plans proposed by the Applicants would protect the environment, you are required to decline the consents. In our submission this is also consistent with the new Clause 6.1 of the NPSFM. With the lack of information as to whether the proposed takes could result in material harm to the environment, we submit the grant of consents at this time, would be inconsistent with the requirement to favour caution.

44. Finally, we note that the NRC's planning evidence on appeals on the PRPN Water Quantity provisions (attached) states:[21]

> I expect that if an applicant fails to demonstrate how the proposal will achieve Objective F.1.1 it will be declined.
>
> (Emphasis)

Additional issues arising

45. In the NES Freshwater 2020 regulations, "natural wetland" has the meaning set out in the NPSFM 2020. This is defined to mean:

    a. a wetland (as defined in the RMA) that is not constructed by artificial means (except as an offset or restoration project);

    b. geothermal wetland; or

    c. 'any area of improved pasture that, at the commencement date, is dominated by exotic pasture species and is subject to temporary rain-derived water pooling".

46. Nowhere does this definition require the wetland to be formally mapped.

47. The reference in Mr Christie's evidence to s88A of the RMA, was intended to point out that under s88A(1)(b)(iii) that the activity status at which the applications were lodged is 'saved'.

[21] Evidence of B. Tait dated 28.08.20 – appeals on the Water Quantity provisions of the PRPN at [6.28].

But the savings provision does not apply to changes to the objectives and policies of planning documents (only the activity status). Nevertheless, it is DOC's submission that an analysis *should* be made as to whether any of the proposed takes are within 100 m of a natural wetland. Even without the existence of the NES Freshwater regulations, it is remarkable that this is currently unknown. It *is* possible to identify unmapped wetlands, through on-the-ground assessments (i.e. by mapping them).

48. For the Sweetwater activity status, methodology that sits outside the PRPN cannot be relied upon to bring the allocation down from 101%.

49. In relation to the proposed amendments to the existing (MWWUG) GMCP outlined in the evidence of M Letica, DOC has not been provided with formal notice of a proposal to amend the GMCP. That is a separate process to this hearings process and would require formal consultation with DOC (that has not occurred). DOC has only been provided with these, and the other two GMCP's proposed by the Applicant, 10 working days prior to the hearing.

50. The application of the decision in *Ngati Rangi*[22] to the existing consents, is nuanced due to the staging of the consents and the *Augier* condition that was offered up in that process. Therefore it is our submission that the existing takes do not form part of the 'existing environment' for the purpose of your assessment.

Dated this 2nd day of September 2020

S Ongley/L Sutherland
Counsel/Legal advisor
for the Director-General of Conservation

[22] [2016] NZHC 2948.

Appendix

Resource consent applications that identify surface water features:

Te Aupouri Commercial Development Ltd	Notes 'extensive' surface water bodies within Te Raite Station and near the farm. These include a number of wetlands, dune wetlands, dune lakes, rivers, streams and drains. (AEE, p11). *"The majority of the waterbodies in the vicinity of the proposed take and use areas are perched by their underlying soils, for example the dune lakes and wetlands, and so would not be adversely affected by a groundwater take. Surface water bodies in irrigation areas A, B, C, and F are not considered likely to be affected. Proposed Irrigation Areas D and E lie between the Korakonui and Kaikati streams, both tributaries of Houhora Harbour. While bores in both area D and E would be screened in the shell layer with the top of the screen between 94 m and 110 m below ground level, semi-confined leakage could serve to cause a depletion of the overlying streams. Additionally, the interaction between surface water bodies (Kaimaumau wetland, Selwyn and Seymour drains) adjacent the station and the deep shell bed aquifer in the Motutangi – Waiharara allocation zone was investigated using radon tracers in 2017 (Appendix 4). The results of that investigation suggest that there is no hydraulic connection these water bodies and the deep shell bed groundwater. The overall lithological and hydrological setting of Korakonui and Kaikatia streams in Te Raite Station is sufficiently similar that stream flow depletion from deep shell bed bore pumping is small to negligible. Based on the proposed systems and this analysis, the effects of use of groundwater to irrigate land adjacent the Korakonui and Kaikatia streams would be less than minor. Overall, the proposed take and use of groundwater is expected to have a less than minor effect on surface water. Due to the low risk and small effects of the take and use on surface water bodies and therefore their flow, it is considered that freshwater ecology of the waterways should not be adversely affected. Any effects that may arise are expected to be insignificant."* (AEE, p17). *"The WWLA later report concludes that the variation in annual minimum discharge*

	from groundwater to surface water over a range of drought severities (i.e. annual to 100-year recurrence interval) is likely to be in the range of a 2% reduction with the proposed groundwater abstraction, with the relative reduction increasing slightly for the more infrequent events. In the event of a 100-year drought the annual low flow with proposed groundwater abstraction is likely to be under 2.4% less than under the conditions applied in the Base Case scenario. This magnitude of alteration of surface water hydrology is considered to be negligible. Consequently, the potential risk of ecological change is assessed as low, and any ecological and natural character effects on overlying surface waterbodies in the drawdown areas will be less than minor." (Opus s92 Response, Q3, p7).
P & G Enterprises (PJ & GW Marchant)	The application notes the Kaikatia Stream which passes through the property. The application also notes other nearby streams, Korakonui, Waimamaku and two other unnamed streams. There also appears to be two waterbodies west of the property, based on the topo map and satellite image. The application models the depletion of the Korakonui stream being 3L/s, depleting the 365 residual flow to 17L/s (from 20L/s), and the depletion of the Kaikatia stream being 3.8L/s, depleting the residual 365 residual flow to 26.2L/s (from 30L/s).
MP Doody & DM Wedding	The AEE does identify specific waterbodies- • Unnamed drain to north (0.3km) • Unnamed swamp to the northwest (1.1km) • Unnamed swamp to southwest (0.9k) Based on Topo Maps and Satellite, there is a wetland area southeast of the property. This has not been assessed/ noted in the application
A Matthews	The AEE does identify specific waterbodies- • Unnamed drain to northwest (0.3km) • Unnamed drain to south (0.3km) • Unnamed swamp to northwest (1.5km) • Unnamed swamp to southwest

	(2.3km) The application states that the effects would be less than minor and the Cumulative impact analysis indicated that the maximum potential drawdown in the shallow aquifer near the location of these surface water features ranged between 0.1 m to 0.2 m, which would translate to an insignificant impact within a standing or flowing water body. (AEE, 4.2, p18)
NA Bryan Estate, SG Bryan, CL Bryan, KY Bryan Valadares & D Bryan (Property No 1)	Although the application does not identify any specific waterbodies on or near the property, it indicates a reduction of 3.4%, most of which is experienced by a drain that runs through the property. The AEE considers that the model exaggerates the effects and that effects on surface water flows will be less than minor. (AEE, 4.1, p24).
MV Evans (Property No 2)	The AEE does note that there are various water bodies on the property that may be impacted, but does not identify specific surface water bodies. Based on Scenario 2 the AEE concludes that the effect of the proposed take will be within the limits set in the regional plan, and be no more than minor (AEE, 4.1, p19).
MV Evans (Property No 1)	The AEE does refer to the effects on drains and wetlands in the section on the effects on waterbodies (4.3) generally (does not identify specific waterbodies). Based on scenario 2 the AEE concludes that the effect of the proposed take will at the most a 0.5% reductions in a in a 100-yeat drought occurrence (AEE, 4.3, p22).
Tuscany Valley Avocados Ltd (M Bellette)	The AEE identifies the following waterbodies- • Selwyn Drain (0.4 km) • Unnamed dune lake to northwest (0.8 km) • Unnamed dune to south (1.0 km); • Unnamed dune to southwest (1.5 km); • Kaimaumau wetland to east (2 km); and • Lake Waiharara to south (5 km). The AEE notes that the analysis indicates that the maximum potential drawdown is less that 0.02m, which would translate to unmeasurable impact within any waterbody, and notes the commissioners report for the MWWUG (AEE, 4.2, p18). The AEE concludes that effects on surface

	water would be less than minor (AEE, 4.2, p19).
NA Bryan Estate, SG Bryan, CL Bryan, KY Bryan Valadares & D Bryan (Property No 2)	The AEE compares scenario 2 against scenario 1 indicates a reduction of 3.4%, most of which is experienced by a drain that runs through the property. The AEE considers that the model exaggerates the effects and that effects on surface water flows will be less than minor. (AEE, 4.1, p24).
Avokaha Ltd (c/- K Paterson & A Nicholson)	The AEE compares scenario 2 against scenario 1 and finds mean annual low flow virtually unchanged at the bore. The AEE considers that the model exaggerates the effects and that effects on surface water flows will be less than minor. (AEE, 4.1, p16).
KSL Ltd (c/- S Shine)	The AEE compares scenario 2 against scenario 1 and concludes mean annual low flow will be virtually unchanged at the bore and variation in annual minimum discharge from g/w to s/w over a range of drought severities to be at most a 0.035 reduction. (AEE, 4.1, p20).
Tiri Avocados Ltd Valic NZ Ltd Wataview Orchards (Green Charteris Family Trust)	See Application and AEE at 4.2: 2 potential surface water features that may be impacted: • A number of small unnamed streams and farm drains and • Lake Waiparera. Results indicate that Scenario 2 proposed abstraction may reduce drains mean annual (1-year) low flow by a maximum of 4% and the 5-year low flow by 9%. No change expected in hydrological function of lake due b/c will be abstraction from the deep shellbed aquifer. Evident that variation in annual minimum discharge from g/w to sf/w over a range of severities is not significant (30% reduction) and with proposed pumping this reduced by a further max of 10% during a 100 year event. Therefore impact on sf/w considered less than minor. Figures in groundwater modelling report show 'Lakes, Estuary, and Drains'.
Mate Yelavich & Co Ltd	*Application and AEE* *"4.2 Surface Water Effects*

	*As discussed in **Appendix B**, there are four potential surface water features that may be impacted by the proposed take:* *• Lake Waiparera to southwest (0.3 km)* *• Unnamed drain to north (0.6 km)* *• Lake Waikaramu to the east (4.7 km)* *• Kaimaumau wetland to east (6.4 km)* *The maximum additional drawdown in the shallow aquifer is less than 0.03 m. The drawdown in the shallow aquifer ranged between 0.1 m to 0.4 m in this area. This drawdown in porous media would translate to an insignificant impact within a standing or flowing water body.* *The findings of the MWGM were accepted with respect to impacts on the wetland (and by inference surface waters) with the Commissioners indicating in paragraph 153, "our view is that there are many influences on the wetland that are far greater than the MWWUG abstractions". Given that the additional impacts predicted from this bore are similarly negligible, the same conclusion can be drawn.* *The impact on surface water due to proposed abstract in deep aquifer will be less than minor."*
Robert Paul Campbell Trust	*Application and AEE Appendix B, Environmental Impact Analysis atp 39 " B.3 Surface Water Impact* *The surface water features in the area adjacent to Robert Campbell Family Trust are shown on Figure B4 and include:* *• Selwyn drain to northwest (0.3 km);* *• Unnamed swamp to northwest (0.7 km);* *• Unnamed drain to south (1.4 km);* *• Okohine stream to northeast (1.8 km);* *• Lake Waiparera to southeast (2.0 km);* *• Kaimaumau wetland to northeast (2.3 km); and* *• Lake Waikaramu to east (5.2 km).* *The maximum additional drawdown near the proposed take in the shallow aquifer is less than 0.2 m. The drawdown in this area ranged between 0.3 m to 0.4 m. This magnitude of drawdown in the porous media would translate to an even smaller impact within the standing or flowing water body.* *As a lake perching above the regional aquifer, Lake Waiparera is hydrological disconnected with the regional aquifer. The groundwater take in the deep aquifer is unlikely to induce any change in the hydrologic functionality of the lake.*

	The findings of the MWGM were accepted with respect to impacts on the wetland (and by inference surface waters) with the Commissioners indicating in paragraph 153, "our view is that there are many influences on the wetland that are far greater than the MWWUG abstractions". Given that the additional impacts predicted from this bore are similarly negligible, the same conclusion can be drawn. Therefore, the proposed take for the deep aquifer is unlikely to pose significant impact on the surficial hydrological features."
Elbury Holdings Ltd (C/-K J & F G King)	Four adjacent surface water features that may be impacted. See AEE at 4.2 and Appendix B: • Unnamed swamp to the northeast (0.2 km); • Lake Rotoroa to the southwest (0.6km); • Unnamed swamp to the northwest (0.6km); • Unnamed dune lake to the northwest (0.7) Lake Rotoroa is most hydrologically and ecologically significant. *"…Predicted maximum cumulative drawdown in the shallow aquifer at the location of these water bodies is less than 0.35m….approximately 0.105 m change in water level in a standing water body…Lake Rotoroa (and we have assumed the same for the others)…. Is classified as a shallow lake under the pRPN…Policy D.4.15…states…'*median lake levels are not changed by more than 10%'*...10% is equivalent to 0.365 m and therefore the maximum level of effect indicated (0.105m) is well within the minimum level for the lake. The pattern of lake level fluctuation (high in winter and low in summer) will remain unchanged as irrigation ceases over winter.' AEE s4.2 page 11.* Concludes less than minor.

IN THE ENVIRONMENT COURT OF NEW ZEALAND
AUCKLAND REGISTRY

I TE KŌTI TAIAO O AOTEAROA
TĀMAKI MAKAURAU ROHE

IN THE MATTER	of the Resource Management Act 1991
AND	of an appeal under clause 14 of Schedule 1 of the Act
BETWEEN	**FEDERATED FARMERS OF NEW ZEALAND**
	PUBLIC AND POPULATION HEALTH UNIT OF THE NORTHLAND DISTRICT HEALTH BOARD
	NORTHLAND FISH AND GAME COUNCIL
	MINISTER OF CONSERVATION
	NORTHPOWER LIMITED
	ROYAL FOREST AND BIRD PROTECTION SOCIETY
	Appellants
AND	**NORTHLAND REGIONAL COUNCIL**
	Respondent

BEN MICHAEL TAIT

EVIDENCE IN CHIEF – PLANNING

TOPIC 3 ALLOCATION AND USE OF WATER AND TOPIC 4 WATER QUANTITY

28 AUGUST 2020

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WYNNWILLIAMS

1. Introduction, qualifications, and experience

1.1 My name is Ben Michael Tait.

1.2 I am senior planner employed by Williamson Water & Land Advisory, which is an environmental consultancy based in Waimauku, Auckland, and Whangarei, Northland. I have practised as a policy analyst and planner largely specialising in water quality and quantity management under the RMA for approximately 12 years.

1.3 I hold a Bachelor of Arts in Biology from Pepperdine University and a Master of Environmental Legal Studies (Honours) from Auckland University.

1.4 I previously worked for Northland Regional Council, including preparing the water quality and quantity management provisions of the Regional Policy Statement for Northland 2016 (**RPS**) and the Proposed Regional Plan for Northland (**PRP**).

1.5 I co-authored the RMA section 32 report for the PRP and was the author of the RMA section 42A report (titled "Allocation and use of water"). I also participated in the hearing of the Independent Panel in 2018.

1.6 I have been engaged by Northland Regional Council to prepare evidence for this proceeding.

Code of conduct

1.7 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014 and agree to comply with it. The contents of this statement are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this statement.

Scope of evidence

1.8 My evidence is structured as follows:

a. Executive summary.

b. An overview of Topics 3 and 4.

c. An overview of the unresolved provisions in Topics 3 and 4.

d. A summary of relevant provisions in the overarching statutory planning framework.

e. An analysis of the provisions subject to appeals and recommendations on how they should be resolved.

f. Conclusion.

2. Executive summary

2.1 My planning evidence addresses Policies D.4.12, H.4.1, H.4.2, H.4.3 and Rules C.5.1.10, C.5.1.13 and C.5.14 in the Proposed Regional Plan for Northland (**PRP**) (Decisions Version).

2.2 The appeals on Rule C.5.1.8, Policy D.4.16, and Objective F.1.1 have been resolved by consent order. I understand that New Zealand Refining Company Limited (**Refining NZ**), the sole appellant on Policy D.4.15, has stated that it will withdraw its appeal. I also understand that all parties to appeals on Rule C.5.1.1 (the appellants, Northland Regional Council) and RMA s274 parties have agreed to an amended rule. Therefore, I do not address Rule C.5.1.1.

2.3 After considering the National Policy Statement for Freshwater Management (**NPS-FM**) and Regional Policy Statement for Northland (**RPS**), I conclude that:

a. Policy D.4.12(2) is inconsistent with the NPS-FM. The policy should be amended to recognise minimum flows and levels set in conditions of existing water permits that are less that the default minimum flow as interim environmental flows and levels. In short, Northland Regional Council is required to develop and include long-term visions in its RPS. Environmental outcomes and environmental flows and levels must achieve long-term visions. Therefore, the minimum flows and levels set in the plan will need to be reviewed and may be amended.

b. The guidance notes under Policies H.4.1 and H.4.3 should be amended to provide stronger direction on how the minimum flows and allocation limits are to be applied, including by removing the discretion provided to Northland Regional Council on how they are

to be applied. The amended notes should be included as clauses in the policies.

c. The minimum levels for shallow and deep lakes in Policy H.4.2 should not be amended. However, the policy should provide for the protection of lake levels in dune lakes with outstanding and high ecological values, as defined in the PRP, as per the minimum levels for natural wetlands.

d. Rule C.5.1.10 should not be deleted or amended. There is no legal impediment for providing for supplementary allocation (i.e., taking of water from a river when the flow exceeds the median flow) prior to setting take limits for supplementary flows.

e. Rules C.5.1.13 and C.5.1.14 should retain a non-complying status. That is because:

   i. The NPS-FM does not require prohibited activity rules; and

   ii. A non-complying activity status is appropriate, indeed necessary, because of the way that minimum flows/levels and allocation limits are expressed in the PRP.

3. Background

3.1 Northland Regional Council notified the PRP in September 2017 and then adopted the recommendations of the hearing panel in April 2019 to, in part, implement the freshwater *quantity* planning requirements of the NPS-FM 2014 and the RPS.

3.2 Northland Regional Council delegated its function of hearing submissions on the Notified Version of the PRP to independent commissioners (**the Independent Hearing Panel**). The Independent Hearing Panel made its recommendations to the Council in April 2019. At its meeting on 16 April 2019, the Council accepted and adopted its recommendations.

3.3 Several people appealed provisions in the Decision Version of the PRP about freshwater quantity management, including Rules C.5.1.1. C.5.1.8, C.5.1.10, C.5.1.13 and C.5.1.14 ('Topic 3'), and Policies D.4.12, D.4.15. D.4.16, H.4.1, H.4.2, H.4.3, and Objective F.1.1 ('Topic 4').

3.4 The appeals on Rule C.5.1.8, Policy D.4.16, and Objective F.1.1 have been resolved by consent order.

3.5 The PRP water quantity provisions include:

a. an objective, Objective F.1.1 Freshwater quantity;

b. allocation limits and minimum flow limits set in section H.4;

c. policies that guide decision making on resource consent applications to take or use water, being Policies D.4.10 to D.4.19; and

d. rules for the take and use of water, which cascade from permitted to non-complying activity status, being Rules C.5.1.1 to C.5.1.14.

3.6 In preparing this evidence, I have read:

a. The PRP (notification and decision versions).

b. The RMA section 32 report.

c. The RMA section 42A reports.

d. Staff reply reports.

e. Report and Recommendations of the Hearing Panel for the Proposed Regional Plan.

f. Appeals and RMA section 274 notices.

g. Evidence prepared for Northland Regional Council by Dr Singh, Dr Franklin and Ms Osbaldiston.

h. The NPS-FM 2014 (as amended 2017) and the NPS-FM 2020.

i. The RPS.

4. Unresolved provisions

4.1 The provisions under Topic 3 and Topic 4 that have not been resolved by consent order are:

a. Policy D.4.12 – Minimum flows and levels.

b. Policy D.4.15 – Reasonable and efficient use of water – other uses.

c. Policy H.4.1 – Minimum flows for rivers.

d. Policy H.4.2 – Minimum levels for lakes and natural wetlands.

e. Policy H.4.3 – Allocation limits for rivers.

f. Rule C.5.1.1 – Minor takes – permitted activity.

g. Rule C.5.1.10 – High flow allocation – restricted discretionary activity.

h. Rule C.5.1.13 – Water take below a minimum flow or water level – non-complying activity.

i. Rule C.5.1.14 – Water take that will exceed an allocation limit – non-complying activity.

4.2 This section provides a summary of the relevant appeals on each provision.

Policy D.4.12 – Minimum flows and levels

4.3 Policy D.4.12 directs decision-makers to apply the minimum flows and levels in Policies H.4.1 and H.4.2 when making decisions on applications for activities that require water permits. The policy also provides for alternative minimum flows for some uses for water.

4.4 Three appeals were lodged against Policy D.4.12. In summary:

a. The Royal Forest and Bird Protection Society of New Zealand (**Forest and Bird**) appealed the policy, seeking that clause 2 (relating to alternative minimum flows) be deleted.

b. Northland Fish and Game Council (**Fish and Game**) appealed against the policy also seeking that the provision for an alternative minimum flow be deleted. The rationale for Fish and Game's appeal is that providing for water to be taken below a minimum flow is inconsistent with the NPS-FM.

c. The Minister of Conservation also appealed against the rule seeking that the reference to "root stock survival water" from the alternative minimum flow regime, by deleting clause 2(b).

Policy D.4.15 – Reasonable and efficient use of water – other uses

4.5 Policy D.4.15 requires a person who applies for a water permit to authorise the taking and use of water to demonstrate that the sought volume(s) is reasonable, and that the use will be efficient.

4.6 The Refining NZ appealed against the policy, seeking that it be amended so that it does not apply to water takes for the management of passive discharges at its Marsden Point Refining site.

4.7 While not reflected in the Appeals Version (June 2020) of the PRP, I understand that Refining NZ stated that it will not pursue its appeal. For this reason, I do not address the appeal in this evidence.

Policy H.4.1 – Minimum flows for rivers

4.8 Policy H.4.1 sets minimum flows that apply to Northland's rivers (unless a lower minimum flow is provided for under Policy D.4.12).

4.9 Horticulture New Zealand (**Horticulture NZ**) appealed against Policy H.4.1, seeking that the notes under the policy are amended to provide greater certainty on how the methodology will be applied.

4.10 I understand the Council and relevant s274 parties have agreed that the notes should be included as clauses in the policy and that those amendments are justified. I also understand that these amendments will be recorded in consent documents to be filed with the Court.

Policy H.4.2 – Minimum levels for lakes and natural wetlands

4.11 Policy H.4.2 sets minimum levels that apply to Northland's lakes and natural wetlands (unless a lower level is provided for under Policy D.4.12).

4.12 The Minister of Conservation appealed against Policy H.4.2, seeking that the minimum lake levels (for deep and shallow lakes) be amended so that there is no allowance for any change to lake water levels.

4.13 I understand that the Council agrees with the sought minimum levels but only for lakes with high and outstanding ecological values. I address this issue in further detail below.

Policy H.4.3 – Allocation limits for rivers

4.14 Policy H.4.3 sets allocation limits for rivers. Horticulture NZ appealed against the policy, seeking that the notes under the policy are amended to provide greater certainty on how the methodology will be applied.

4.15 As for Policy H.4.1, I understand that these amendments are agreed and will be subject to consent documents to be filed with the Court.

Rule C.5.1.1 – Minor takes

4.16 Rule C.5.1.1 provides for the taking of small volumes of water as a permitted activity, subject to conditions.

4.17 Two appeals were lodged against Rule C.5.1.1. In summary:

a. Northland District Health Board appealed seeking that conditions 9 and 10 of the rule be amended to specify that all people taking the permitted volumes must provide Northland Regional Council, on an annual basis, with information about the location and nature of the takes, and volumes taken.

b. The Minister of Conservation appealed seeking the deletion of condition 2(b) of the rule (which provides a daily take limit for dairy shed washdown and milk cooling water), the inclusion of a new condition regarding outstanding freshwater bodies and significant freshwater habitats, the replacement of the 30% instantaneous flow limit in condition 3 with a 10% limit, and the inclusion of a new restricted discretionary or discretionary rule for dairy shed washdown and cooling water purposes.

4.18 The appellants, Northland Regional Council and RMA Section 274 persons attended several rounds of mediation. I understand that all parties agreed to an amended version of the rule. At the time of writing this evidence, a consent order had not been prepared, but I understand that consent documents will be prepared and filed with the Court in due course. Therefore, I do not comment on the rule and appeals in the remainder of my evidence.

Rule C.5.1.10 – High flow allocation

4.19 Rule C.5.1.10 provides for high flow takes as a restricted discretionary activity, i.e., the taking of water from a river when the flow in the river exceeds the median flow.

4.20 Two appeals were lodged against Rule C.5.1.10. In summary:

a. Forest and Bird appealed the rule, seeking that it be deleted.

b. Fish and Game also appealed the rule, seeking that it be deleted, or the notified conditions of the rule be reinstated.

4.21 The Council's position is that the decisions version of Rule C.5.1.10 is appropriate. I provide my analysis and opinion on this issue below.

Rule C.5.1.13 – Water take below a minimum flow or water level

4.22 Rule C.5.1.13 classifies the taking of fresh water from a river, lake or natural wetland when the flow is below a minimum flow or minimum level as a non-complying activity.

4.23 There were four appeals lodged against Rule C.5.1.13. In summary:

a. Fish and Game sought that the framework for taking and using water is revised to so that there is no provision for alternative minimum flows and levels.

b. The Minister of Conservation sought that it be classified as a prohibited activity.

c. Federated Farmers of New Zealand (**Federated Farmers**) sought that it only applies to measured minimum flows.

d. Northpower Limited (**Northpower**) sought that it be amended to make it clear that it does not apply to non-consumptive takes.

4.24 The appellants, Northland Regional Council and RMA section 274 persons attended several rounds of mediation. I understand that all parties agreed to amend the rule to clarify that it does not apply to non-consumptive takes. At the time of writing this evidence, a consent order had not been prepared to address this matter, but I understand consent documents will be prepared and filed with the Court in due course. Therefore, I do not comment on Northpower's appeal on the rule in the remainder of my evidence.

4.25 The Council's position is that the decisions version of Rule C.5.1.13 is appropriate. I provide my analysis and opinion on this issue below.

Rule C.5.1.14 – Water take that will exceed an allocation limit

4.26 Rule C.5.1.14 classifies the taking and use of fresh water that would cause an allocation limit set for a river or aquifer to be exceeded as a non-complying activity.

4.27 Three appeals were lodged against Rule C.5.1.14. In summary:

a. Fish and Game sought that the framework for taking and using water be revised to ensure compliance with allocation limits.

b. The Minister of Conservation sought that it be classified as a prohibited activity.

c. Northpower sought that it be amended to make it clear that it does not apply to non-consumptive takes. I understand that all parties agreed to amending the rule to clarify that it does not apply to non-consumptive takes. I understand that consent documents will be prepared and filed with the Court in due course. Therefore, I do not comment on Northpower's appeal on the rule in the remainder of my evidence

4.28 The Council maintains that the decisions version of Rule C.5.1.14 is appropriate. I provide my analysis and opinion on this issue below.

5. Relevant Planning Instruments

5.1 Section 67(3) of the RMA states:

> *A regional plan must give effect to—*
>
> *(a) any national policy statement; and*
> *(b) any New Zealand coastal policy statement; and*
> *(c) a national planning standard; and*
> *(d) any regional policy statement.*

5.2 I address relevant provisions of the NPS-FM and the RPS below.

National Policy Statement for Freshwater Management

5.3 The NPS-FM was first issued in 2011, replaced in 2014, and then amended in 2017 (approximately one month prior to the notification of the PRP). On 3 August 2020, a new NPS-FM was approved by the Governor-General under section 52(2) of the RMA and was published by the Minister for the Environment under section 54 of the Act. The new NPS-FM will replace the NPS-FM 2014 (as amended in 2017) on 3 September 2020.

5.4 This evidence was prepared prior to 3 September 2020 – the date on which the NPS-FM 2020 comes into force. Because the NPS-FM 2014

(as amended 2017) will no longer apply during the proceedings, I have focussed my planning evidence on the extent to which I consider that the provisions under appeal give effect to the NPS-FM 2020. For context, I do cover the extent to which the provisions subject to appeals give effect to the NPS-FM 2014 (as amended 2017).

National Policy Statement for Freshwater Management 2014 (as amended 2017)

5.5 Part B of the NPS-FM 2014 (as amended 2017) provides direction on freshwater quantity management. It contains five objectives and eight policies.

5.6 Policy B1 of the NPS-FM 2014 (as amended 2017) requires regional councils to establish freshwater objectives[1] in accordance with policies CA1-CA4 of the NPS and set environmental flows and/or levels[2] for all freshwater management units[3].

5.7 Northland Regional Council decided to define freshwater quantity management units for rivers, in accordance with policy CA1 of the NPS-FM 2014, largely based on the recommendations of Snelder (2015)[4] and the recommended refinements of Osbaldiston (2015)[5]. The FMUs for lakes are based on the recommendations of Snelder, et al. (2016).

5.8 Northland Regional Council established freshwater *quantity* objectives for rivers, lakes, wetlands and aquifers in accordance with Policy CA2 of the NPS-FM. Policies CA3 and CA4 do not apply to the establishment of

[1] An intended environmental outcome in a freshwater management unit.

[2] A type of limit which describes the amount of water in a freshwater management unit (except ponds and naturally ephemeral water bodies) which is required to meet freshwater objectives. Environmental flows for rivers and streams must include an allocation limit and a minimum flow (or other flow/s). Environmental levels for other freshwater management units must include an allocation limit and a minimum water level (or other level/s).

[3] The water body, multiple water bodies or any part of a water body determined by the regional council as the appropriate scale for setting freshwater objectives and limits and for freshwater quality accounting systems

[4] Ton Snelder. September 2015. Defining Freshwater Management Units for Northland: A Recommended Approach. LWP Client Report 2015-004.

[5] Osbaldiston S. Proposed amendments to freshwater management unit boundaries for small and coastal rivers. Northland Regional Council.

freshwater quantity objectives because the NPS-FM does not specify ‘attributes’ or ‘attribute states’ for freshwater quantity.

5.9 The freshwater objectives (i.e., environmental outcomes) relating to freshwater quantity are encapsulated in Objective F.1.1 of the PRP. The freshwater objective was previously cast as a policy (policy D.4.13 – Achieving freshwater quantity related outcomes) in the Notified Version of the PRP and was amended to form an objective through the Council hearing.

5.10 The objective, which is no longer under appeal, is:

> *Manage the taking, use, damming and division of fresh water so that:*
>
> *1) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water are safeguarded and the health of freshwater ecosystems is maintained, and*
> *2) the significant values, including hydrological variation in outstanding freshwater bodies and natural wetlands are protected, and*
> *3) the extent of littoral zones in lakes are maintained, and*
> *4) rivers have sufficient flows and flow variability to maintain habitat quality, including to flush rivers of deposited sediment and nuisance algae and macrophytes and support the natural movement of indigenous fish and valued introduced species such as trout, and*
> *5) flows and water levels support sustainable mahinga kai, recreational, amenity and other social and cultural values associated with freshwater bodies, and*
> *6) adverse effects associated with saline intrusion and land subsidence above are avoided (except where the taking, use, damming or diversion is for groundwater management at the Marsden Point refinery, in which case this clause does not apply), and*
> *7) it is a reliable resource for consumptive and non-consumptive uses.*

5.11 Northland Regional Council also set environmental flows and levels in Policies H.4.1 – H.4.4 of the PRP.

5.12 The minimum flows and allocation limits for rivers are to be applied at the point of take and/or a downstream flow recorder site, rather than at the terminal reach of the catchment.

5.13 Policy B5 is a key policy of the NPS-FM 2014 (as amended 2017):

> *By every regional council ensuring that **no decision** will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.* [My emphasis.]

5.14 Over-allocation is defined in the NPS-FM 2014 (as amended 2017) as:

> *…the situation where the resource:*
>
> *a) has been allocated to users beyond a limit; or*
> *b) is being used to a point where a freshwater objective is no longer being met.*
>
> *This applies to both water quantity and quality.*

5.15 Policy D.4.10 of the PRP reinforces Policy B5 of the NPS-FM 2014 (as amended 2017) and the direction in Policy 11 of the NPS-FM 2020. It was included in the PRP following the recommendations of the Independent Hearing Panel. The policy is:

> *For the purpose of assisting with the achievement of Objective F.1.1 of this Plan:*
>
> *1) apply the allocation limits set in H.4 Environmental flows and levels when considering and determining applications for resource consents to take, use, dam or divert fresh water, and*
> *2) ensure that no decision will likely result in over-allocation.*

5.16 The PRP contains rules that provide for the taking, using, damming and diverting of fresh water. Activities requiring water permits are subject to the policy direction on avoiding over-allocation.

National Policy Statement for Freshwater Management 2020

5.17 The NPS-FM 2020 is structurally and, in many respects, substantively different to the NPS-FM 2014 (as amended 2017). It contains one objective (at clause 2.1) and 15 policies (at clause 2.2).

5.18 The NPS-FM 2020 contains different direction on setting freshwater objectives, limits, environmental flows and levels and avoiding and phasing out over-allocation.

5.19 Clause 3.9 of the NPS-FM 2020 requires regional councils to identify the environmental outcome for every value that applies to an FMU and

include them as an objective or multiple objectives (i.e., freshwater objective or objectives in the parlance of the NPS-FM 2014 (as amended 2017)) in regional plans.

5.20 The environmental outcomes, expressed as an objective or objectives, must be set for the compulsory values listed in Appendix 1A of the NPS-FM 2020 and any other value (e.g., a value listed in Appendix 1B).

5.21 Clause 3.16(1) of the NPS-FM 2020 states that "[e]very regional must include rules in its regional plan(s) that set environmental flows and levels for each FMU, and may set different flows and levels for different parts of an FMU."

5.22 Notably, the NPS-FM 2020 does not contain a standalone definition for environmental flows and levels. It also does not classify them as a type of limit.[6] This is made extra clear when reading the definitions of a limit and over-allocation in the NPS-FM 2020. A limit is defined as "…either a limit on resource use or a take limit." Over-allocation is defined as:

> *…in relation to both quantity and quality of freshwater, is the situation where:*
>
> *(a) resource use exceeds a limit, or*
> *(b) **if limits have not been set**, an FMU or part of an FMU is degrading or degraded.* [my emphasis]

5.23 The term degrading does not apply to freshwater quantity, but the term degraded does:

> ***degraded**, in relation to an FMU of part of an FMU, means that as a result of something other than a naturally occurring process:*
> *…*
>
> *(b) the FMU or part of the FMU is not achieving or is not likely to achieve an environmental flow and level set for it;…*

5.24 Take limits have been set in the Decisions Version of the Proposed Plan and therefore it appears that the term "degraded" is not relevant.

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[6] The NPS-FM 2020 defines a limit a "…either a limit on resource use of a take limit." A take limit is defined in the NPS-FM as "…a limit on the amount of water than can be taken from an FMU or part of an FMU, as set in clause 3.17."

5.25 Clause 3.16(2) of the NPS-FM 2020 states:

> *Environmental flows and levels:*
>
> *(a) must be set at a level that achieves the environmental outcomes for the values relating to the FMU or relevant part of the FMU and all relevant long-term visions; but*
> *(b) may be set and adapted over time to take a phased approach to achieving those environmental outcomes and long-term visions.*

5.26 The requirement to set long-term visions was newly introduced in the NPS-FM 2020. Clause 3.3 requires that each regional council develop long-term visions for freshwater, which must be set as objectives in its regional policy statement. The NPS-FM 2020 details the process to achieve this, including through engagement with communities and tangata whenua.

5.27 I consider that the environmental flows and levels in Appendix H.4 of the Proposed Regional Plan have been set to achieve the environmental outcomes relating to freshwater quantity in Objective F.1.1 of the Proposed Plan, which applies to all FMUs. However, the Regional Policy Statement does not contain long-term visions. Therefore, I consider that the minimum flows and levels in the PRP (Appeals Version) do not fully give effect to clause 3.16(2) of the NPS-FM 2020. Whether they will in the future depends on nature of the yet to be developed long-term visions.

5.28 Sub-clause 3.16(3) of the NPS-FM 2020 specifies how environmental flows and levels must be set:

> *Environmental flows and levels must be expressed in terms of the water level and flow rate, and may include variability of flow (as appropriate to the water body) at which:*
>
> *(a) for flows and levels in rivers, any taking, damming, diversion, or discharge of water meets the environmental outcomes for the river, any connected water body, and receiving environments*
> *(b) for levels of lakes, any taking, damming, diversion or discharge of water meets the environmental outcomes for the lake, any connected water body, and receiving environments*
> *(c) for levels of groundwater, any taking, damming, or diversion of water meets the environmental outcomes for the groundwater, any connected water body, and receiving environments.*

5.29 I consider that the minimum flows and levels in Policies H.4.1 and H.4.2 are largely consistent with the direction of sub-clause 3.16(3)(a) and (b) because the flows for rivers are for the purposes of meeting environmental outcomes in Objective F.1.1. While minimum levels have not been set for rivers, minimum levels are a function of flows.

5.30 Policy H.4.4 specifies allocation limits (i.e., take limits) for aquifers. The take limits for the Aupouri Aquifer sub-units reflect minimum groundwater levels to prevent saline intrusion (refer Objective F.1.1(6)).

Regional Policy Statement

5.31 The RPS contains planning provisions that largely reinforce the direction of the NPS-FM 2014, are largely consistent with the direction in the NPS-FM 2020, and reflect the Council's, now superseded, programme for implementing the NPS-FM.[7]

5.32 Objective 3.3 ("Ecological flows and water levels") of the RPS is:

> *Maintain flows, flow variability and water levels necessary to safeguard the life-supporting capacity, ecosystem processes, indigenous species and the associated ecosystems of freshwater.*

5.33 The explanation to the objective states that "[t]he objective is to be given effect through the establishment and inclusion of region wide and catchment-specific water management objectives and environmental flow regimes in regional plans."

5.34 Policy 4.3.1 of the RPS is to:

> *Establish **interim region-wide** ecological flows and water levels for water bodies outside of priority catchments to give effect to Objective 3.3 of this Regional Policy Statement.*
>
> *[Emphasis added]*

5.35 The direction reflects Northland Regional Council's intention to develop and set specific (i.e., bespoke) freshwater quantity objectives and limits (or environmental outcomes, environmental flows and levels and take

[7] Northland Regional Council subsequently updated its progressive implementation programme in accordance with Policy E1 of the 2014 and 2017 versions of the NPS-FM.

limits, in the parlance of the NPS-FM 2020) for some catchments. I understand that the Council has started to prioritise catchments for which specific limits will be set but has yet to start the limit-setting process.

5.36 It is important to note that Northland's hydrology is complex. Ms Osbaldiston addresses this in her statement of evidence. Based on Ms Osbaldiston's evidence and my knowledge and experience, I consider that it is unrealistic to establish specific (i.e., bespoke)) environmental flows and levels for each of the approximately 1,700 source-to-sea catchments in Northland, 400 or so lakes (>1 ha), and various aquifers. Dr Franklin and Ms Osbaldiston make similar statements in their statements of evidence.

5.37 As highlighted in the Ministry for the Environment's Guide to the National Policy Statement for Freshwater Management 2014 (as amended 2017) "[s]etting environmental flows and/or levels in all FMUs in a region requires a significant amount of work." This is particularly true in the Northland context because of the region's complex geology, disparate communities, and the Council's limited resources.

5.38 Except for the allocation limits for the Aupouri aquifer sub-units, the environmental flows and levels set in Policies H.4.1 – H.4.4 of the Proposed Plan should be considered interim, default limits.

6. Analysis of provisions

Policy D.4.12

6.1 Policy D.4.12(1) of the Decisions Version of the Proposed Plan establishes the relationship between freshwater *quantity* Objective F.1.1 in the plan and the minimum flows and levels set in Policies H.4.1 and H.4.2.

6.2 Policy D.4.12(2) provides for alternative minimum flows and levels for the following activities where a higher level of reliability of water supply is needed:

- The health and domestic needs of people.
- The health needs of persons animals.
- Root stock survival purposes.

6.3 Policy D.4.12(2) also provides for alternative flows for non-consumptive takes[8].

6.4 Policy D.4.12 stems from Policy D.4.19(2) of the Notified Version of the Proposed Plan, which is as follows:

> *An application for a water permit that would allow water to be taken from a river, lake or natural wetland when flows or levels are below a minimum flow or minimum level will generally not be granted. A resource consent may be granted if:*
>
> *1) the water is to be taken for:*
> *a) the health of people as part of a registered drinking water supply; or*
> *b) the sole purpose of preventing the death of permanent viticulture or horticulture crops (excluding pasture species, animal fodder crops, and maize); or*
> *2) a different minimum flow or minimum level has been set for the water body in a resource consent.*

6.5 The second clause of Policy D.4.19 was not included in Policy D.4.12(2) of the Decisions Version of the Proposed Plan. It is not clear why the Report and Recommendations of the Hearing Commissioners does not address the matter. I understand that the Independent Hearing Panel largely adopted the Staff Reply Report Track Changes Version of the Proposed Plan, however the recommended amendments to Policy D.4.19 do not reflect the recommendations of the associated Staff Reply Report.

6.6 The second clause of Policy D.4.12 was included in the Decisions Version of the Proposed Regional Plan because:

a. It is not realistic to set bespoke environmental flows and/or levels for all of Northland's water bodies,[9] yet it is important to provide

[8] A take where: (a) water is used but not taken from a water body, or (2) water is taken from a water body and the same volume, minus any water lost by evaporation, is returned: (a) to the same water body in the same sub-catchment as near as practicable to the point of abstraction or upstream of the point where the take occurs, and (b) at the same time or within a timeframe as near as practicable to where the take is operating.

[9] Northland has a dense, short run river network of over 1,600 source-to-sea catchments (REC 1). Approximately 55% of the rivers in the network have estimated 7-day MALFs of less than 5 L/s and approximately 74% have estimated 7-day MALFs less

for some critical uses of water (e.g., the health needs of people and their animals) because there will naturally be times when flows and levels will be lower than minimum flows and obtaining water for certain activities is critical; and

b. Northland Regional Council has issued most water permits under the Regional Water and Soil Plan (**RWSP**), which contains different direction on minimum flows for rivers.

6.7 The minimum flows for rivers set in the PRP are different to minimum flows in the RWSP. The minimum flows in Policy H.4.1 in the PRP are expressed as a percentage of the 7-day Mean Annual Low Flow (7-day MALF). The 7-day MALF is the mean of minimum flow for each water year after having applied a running 7-day mean to the daily flows.[10]

6.8 The RWSP became operative on 28 August 2004. Chapter 9 of the plan contains objectives and policies for freshwater quantity management. Policy 9.5.5 specifies a minimum flow requirement for flow sensitive rivers of high ecological value, being "[u]nless provided for by other policies in this section, to ensure that as a result of the taking, use, damming or diverting of surface water, flows are not reduced below the Mean Annual Low Flow [**7-day MALF**] in rivers, or sections of rivers, which contain the characteristics described in policy 9.05.04 and which have a MALF of less than 300 l/s".

6.9 Policy 9.5.7 of the RWSP states that "[u]less provided for by other polices in this section, to ensure that as a result of the taking, damming and diversion of surface water in rivers or sections of rivers which do not fall within the scope of Policy 9.05.04, are not reduced below the 7 day, 1 in 5 year return period low flow."

6.10 Policy 9.5.8 of the RWSP provides for alternative lesser minimum flows for exceptional circumstances.

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than 10 L/s. The hydrology, soil, climate, and land use are highly variable across the region and within catchments.

[10] D.J. Booker. March 2015. Hydrological indices for national environmental reporting. Prepared for Ministry for the Environment. NIWA Client Report No: CHC2015-015.

6.11 In his statement of evidence, Dr Singh provides a detailed overview of how 7-day MALF is determined and provides a comparison between 7-day MALF and 7 day, 1 in 5 year return period low flow (Q_5).

6.12 Because the RWSP contains different direction on minimum flows, water permits have been granted with lesser minimum flows than the default minimum flows in the Decisions Version of the Proposed Plan.

6.13 According to Ms Osbaldiston's statement of evidence, there are approximately 220 locations where 193 existing resource consents set a lesser minimum flow that those specified in Policy H.4.1 of the PRP. The total number of resource consents to take water in Northland (including from groundwater, dams and other surface water bodies) is 566. I also understand that there are water permits with no minimum flows or level conditions.

6.14 Approximately 50% of the total volume authorised to be taken by the consents that provide for lesser minim flows is associated with drinking water supplies.

6.15 The Minister of Conservation, Fish and Game Council, and Forest and Bird have appealed the provision.

6.16 The Minister of Conservation stated that:[11]

> *… section 14(3)(b) of the Act provides for the taking of water for stock drinking and domestic takes. However, the taking of water below a minimum flow or minimum level for root survival water is not a matter provided for under section 14(3) of the Act. Policy D.4.12 would effectively enable the take of rootstock survival water below minimum flow. Allowing these takes below a minimum flow which has been identified in order to safeguard the life supporting capacity of ecosystems could have unacceptable adverse effects, including cumulative adverse effects.*
>
> *When a river is at or below minimum flow, aquatic ecosystems are likely to be under considerable stress. This will be a particular concern for smaller water bodies where aquatic life may already be under stress by virtue of poor water quality.*

[11] Notice of Appeal by the Minister of Conservation. 17 June 2019. Paragraphs 7.60 – 7.62.

> *The required allocation for rootstock survival water needs to be accounted for in pre-existing limits, to encourage rationing and storage before minimum flow levels are reached.*

6.17 The Minister is seeking that the reference to root stock survival water is deleted from clause (2)(b) of Policy D.4.12.

6.18 Fish and Game is seeking the deletion of the second clause of Policy D.4.12. It stated in its appeal that:[12]

> *Under the National Policy Statement Freshwater Management (NPSFM) a "limit" is the maximum amount of resource use available that allows a freshwater objective to be met. Freshwater objectives must provide for the compulsory value of ecosystem health.*
>
> *Providing for water to be taken below minimum flows is inconsistent with the NPSFM which requires avoidance of any further over-allocation of fresh water and phasing out existing over-allocation (Objective B1) and that no decision will likely result in future over-allocation (Policy B5).*

6.19 Forest and Bird also seeks the deletion of the second clause of Policy D.4.12. It considers that the policy "…undermines minimum flows and is contrary to the NPS-FM."[13]

6.20 I agree with Fish and Game and Forest and Bird that Policy D.4.12(2)(a) - (c) is inconsistent with the NPS-FM 2014 (as amended 2017) – at least from a literal interpretation perspective – because the policy provides for the setting of alternative minimum flows through the resource consent process.

6.21 The policy direction of the NPS-FM 2014 (as amended 2017) is clear: environmental flows and/or levels must be set in regional plans[14]. Its preamble, which assists the interpretation of the NPS-FM states:

> *Setting enforceable quality and quantity limits is a key purpose of this national policy statement. This is a fundamental step to achieving*

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[12] Notice of Appeal by Northland Fish and Game Council. June 2019. Page 5.

[13] Notice of Appeal by the Royal Forest and Bird Protection Society of New Zealand. 17 June 2019. Page 29

[14] Policy B1.

> *environmental outcomes and creating the necessary incentives to use fresh water efficiently, while providing certainty for investment.*
>
> *…*
>
> *Once limits are set, freshwater resources need to be allocated to users, while providing the ability to transfer entitlements between users so that we maximise the value we get from water. Where water resources are over-allocated (in terms of quality and quantity) to the point that national and local values are not met, over-allocation must be reduced over agreed timeframes.*

6.22 The NPS-FM 2020 does not contain a preamble and does not describe environmental flows and levels as a type of limit. It requires every regional council to "include rules in its regional plan(s) that set environmental flows and levels for each FMU…".

6.23 In my opinion, deleting Policy D.4.12(2)(a) – (c) would mean that water permits that currently provide for lower minimum flows than set in Policy H.4.1 will:

a. Need to be reviewed to comply with the minimum flows (seemingly the direction of clause 3.17(1)(c) of the NPS-FM 2020); or

b. Not be able to be replaced with conditions that provide for the existing lower minimum flows.

6.24 This could have major implications in terms of a reduction in reliability of water supplies for critical uses, although the benefits and costs of deleting Policy D.4.12(2) have not been assessed. I am also not aware of any evidence that the lesser minimum flows provided for by conditions of operative water permits do not meet Objective F.1.1 of the Decisions Version of the Proposed Plan.

6.25 It is important to note that clause 3.16(2)(b) of the NPS-FM 2020 states that "[e]nvironmental flows and levels…may be set and adapted over time to take a phased approach to achieving those environmental outcomes and long-term visions."

6.26 I consider that the Proposed Regional Plan should provide for existing authorised water takes with lesser minimum flow or level conditions than the default minimum flow and levels, and could be done by amending the policy as follows (underlined and struck through text):

D.4.12 Minimum flows and levels

1) For the purpose of assisting with the achievement of Objective F.1.1 of this Plan, ensure that the minimum flows and levels in H.4 Environmental flows and levels apply to activities that require water permits pursuant to rules in this Plan, and

2) Notwithstanding ~~this general requirement~~ clause 1, water permits granted prior to 4 May 2019 that set different minimum flows or levels to a minimum flow or level in Policy H.4.1 or Policy H.4.2 of this plan are recognised as interim environmental flows and levels. ~~an alternative minimum flow (comprising the minimum flow set in H.4 Environmental flows and levels less a specified rate of flow particular to an activity) may be applied where the water is to be taken, dammed or diverted for:~~

~~a) the health of people as part of a registered drinking water supply, or~~

~~b) root stock survival water, or~~

~~c) an individual's reasonable domestic needs or the reasonable domestic needs of a person's animals for drinking water that is, or is likely to be, having an adverse effect on the environment and is not permitted by a rule in this Plan, or~~

~~d) a non-consumptive take.~~

3) *The regional council may adapt the different minimum flows and levels set under clauses 1 and 2 in order to achieve environmental outcomes and all relevant long-term visions.*

6.27 The recommended changes are because Northland Regional Council will have to review and possibly revise the environmental outcomes in Objective F.1.1 and minimum flows and levels after it includes long-term visions for freshwater in the RPS.[15]

6.28 In the interim, an application for a 'replacement' water permit with lesser minimum flow or level condition will need to demonstrate how the proposed activity will meet the environment outcomes set in Objective

[15] Clause 3.9(5) states that "environmental outcomes must…when achieved, fulfil the relevant long-term visions developed under clause 3.3 and the objective of this National Policy Statement." Clause 3.16(2)(a) states that "[e]nvironmental flows and levels…must be set at a level that achieves the environmental outcomes for the values relating to the FMU or relevant part of the FMU and all relevant long-term visions".

F.1.1. I expect that if an applicant fails to demonstrate how the proposal will achieve Objective F.1.1 it will be declined.

6.29 Clause 3.17(1)(c) of the NPS-FM 2020 states "[i]n order to meet environmental flows and levels, every regional council…must state in its regional plan(s) whether (and if so, when and which) existing water permits will be reviewed to comply with environmental flows and levels". This should be done as a priority for existing water permits with no specified minimum flow or level conditions and for water permits with lesser minimum flow or level conditions.

Policy H.4.1 and Policy H.4.3

6.30 Policy H.4.1 sets the minimum flows that apply to Northland's rivers (unless a lower minimum flow is provided for under Policy D.4.12). The policy is reproduced as follows:

> *The minimum flows in Table 24: Minimum flows for rivers apply to Northland's rivers (excluding ephemeral rivers or streams) unless a lower minimum flow is provided for under Policy D.4.12 Minimum flows and levels.*
>
> *Table 24: Minimum flows for rivers*

River water quantity management unit	***Minimum flow (l/s)***
Outstanding rivers	*100 percent of the seven-day mean annual low flow*
Coastal rivers	*90 percent of the seven-day mean annual low flow*
Small rivers	*80 percent of the seven-day mean annual low flow*
Large rivers	*80 of the seven-day mean annual low flow*

> *Notes:*
>
> *1) The minimum flow will be applied at the point of take and any downstream flow recorder sites, as determined by the Regional Council.*
> *2) The seven-day mean annual low flow (MALF) at flow recorder sites will be determined using the lowest average river flow for any consecutive seven-day period for each year of record.*
> *3) The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with*

water level monitoring sites or flow recorded sites. The Regional Council will have discretion over the location and method for the gauging.

6.31 Policy H.4.3 sets allocation limits for rivers. The policy is reproduced as follows:

1) The quantity of fresh water that can be taken from a river at flows below the median flow must not exceed whichever is the greater of the following limits:

a) the relevant limit in Table 26: Allocation limits for rivers, or

b) the quantity authorised to be taken by:

i. resource consents existing at the date of public notification of this Plan less, with the exception of water permits for takes from rivers in the Mangere Catchment, any resource consents subsequently surrendered, lapsed, cancelled or not replaced, and

ii. takes that existed at the notification date of this Plan that are subsequently authorised by resource consents under: Rule C.5.1.8 Replacement water permits for registered drinking water supplies – controlled activity, Rule C.5.1.9 Takes existing at the notification date of the plan – controlled activity and Rule C.5.1.11 Takes existing at the notification date of this Plan – discretionary activity.

2) The allocation limits specified in Clause 1) include volumes allowed to be taken under section 14(3)(b) of the RMA and permitted to be taken by rules in this Plan, and the estimated or measured volumes associated with such takes should be considered when making decisions on applications water permits.

3) The allocation limits specified in Clause 1) apply to applications for water permits for the taking and use of fresh water from rivers, but do not apply to non-consumptive components of takes.

Table 26

River water quantity management unit	***Allocation limit (m^3/day)***
Outstanding rivers	*10 percent of the seven-day mean annual low flow*
Coastal rivers	*30 percent of the seven-day mean annual low flow*

Small rivers	*40 percent of the seven-day mean annual low flow*
Large rivers	*50 of the seven-day mean annual low flow*

Notes:

1) *The allocation limit will be applied at the point of take and any downstream flow recorder sites, as determined by the regional council.*
2) *The seven-day mean annual low flow (MALF) at flow recorder sites will be determined using the lowest average river flow for any 7-consecutive-day period for each year of record*
3) *The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The regional council will have discretion over the location and method for the gauging.*

6.32 Horticulture New Zealand appealed Policies H.4.1 and H.4.3 because:[16]

It is uncertain what status the notes have and HortNZ seeks that they are included in the policy rather than as notes so there [sic] status is certain.

HortNZ considers that there needs to be greater certainty as to how the methodology will be applied.

For instance:

Note 1: There could be numerous sites and it is uncertain if all or which would apply.

Note 2: The calculation of seven –day mean annual flow - the number of years needs to be defined to avoid consequential interference by climate variation.

Note 3: The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The Regional Council will have discretion over the location and method for the gauging. This is a significant issue for consent applicants - there is likely to be a high level of bias in the monitoring data which is from 'spot' gauging to inform consent decisions. The outcome will be uncertainty

[16] Notice of Appeal on Proposed Regional Plan for Northland. Pages 7 and 8.

for all parties. This is best resolved by requiring numerical flow modelling which can predict long term trends for river levels based on soils, climate and existing use.

6.33 Horticulture NZ seeks that the notes under Policy H.4.1 and incorporated into the body of the policies:[17] [18]

1) *The minimum flow will be applied ~~at the point of take and any downstream flow recorder sites, as determined by the Regional Council~~ <u>based on the nearest downstream monitoring site</u> .*
2) *The seven-day mean annual low flow (MALF) at the relevant flow recorder sites will be determined using the lowest average river flow for any consecutive seven-day period for each year of record <u>based on the minimum of ten years of measured of simulated flow data</u>.*
3) *<u>If there is no minimum flow information available numerical modelling will be undertaken to determine long term trends for river levels from which MALF could be calculated</u> ~~The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The Regional Council will have discretion over the location and method for the gauging~~.* [Changes added]

6.34 Similarly, Horticulture NZ seeks the following changes to Policy H.4.3:

1) *The allocation limit will be applied ~~at the point of take and any downstream flow recorder sites, as determined by the Regional Council~~ <u>based on the nearest downstream monitoring site</u> .*
2) *The seven-day mean annual low flow (MALF) at the relevant flow recorder sites will be determined using the lowest average river flow for any consecutive seven-day period for each year of record <u>based on the minimum of ten years of measured of simulated flow data</u>.*
3) *<u>If there is no minimum flow information available numerical modelling will be undertaken to determine long term trends for river levels from which MALF could be calculated</u> ~~The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The Regional Council will have~~*

[17] Ibid

[18] I have shown track-changes that are not in Horticulture NZ's appeal.

~~discretion over the location and method for the gauging~~. [Changes added]

6.35 Dr Singh provides an overview of how 7-day MALF can be calculated and highlights the statistical uncertainties associated with doing so. Dr Singh states that about ten years of flow records are needed to get a satisfactory estimate of the long-term value of flow statistics such as 7-day MALF.

6.36 I agree with Horticulture NZ that the notes should be included as clauses to the policies in the interests of certainty about how they will be applied in practice. I also agree that Northland Regional Council should not have discretion over what recorder sites can be used and the location and method for gauging. The merits of a particular approach and resulting data should be able to be considered as part of the resource consent application process.

6.37 Based on Dr Singh's evidence, I consider that the notes to Policy H.4.1 should be amended and inserted as clauses in the policy as follows. In my opinion it is not appropriate for Northland Regional Council to hold discretion over how minimum flows and allocation limits are to be determined.

> *1) The minimum flows in Table 24: Minimum flows for rivers apply to Northland's rivers (excluding ephemeral rivers or streams) unless a lower minimum flow is provided for under Policy D.4.12 Minimum flows and levels.*
>
> *…*
>
> *2) The minimum flow will be applied at a gauging station(s) that is representative of the hydrological conditions of the proposed site ~~the point of take and any downstream flow recorder sites, as determined by the Regional Council~~.*
>
> *3) The seven-day mean annual low flow (MALF) at flow ~~recorder~~ gauging site(s) will be determined using the lowest average river flow for any consecutive seven-day period for each year of record based on a minimum of ten years of measured and/or simulated flow.*
>
> *4) If there is no minimum flow information available numerical modelling will be undertaken to determine long term trends for river levels from which MALF could be calculated ~~The MALF for other~~*

~~sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The Regional Council will have discretion over the location and method for the gauging.~~

6.38 Similarly, I consider that the notes to Policy H.4.2.3 should also be amended and inserted at clauses in the policy as follows:

> *…*
>
> *5) The allocated limit will be applied at a gauging station(s) that is representative of the hydrological conditions of the proposed site ~~the point of take and any downstream flow recorder sites, as determined by the Regional Council~~.*
>
> *3) The seven-day mean annual low flow (MALF) at flow ~~recorder~~ gauging site(s) will be determined using the lowest average river flow for any consecutive seven-day period for each year of record based on a minimum of ten years of measured and/or simulated flow.*
>
> *4) If there is no minimum flow information available numerical modelling will be undertaken to determine long term trends for river levels from which MALF could be calculated ~~The MALF for other sites, for which no measured flow data exists, will be determined through gauging of river flows correlated with water level monitoring sites or flow recorded sites. The Regional Council will have discretion over the location and method for the gauging~~*

Policy H.4.2

6.39 Policy H.4.2 sets the minimum levels that apply to Northland's lakes and natural wetlands (unless a lower level is provided for under Policy D.4.12). The policy is reproduced as follows:

> *The minimum levels in Table 25: Minimum levels for lakes and natural wetlands apply to Northland's lakes (excluding artificially constructed water storage reservoirs) and natural wetlands unless a lower level is provided for under Policy D.4.12 Minimum flows and levels.*
>
> *Table 25: Minimum levels for lakes and natural wetlands*

Management unit	***Minimum level***
Deep lakes (> 10 metres in depth)	*Median lake levels are not changed by more than 0.5 metres, and there is less than a 10 percent*

	change in mean annual lake level fluctuation and patterns of lake level seasonality (relative summer versus winter levels) remain unchanged from the natural state.
Shallow lakes (≤ 10 metres in depth)	*Median lake levels are not changed by more than 10 percent, and there is less than a 10 percent change in mean annual lake level fluctuation and patterns of lake level seasonality (relative summer versus winter) remain unchanged from the natural state.*
Natural wetlands	*There is no change in their seasonal or annual range in water levels.*

6.40 The minimum levels for shallow and deep lakes are based on Table 3.3 in Ministry for the Environment's Draft Guidelines for the Selection of Methods to Determine Ecological Flows and Water Levels.[19] They provide for a low level of deleterious risks to ecological values under a potential change to hydrological change. That is, the minimum levels are inherently protective.

6.41 The minimum levels for natural wetlands are based on the minimum levels set out in Ministry for the Environment's Discussion Document on a Proposed National Environmental Standard. The Discussion Document states that the minimum levels are very conservative because wetlands are highly important ecosystems, which have been significantly reduced in extent and quality.[20]

6.42 The Minister of Conservation appealed Policy H.4.2 and is seeking that the minimum levels for lakes (deep and shallow) are amended to no change to lake level. The Minister of Conservation stated that:[21]

[19] Beca. 2008. Draft Guidelines for the Section of Methods to Determine Ecological Flows and Water Levels. Report prepared by Beca Infrastructure Ltd for MfE. Wellington: Ministry for the Environment.

[20] Ministry for the Environment. March 2008. Proposed National Environmental Standard on Ecological Flows and Water Levels – Discussion Document. Ministry for the Environment: Wellington. Page 26.

[21] Notice of Appeal by the Minister of Conservation. 17 June 2019. Page 22.

> *Northland's lake ecosystems have high conservation values and are likely sensitive to hydrological alteration. As a matter of precaution, it is appropriate to amend the minimum lake levels to protect their high conservation values until a specific assessment has been carried out to show that changes to the water levels will not have unforeseen ecological impacts.*

6.43 I agree with the Minister to a certain extent. Northland contains many highly valued lakes, which is highlighted in the Northland Lakes Strategy:[22]

> *Northland lakes are of national and international significance, with dune lakes the predominant lake type. Northland has the greatest number of dune lakes nationally, and most probably internationally, and represents a large proportion of warm, lowland New Zealand lakes still with relatively good water quality. These lakes and their surrounding wetland margins support a range of endemic endangered species providing the only known habitat, or the national strongholds for a range of biota. Perhaps the most outstanding character of these lakes is the currently limited impact of invasive species on their biota, which is unparalleled in any other region of mainland New Zealand.*

6.44 In 2012, NIWA ranked 76 of Northland's lakes (>1 hectare) based on their ecological values. NIWA ranked the following lakes (all dune lakes) as having outstanding or high ecological values:[23]

a. Outstanding value lakes: Lakes Taharoa, Humuhumu, Waikere, Rotokawau (Pouto), Mokeno, Kai-Iwi, Ngatu, Wahakari, Kanono, Waiporohita, Waihopo and Morehurehu.

b. High value lakes: Lakes Kahuparere, Te Kahika, Te Werahi Lagoon, Karaka, Ngakapua, Te Paki Dune, Waiparera and Rotoroa.

6.45 I consider that given their importance, the minimum level for the outstanding and high ecological value lakes should be no change in their seasonal or annual range in water levels. However, I consider that there needs to be some allowance for water takes from other lakes and that the

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[22] Paul Champion and Mary de Winton. June 2012. Northland Lakes Strategy. Prepared for Northland Regional Council. NIWA Client Report No: HAM2012-121. Page 5.

[23] Ibid

proposed minimum levels are sufficiently conservative to allow that to happen.

6.46 I recommend that Policy H.4.2 should be amended as follows (underlined text):

> *The minimum levels in Table 25: Minimum levels for lakes and natural wetlands apply to Northland's lakes (excluding artificially constructed water storage reservoirs) and natural wetlands unless a lower level is provided for under Policy D.4.12 Minimum flows and levels.*
>
> *Table 25: Minimum levels for lakes and natural wetlands*

Management unit	***Minimum level***
Deep lakes (> 10 metres in depth)	*Median lake levels are not changed by more than 0.5 metres, and there is less than a 10 percent change in mean annual lake level fluctuation and patterns of lake level seasonality (relative summer versus winter levels) remain unchanged from the natural state.*
Shallow lakes (≤ 10 metres in depth)	*Median lake levels are not changed by more than 10 percent, and there is less than a 10 percent change in mean annual lake level fluctuation and patterns of lake level seasonality (relative summer versus winter) remain unchanged from the natural state.*
Dune lakes with outstanding or high ecological values	*There is no change in their seasonal or annual range in water levels*
Natural wetlands	*There is no change in their seasonal or annual range in water levels.*

Rule C.5.1.10

6.47 Rule C.5.1.10 provides:

> ***C.5.1.10 High flow allocation – restricted discretionary activity***
>
> *The taking and use of water from a river when the flow in the river is above the median flow that is not a permitted or controlled activity under C.5.1 of this Plan is a restricted discretionary activity.*
>
> ***Matters of discretion:***

1) *The timing, rate and volume of the take to avoid or mitigate effects on existing authorised takes and aquatic ecosystem health.*
2) *Measures to ensure the reasonable and efficient use of water*
3) *The positive effects of the activity.*

6.48 Fish and Game and Forest and Bird appealed the rule. Fish and Game is seeking that the rule be deleted or the conditions of the notified version of the rule be reinstated on the grounds that:[24]

> *The deletion of the standards in the notified version of the Rule ignores the importance of flushing flows and a fluctuating flow regime to aquatic life. It is inappropriate for an activity of flow harvesting that has potentially significant adverse effects due to the absence of standards, to be considered on a restricted discretionary basis.*
>
> *The rule is not the most appropriate means to achieve Objective F.1.1(3).*

6.49 Forest and Bird is seeking the deletion of the rule because it considers that "[i]t is inappropriate to provide for allocation of supplementary flows until council has set up an allocation regime which avoided over allocation."[25]

6.50 I consider that it is not necessary or appropriate to delete the rule or amend it as per the relief sought by Fish and Game.

6.51 I understand that neither the NPS-FM 2014 (as amended 2017) nor the NPS-FM 2020 prevents Northland Regional Council from providing for supplementary takes prior to setting any supplementary take limits in its regional plan. Section 80A(4) requires all regional councils to publicly notify any plan changes to their regional policy statements and regional plans that are necessary to give effect to the NPS-FM 2020 by 31 December 2024.

6.52 In the interim Objective F.1.1 is a key consideration for decision-makers regarding applications for water permits for 'high-flow' takes under Rule C.5.1.10. It identifies the following environment outcome in clause 4 of the objective: "…rivers have sufficient flows and flow variability to maintain

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[24] Northland Fish and Game Council. June 2019. Notice of Appeal. Page 5.

[25] Royal Forest and Bird Protection Society of New Zealand Incorporated. 17 June 2019. Notice of Appeal. Page 24.

habitat quality, including to flush rivers of deposited sediment and nuisance algae and macrophytes and support the natural movement of indigenous fish and valued introduced species such as trout,…". I consider that this direction, in combination with the matters of discretion in Rule C.5.1.10 will ensure that the potential adverse effects of high flow allocation will be appropriately managed when resource consent is sought.

6.53 I understand that Northland Regional Council is not currently able to derive supplementary allocation limits (i.e., supplementary allocation blocks) for rivers. It will take time to develop and apply catchment-specific assessment methods to assess the potential effects of supplementary allocation in a given river.[26] In accordance with the NPS-FM 2020, this should be done after engagement with the community and stakeholders.[27] In the interim, I consider that any applications for water permits for supplementary takes are best considered on a case-by-case basis, which Rule C.5.1.10 provides. It is important to note that such takes are relatively rare in Northland because most of the region's rivers are short and have flashy (i.e. highly variable) flows.

Rules C.5.1.13 and C.5.1.14

6.54 Rules C.5.1.13 and C.5.1.14 provide:

> *Rule C.5.1.13*
>
> *The taking of fresh water from a river, lake or natural wetland when the flow in the river or water level in the natural wetland or lake is below a minimum flow or minimum level set in H.4 Environmental flows and levels, and that is not permitted by a rule in this Plan, is a non-complying activity.*
>
> *C.5.1.14*
>
> *The taking and use of fresh water that would cause an allocation limit set in H.4 Environmental flows and levels for a river or aquifer to be exceeded, and that is not permitted by a rule in this Plan, is a non-complying activity.*

[26] Susie Osbaldiston, pers. comm. 13 November 2019.

[27] Justin Murfitt., pers. comm. 13 November 2019.

6.55 The Minister of Conservation, Fish and Game, and Northpower appealed both rules. Federated Farmers appealed Rule C.5.1.13. As pointed out earlier in my evidence, I understand that all parties have agreed to Northpower's relief.

6.56 Federated Farmers want the rule to be amended by specifying that it applies to measured minimum flows and measured minimum levels. They stated in their appeal that:[28]

> *Federated Farmers support a high consent threshold for taking of water below a minimum flow or water level, provided that the low flow is measured (rather than an estimated) flow.*
>
> *Federated Farmers doubt about the efficacy of taking a strict approach to allocation, if strict measures are not really shown to be necessary. Without confidence about the amount of low flow, farmers could incur a lot of expenditure and delay in seeking resource consent for a non-complying activity for what may amount to little or no environmental benefit.*

6.57 The Minister of Conservation is seeking a prohibited activity status for Rules C.5.1.13 and C.5.1.14. Regarding Rule C.5.1.13, the Minister gave the following reason:[29]

> *It is inappropriate to assign non-complying activity status to water takes below a minimum flow or water level. Non-complying activity status is particularly problematic in light of Policy D.4.12 (previously D.4.19), which makes provision for water to be abstracted below minimum flow for takes that are not captured by section 14(3)(b) of the Act. There is the potential for cumulative effects from multiple takes to cause effects that may not be easily detected through individual applications.*

6.58 Regarding Rule C.5.1.14, the Minister stated that:

> *It is inappropriate to assign non-complying activity status to water takes that will exceed an allocation limit. Non-complying activity status provides less assurance that adverse effects, including cumulative*

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[28] Federated Farmers of New Zealand. 14 June 2019. Form 7 Notice of Appeal to Environment Court Against Decisions on the Proposed Regional Plan for Northland. Page 15.

[29] Minister of Conservation. 17 June 2019. Notice of Appeal to Environment Court against decision on proposed Regional Plan for Northland. Page 12.

effects, arising from takes greater than the allocation limit will be avoided.

6.59 Fish and Game appealed Rules C.5.1.13 and C.5.1.14 but was not specific about the relief it is seeking. It stated in its notice of appeal that "the framework for taking and using water [should be revised] so that it ensures compliance with minimum flow and allocation limits".[30]

6.60 I consider that there are two main reasons why the activity classification of Rules C.5.1.13 and C.5.1.14 should not be changed to prohibited:

a. The NPS-FM 2014 (as amended 2020) and the NPS-FM 2020 do not require prohibited activity rules; and

b. A non-complying activity is appropriate, indeed necessary, because of the way that the minimum flows/levels and allocation limits are expressed. That it, it is inappropriate to assign a prohibited activity classification to an activity that is in many cases uncertain (i.e., may or may not occur).

The NPS-FM 2014 (as amended 2017) and the NPS-FM 2020

6.61 For context, it is important to note that Parts A (Water quality) and B (Water quantity) of the NPS-FM 2014 (as amended 2017) contain different direction regarding avoiding over-allocation.

6.62 Policy A1 states:

By every regional council making or changing regional plans to the extent needed to ensure the plans:

a) establish freshwater objectives in accordance with Policies CA1-CA4 and set freshwater quality limits for all freshwater management units in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:

i. the reasonably foreseeable impacts of climate change;
ii. the connection between water bodies; and
iii. the connection between freshwater bodies and coastal water; and

[30] Northland Fish and Game Council. June 2019. Notice of Appeal to Environment Court Against Decision on Proposed Regional Plan for Northland. Page 8.

*b) establish methods (**including rules**) to avoid over-allocation.* [emphasis added]

6.63 Policy B1 states:

> *By every regional council making or changing regional plans to the extent needed to ensure the plans establish freshwater objectives in accordance with Policies CA1-CA4 and set environmental flows and/or levels for all freshwater management units in its region (except ponds and naturally ephemeral water bodies) to give effect to the objectives in this national policy statement, having regard to at least the following:*
>
> *a) the reasonably foreseeable impacts of climate change;*
> *b) the connection between water bodies; and*
> *c) the connection between freshwater bodies and coastal water.*

6.64 Part B of the NPS-FM 2014 (as amended 2017) does not mention the inclusion of **prohibited activity** rules within regional plans to avoid over-allocation. Policy B5 states, however:

> *By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.*

6.65 In my opinion, Policy B5 does not require regional councils to classify an activity that will or is likely to cause over-allocation as a prohibited activity. The direction to ensure that no decision will likely result in over-allocation can be achieved, for example, by non-complying activity status and strong policy direction.

6.66 The NPS-FM 2020 also does not explicitly require a prohibited activity classification for a take that may exceed an allocation limit or breach a minimum flow.

6.67 Northland Regional Council decided to include non-complying activity rules (C.5.1.13 and C.5.1.14) in the PRP (Decisions Version) along with strong policy direction on avoiding over-allocation (D.4.10) for the key reason there are uncertainties associated with calculating minimum flows, minimum levels, and allocation limits (including for aquifers using a proportion of the annual average recharge). Dr Singh provides a detailed summary of the uncertainties associated with calculating MALF.

6.68 As highlighted earlier in my evidence, the minimum flows and allocation limits for rivers set in Policies H.4.1 and H.4.2 are expressed as a proportion of the 7-day MALF, rather than in the corresponding absolute units of flow. This was done because most of Northland's rivers do not have flow gauging sites. What is more, the hydrometric stations installed by NRC and others were not designed for the purposes of setting or enforcing environmental flows and levels.

6.69 Similarly, Northland Regional Council has limited data on lake levels for a small fraction of Northland's lakes. I understand it also has limited data on wetland water levels.

6.70 There are also challenges associated with determining water availability as a percentage of 7-day MALF (or other hydrological indices). That is, understanding the level of allocation in any given catchment. Reasons include:

a. A lack of consistency in the way that water permits have been issued – for example, I recently discovered that a water permit[31] issued by Northland Regional Council had provided for an individual take twice (i.e., double counted the authorised take), which meant the there was more water available for allocation in the catchment than Northland Regional Council considered to be available.

b. Understanding permitted take volumes – It can be difficult to account for water takes that are undertaken in accordance with section 14(3)(b) of the RMA as permitted activities.

c. Understanding stream flow depletion from groundwater takes – It can be difficult to account for the effects of existing groundwater takes on stream and river flows in unmonitored catchments. This could pose challenges to people wanting to understand the level of available surface water allocation.

6.71 Northland Regional Council acknowledges that there are uncertainties associated with Northland river flow data (measured and modelled) and allocation levels. It has placed disclaimers on its online water allocation

[31] AUT.038620

maps that the displayed allocations are indicative only. Ms Osbaldiston covers the uncertainties associated with the estimated allocation statuses of Northland's water bodies.

6.72 For these reasons, I consider that it is inappropriate to assign a prohibited classification status to Rules C.5.1.13 and C.5.1.14. Such an activity status would prevent any person from making an application and having the allocation status of a water body tested through the resource consenting process. I consider that would be inappropriate, given the uncertainties associated with calculating the absolute units of flow corresponding to the minimum flows and allocation limits specified in Policies H.4.1, H.4.3, and H.4.4, and the minimum levels in Policy H.4.2.

6.73 A non-complying activity classification provides for a person to undertake the necessary research to determine the corresponding unit of flow (with respect to the proportion of the 7-day MALF minimum flows and allocation limits) and, if they consider that water is available to be allocated, apply for a water permit to have that tested through the hearing process.

6.74 Accordingly, in my opinion the activities described in Rules C.5.1.13 and C.5.1.14 as non-complying.

7. Conclusion

7.1 This evidence addressed Policies D.4.12, H.4.1, H.4.2, H.4.3 and Rules C.5.1.10, C.5.1.13 and C.5.14 in the PRP. Having considered the overarching direction in the NPS-FM 2020 and RPS I conclude that Policies D.4.12, H.4.1, H.4.3 and H.4.3 should be amended as stated above. I also conclude that Rules C.5.1.10, C.5.1.13 and C.5.1.14 should not be amended.

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Ben Tait

28 August 2020