

**IN THE ENVIRONMENT COURT
WELLINGTON REGISTRY**

**I TE KŌTI TAIAO O AOTEAROA
TE WHANGANUI-A-TARA ROHE**

UNDER	the Resource Management Act 1991
IN THE MATTER	of appeals under sch 1, cl 14(1) against the decision of Manawatū-Whanganui Regional Council on Plan Change 2 to the One Plan
BETWEEN	TE RUNANGA O RAUKAWA ENV-2021-WLG-20 NGĀTI TURANGA ENV-2021-WLG-21 ANDREW DAY ENV-2021-WLG-22 WELLINGTON FISH AND GAME COUNCIL ENV-2021-WLG-23 Appellants
AND	MANAWATŪ-WHANGANUI REGIONAL COUNCIL Respondent

**STATEMENT OF REPLY EVIDENCE OF CHRISTINE FOSTER ON BEHALF OF
MANAWATŪ-WHANGANUI REGIONAL COUNCIL**

PLANNING

Dated: 13 November 2023



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REPLY EVIDENCE OF CHRISTINE ANNE FOSTER**A. INTRODUCTION**

- [1] My full name is Christine Anne Foster. I prepared a statement of evidence dated 7 October 2023 (**Evidence**) addressing planning matters on behalf of the Manawatū-Whanganui Regional Council (**Horizons or Council**) for Plan Change 2 to the One Plan (**PC2**).
- [2] My experience and qualifications are set out in my Evidence.
- [3] In this reply evidence I use the same defined terms as in my Evidence. For the avoidance of doubt, when I refer to the proposed provisions, I am referring to proposed amended decisions version of PC2 as filed with the Court on 22 September 2023 (**amended DV-PC2**), as the Council's preferred provisions.
- [4] I repeat the confirmation given in my Evidence that I have read and will comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023, and that my evidence has been prepared in compliance with that Code.

B. SCOPE

- [5] My reply evidence responds to points made in evidence by:
- (a) Greg Carlyon and Hayden Turoa on behalf of Ngāti Turanga and Wellington Fish and Game Council;
 - (b) Michael Scott on behalf of Andrew Day;
 - (c) Michelle Sands, Dr Charlotte Drury and Andrew Barber on behalf of Horticulture NZ; and
 - (d) Elizabeth Parlato on behalf of Ngāti Turanga and Wellington Fish and Game Council.

C. INFORMATION RELIED ON

- [6] I omitted to include in my Evidence a summary of the information I had relied on in preparing my Evidence. I include in **Attachment A** to this reply statement a list of the information relied on in preparing my Evidence and in preparing this reply statement.

D. THE CURRENT WIDER POLICY CONTEXT

- [7] Given the opposition of the witnesses for the appellants (in particular the evidence of Andrew Day, Hayden Turoa, Michael Scott and Greg Carlyon) I thought it would be useful to explain why it is that Horizons is proposing the alternative risk assessment pathway amendments to DV-PC2.
- [8] Since release of the DV-PC2, there has been uncertainty about Horizons ability to rely on Overseer. That is relevant and important because Overseer is the tool relied on in setting the Table 14.2 CNLMs and in estimating nitrogen leaching loss under all proposed consent pathways proposed by DV-PC2. The position has been constantly shifting.
- [9] Further work has been done to address identified shortcomings in Overseer by MPI and Overseer. Work has also been advanced by MfE on a 'risk index tool'. More work is underway. Throughout, MfE's advice has been and still is (at the time of writing) that Overseer should not be used to set absolute nitrogen leaching loss limits at farm scale.
- [10] Horizons could have waited and hoped that a suitable 'fix' would be provided by others. Instead, Horizons chose to act. In good faith and in collaboration with appellants, Horizons started work in 2021 on potential alternatives that could be used instead of Overseer. That was so that the momentum of PC2 could continue and ensure the regulation of the remaining unconsented existing IFLU as soon as practicable. In my opinion, that was the responsible thing to do in the circumstances of this plan change.
- [11] The collaborative expert conferencing sessions and work of the farm systems experts was disciplined and methodical. The JWSs from that work record the development of the separate but similar pastoral and CVG risk assessment

tools, and the specification of the risk limits for the rule framework. The experts agreed early in the process the criteria any such alternative tool must meet, which were that the tool had to be:¹

- (a) Certain (unambiguous);
- (b) Consistently applied (with limited discretion);
- (c) Verifiable and able to be interrogated (transparent);
- (d) Measurable;
- (e) Able to show change in relation to a baseline;
- (f) Evidence based (using best available information); and
- (g) Accessible.

[12] The JWSs record that the farm system experts involved from the outset are satisfied that the risk assessment tools proposed meet those requirements.

[13] Horizons has invested considerable resources in the expert process. As a result of the work, Horizons is in a better position in now having options to allow it to continue to implement the One Plan.

[14] I have read the August 2023 'Overseer Redevelopment Programme Report',² and have discussed the report's findings with Professor Horne and Dr Jolly. I am aware there are views that the acknowledged Overseer shortcomings have been 'fixed'. The experts accept that some improvements have been made. However, currently MfE's advice, even acknowledging the increased confidence of the Overseer Technical Advisory Group in OverseerFM, remains unchanged and is that;³

¹ Joint Witness Statement of farm system and planning experts (28 June 2022) at pages 7 and 8.

² Ministry for Primary Industries *Overseer Redevelopment Programme Report* (Technical Paper 2023/12, August 2023).

³ Ministry for the Environment *Responding to the Overseer model redevelopment review – a guide for Councils* (Publication number ME 1732 July 2023) post-validation work advice, guidance report 2023 at page 6.

- (a) regulators should continue to use a range of tools when assessing farms and catchments when managing nutrients in a regulatory context; and
 - (b) OverseerFM output numbers should not be used as absolute numbers.
- [15] This advice is acknowledged by Dr Dewes who considers use of absolute numbers in implementation methods has now been recognised as unsuitable.⁴
- [16] Professor Horne agrees that Overseer is appropriate for modelling nitrogen leaching from pastoral farming systems but notes the MfE advice that Overseer outputs should not be used as absolute values for regulatory purposes⁵. Dr Jolly agrees with Dr Dewes that Overseer is not ideal for modelling nitrogen leaching from CVG but that it can model CVG. Dr Jolly's view is that, in spite of the Overseer redevelopment work, most of the issues for Overseer modelling of vegetable systems are still present⁶ (e.g. the limited number of vegetable crop types modelled) and workarounds are still required to accommodate CVG
- [17] The present conundrum for PC2 is that:
 - (a) Recent work on OverseerFM may mean there is greater confidence in its outputs (except perhaps for modelling CVG, for the reasons Dr Jolly explains in her evidence), but MfE advice is that OverseerFM outputs should not be used as absolute numbers in regulation (as proposed by One Plan and DV-PC2). There is no certainty about whether or when that position might change. Persisting with reliance on OverseerFM without other alternatives available for use, creates risk for the implementation of the One Plan.
 - (b) MfE advice is that councils should adopt a best information approach and look for opportunities to support decisions made

⁴ Statement of Evidence of Alison Dewes (6 October 2023) at 11.5.

⁵ Statement of Reply Evidence of David Horne (13 November 2023) at [33].

⁶ Statement of Reply Evidence of Anne-Maree Jolly (13 November 2023) at [23].

using OverseerFM data with multiple lines of evidence.⁷ Horizons has explored other decision support tools and developed its own risk assessment tools. MfE has a 'risk index tool' under development but the timing of its availability and suitability of fit for PC2 are uncertain. Horizons' risk assessment tools are recent and have had some testing (although I note the CVG risk assessment tool has been trialled on 95% of the CVG enterprises in the Horowhenua targeted water management zone). The pastoral risk assessment tool is supported by Professor Horne, Dr le Miere and until recently also by Dr Parlato. I accept that the pastoral risk assessment tools are less nuanced than OverseerFM in that they consider a subset of the OverseerFM sub models and do not include the 'black box' modelling algorithms. What they do though, as I understand Professor Horne's and Dr Jolly's evidence, is target the key drivers of nitrogen leaching (soil conditions, represented by pore available water, and rainfall). They also account for the key farming and growing practices that drive nitrogen leaching loss (and, for pastoral farming, these match those in Overseer).

- (c) The CVG risk assessment tool is supported by Dr Jolly, Mr Barber and Mr Ford.
- (d) The experts' support is recorded in the JWSs emerging from their respective conferencing sessions and in separate email correspondence recommending the wording of the risk assessment tools for inclusion in PC2.
- (e) Professor Horne and Dr Jolly consider the PC2 risk assessment tools will require farmers and growers to make similar reductions in nitrogen leaching loss. Dr Snelder considers, based on Professor Horne's assessment that the risk assessment tool will achieve similar SIN reduction to the DV-PC2 controlled activity pathways. These SIN

⁷ Ministry for the Environment guidance report '*Responding to the Overseer model redevelopment review – a guide for Councils*' (Publication number ME 1732 July 2023) at page 7.

reductions are not materially different from the outcome that would have been achieved by strict adherence to the Table 14.2 limits.

- (f) All available tools appear to have positive attributes but also potential limitations. Pausing PC2 to await the emergence of the perfect tool will defer implementation of measures that could achieve water quality improvements. It would entrench current degradation even longer than has already prevailed. Pausing PC2 would also continue the uncertainties and social impacts Dr Collins describes in her evidence.⁸ My view is that these outcomes will not achieve the objective of PC2, the relevant One Plan objectives, or the purpose of the Act.

- [18] It is my view that the One Plan policy and rule framework for managing existing IFLU does not work as it was hoped it would. It needs to be changed. As I see it, there are two potential solutions: the DV-PC2 specified percentage reduction (or 75th percentile) pathways which rely on Overseer outputs or the amended DV-PC2 that inserts the risk assessment approach. Both alternatives achieve similar water quality outcomes (based on Dr Snelder's modelling and assessment), and both would achieve the purpose of PC2, the relevant One Plan objectives, and the purpose of the Act, while giving effect to the higher order planning instruments.

E. RESPONSE TO THE EVIDENCE OF GREG CARLYON AND MICHAEL SCOTT

There are some common themes in the statements of evidence of Greg Carlyon and Michael Scott, so I have grouped my responses to those together under the following headings:

The appropriateness of alternative controlled activity pathways

- [19] At paragraph 7.20 of his evidence, Mr Carlyon expresses the view that the approach taken by Horizons, through PC2 is inappropriate. Elsewhere in his evidence, Mr Carlyon opposes the proposed PC2 risk score card and DV-PC2 percentage reduction alternative controlled activity pathways.

⁸ Statement of Evidence of Heather Collins (6 October 2023) at section H.

[20] PC2 is an ‘amending proposal’ in that it proposes amendments to an operative RPS and regional plan that already exists.⁹ The objectives (the purpose) of PC2 are relevant and must be considered in the s 32AA evaluation: s 32(3) states that for an ‘amending proposal’, the examination under s 32(1)(b) of whether the proposal is the most appropriate way to achieve the objectives must relate to:

- (a) The provisions and objectives of the amending proposal (i.e. the objectives of PC2); and
- (b) The objectives of the existing One Plan to the extent that those objectives are relevant to the objectives of the amending proposal and would remain if the amending proposal were to take effect.

[21] Section 32(6) of the Act clarifies that, for this purpose, the objectives include any stated objectives of the proposal and, for all other proposals, the purpose of the proposal. PC2 does not propose or alter any One Plan objectives, therefore for s 32AA purposes the objective of PC2 is its stated purpose.

[22] The stated purpose of PC2 (from the s 32 report)¹⁰ is to address issues with the One Plan provisions for controlling existing IFLU¹¹ by improving:¹²

...the workability of the provisions for intensive farming land use provisions by updating the nitrogen leaching maximums and providing a viable consenting pathway for activities that do not comply with then, in order to enable a return to effective regulation of existing intensive farming land uses through the One Plan as soon as practicable.

[23] From my discussions with the Horizons staff who had authored the PC2 provisions at the time, I can say that they considered that they had created a workable consenting pathway for those existing IFLU that could not

⁹ As described in s 32(3) of the Act.

¹⁰ Manawatū-Whanganui Regional Council *Proposed Plan Change 2 – Section 32 Report* (July 2019) Section 6 at page 30.

¹¹ At [95] of my Evidence.

¹² As further explained on page 30 of the s 32 Report and reproduced at [96] of my Evidence.

achieve recalibrated Table 14.2 CNLM limits, by providing for them to apply for discretionary activity consents. At that time, the default for non-compliance with operative One Plan Table 14.2 was restricted discretionary activity Rule 14-2. PC2 proposed, instead, a new (full) discretionary activity Rule 14-2A.

[24] Some submitters took a different view on whether this approach was genuinely workable. Notably:

- (a) Dairy NZ and Federated Farmers NZ, who proposed two alternative pathways to qualify for controlled activity consent: one involving reduction of nitrogen leaching by 10% and one requiring reduction of nitrogen leaching to the 75th percentile for the relevant surface water management zone. Professor Horne's conclusion, after modelling the alternative pathways, was that dairy farms could be expected to achieve 10% to 20% nitrogen reductions using the range of GMPs and BMPs that had been considered to be the range of measures necessary for 'most' farms to reduce their nitrogen leaching loss to meet Table 14.2. Professor Horne's view has consistently been that the higher end of that range (20%) is more appropriate.¹³ The DV-PC2 adopts his recommendation of 20% reduction.
- (b) The submissions of commercial vegetable growers, Horticulture NZ and Potatoes NZ also did not agree that the proposed PC2 discretionary activity pathway was genuinely workable. They sought a more workable (controlled activity) consent pathway for CVG. The farmer and grower submitters emphasised in pre-hearing meetings that a discretionary activity pathway was not considered to provide a sufficiently certain and workable pathway. They also raised concerns that it was not clear from the policy and rule framework the extent of nitrogen leaching reduction that would be required to secure consent, or that this would be applied on a consistent basis.

¹³ Statement of Reply Evidence of David Horne (13 November 2023) at [17]–[19].

- (c) This was not a point limited to the farming interests, as the question of where the line would be drawn for consenting purposes was a common one across a range of submissions.
- (d) Farmer and grower submitters, along with their representative organisations, were also concerned about potential consenting costs, complexities and uncertainties associated with the discretionary activity status (including, not least, whether they would be able to continue their business).

[25] With respect to concerns around the lack of clarity as to the extent of nitrogen leaching reductions required under a discretionary pathway, I agreed with the farming interests and other submitters that there was no specific guidance in either the operative One Plan or the publicly notified PC2 on this matter. By this I mean that there was no specific guidance on the size of nitrogen leaching reductions that would be required to be made to secure discretionary activity consents for exceedance of Table 14.2.

[26] It was, and remains, my view that the One Plan contains a policy obstacle and does not provide a workable pathway for existing IFLU that do not meet Table 14.2 and that the publicly notified PC2 full discretionary activity pathway provided no certainty about the extent of exceedance that might be authorised. In response to submitters' and my own concerns, I proposed in my s 42A report variations of the alternative consent pathways requested by Dairy NZ, FFNZ and CVG interests. This involved a controlled activity pathway.

[27] I set out the basis for my support for the controlled activity pathways in my s 42A report (Volume 1) to the Hearing Panel as follows:¹⁴

In my opinion, any alternative controlled activity pathway for CVG can only be supported if it demonstrates that it will contribute substantive nitrogen leaching reduction (less SIN in surface water).

¹⁴ Section 42A Technical Report of Christine Foster (4 September 2020) at Section 12.2 at [10] and [11].

The key requirements of the alternative controlled activity pathway are, in my view:

- (a) Achievement of a specified minimum nitrogen leaching reduction (either as a percentage reduction from baseline or an absolute kg N/ha/year reduction from baseline);
- (b) Implementation of BMP to achieve that minimum nitrogen leaching reduction (i.e. actual land management practice improvement);
- (c) Selecting the appropriate baseline growing period, to ensure that the provisions do not inappropriately authorise CVG expansion that has occurred since the One Plan became operative;
- (d) Defining the baseline to limit the total growing area to ensure that areal expansion is addressed as 'new' IFLU activity as intended by the One Plan;
- (e) Requiring applications to be lodged as soon as possible (I note that the RMA Planning experts agreed that a period up to two years would be reasonable');
- (f) Requiring implementation of BMP within the shortest practicable time frame, in order to achieve nitrogen reduction as soon as reasonably practicable (in this respect I consider a time period much shorter than the 10 years discussed by the Farm Systems experts is reasonable). I note that the WSP Report and Dr Jolly anticipate that most GMP and BMP practice change can be adopted within three years (except for the implementation of controlled trafficking where machinery upgrades are required and involve significant capital investment);
- (g) Including requirements to adopt GMPs and BMPs to maximise nitrogen reductions.

One of the central concerns of other submitters is the lack of certainty in the PC2 framework about the extent of exceedance of nitrogen leaching limits contemplated by PC2, through the

discretionary pathway. In my opinion, incorporating the above matters could address these concerns.

- [28] The advice of Professor Horne and Dr Jolly was at the time, and remains, that the required minimum 20% and 35% reductions would require substantive on-farm interventions but would not be achievable for all existing IFLUs. A proportion of all pastoral and CVG IFLUs would still need to pursue discretionary activity consents.
- [29] The SIN modelling undertaken at the time¹⁵ confirmed that requiring interventions at this level would achieve improvement compared with the pre-One Plan baseline and similar water quality outcomes compared to strict enforcement of the Table 14.2 limits (slightly less but not materially worse). This is summarised in the Supplementary Table in Dr Snelder's evidence.¹⁶
- [30] The SIN modelling and farm scale economic modelling undertaken for the Council-level hearing demonstrated that forcing more demanding interventions (nitrogen leaching reductions) for the existing IFLUs would not achieve any material water quality improvement, but would incur significantly more disruption and cost. As described in Professor Horne's reply statement it becomes progressively more difficult for farmers to decrease leaching losses beyond 20% (and little additional water quality improvement with much more onerous reduction).¹⁷ As I understand it, 20% represents the point of 'diminishing returns'.
- [31] In the absence of certainty in the publicly notified PC2 provisions about exactly what extent of reductions would be required through the discretionary activity consenting pathway, Professor Horne, Dr Jolly and Dr Snelder modelled scenarios involving a range assumed nitrogen leaching reductions (pastoral reductions of 9kgN/ha/yr, 12kgN/ha/yr, 15kgN/ha/yr and 18kgN/ha/yr and CVG reductions of 36% and 55%). All of the modelled scenarios shown in the Supplementary Table attached to Dr Snelder's evidence present the 'year 20' outcome,¹⁸ and are compared with the most

¹⁵ Statement of Evidence of Ton Snelder (6 October 2023) at Attachment A.

¹⁶ Statement of Evidence of Ton Snelder (6 October 2023) at Attachment B.

¹⁷ Statement of Reply Evidence of David Horne (13 November 2023) at [19](c) and (d).

¹⁸ Statement of Evidence of Ton Snelder (6 October 2023) at Attachment B.

stringent 'year 20' Table 14.2 requirements. However, instead of deferring the nitrogen leaching reductions, the amended DV-PC2 provisions require those to be implemented immediately.

- [32] Contrary to the view expressed by Mr Carlyon and Mr Scott in their evidence, it is my view that the alternative controlled activity pathways inject into the One Plan a much greater degree of certainty for existing IFLU than currently exists in the One Plan or in the publicly notified PC2. That is, the certainty that there is a genuine workable opportunity to apply for consent (subject to conditions) and the certainty that minimum nitrogen leaching loss reductions will be achieved by those IFLU that qualify for the controlled activity pathway. I also proposed amendments to the PC2 policy framework to make it more rigorous (i.e. harder) for those IFLU that cannot or choose not to make the reductions required for controlled activity consent. My expectation was, and remains, that this will create an incentive for IFLU farmers to try as hard as possible to make reductions to be able to qualify for controlled activity consent, rather than the cost, complexity and uncertainty of the discretionary activity pathway.
- [33] At paragraph 6.21 of his evidence, Mr Scott describes the goal of the One Plan IFLU policy framework as being focused on achieving the water quality limits in the identified degraded catchments (I have assumed he means the water quality *targets* set out in One Plan Schedule 'E' for the targeted water management subzones) and for maintaining water quality in the 'better' catchments.
- [34] At paragraph 12.7 evidence, Mr Scott goes on to state that 'the goal of PC2 is to provide a functioning policy and rule framework that provides direction as to how to control excessive nitrogen in degraded catchments in order to return the waterways to a healthy state'. Those words suggest that much is expected of PC2 in terms of reversing water quality degradation. I do not agree that is the goal of PC2 and refer to the stated purpose of PC2.¹⁹

¹⁹ At [22] above.

- [35] I agree that the One Plan's region-wide response to the acknowledged water quality degradation is to improve water quality where degraded and maintain water quality where not degraded. However, I think care needs to be taken in describing the One Policy intent for managing IFLU. For example, in paragraph 8.35 of his evidence, Mr Scott emphasises the aim of the Table 14.2 reductions in nitrogen leaching loss to be the improvement of water quality and achievement of Objective 14-1. Care should be taken in my view to accurately describe the One Plan policy intention that IFLU *contribute to* water quality improvement where degraded. I note that this was made more explicit in the PC2 amendments to Policy 5-8 (a) (i) (C).

The assertion that the 'natural capital' approach is being abandoned

- [36] Throughout their evidence, Mr Carlyon and Mr Scott assert that the alternative controlled activity pathways proposed by DV-PC2 and the proposed risk assessment tool approach 'depart from' or 'abandon' the 'natural capital' approach that underlies Table 14.2 in the One Plan. Professor Horne's reply statement explains why this is not the case.²⁰
- [37] Dr Mackay's s 42A report to the One Plan hearings²¹ acknowledges that there is no method for calculating a soil's natural capital. He explains that, in the absence of any method for calculating a soil's natural capital, '*a proxy that serves as a useful alternative is the ability of the soil to sustain a legume-based pasture that fixes N biologically under optimum management and before the introduction of additional technologies. This proxy reflects the underlying capacity of soil to retain and supply nutrients and water, and the capacity of the soil to provide an environment to sustain legume and grass growth under the pressure of grazing animals*'.
- [38] The estimates of potential productive capacity of a legume-based pasture fixing N biologically under a 'typical sheep and beef farming system' for each Land Use Capability (LUC) unit in New Zealand (found in the extended legend of the LUC worksheets) were adopted as the basis for describing the productive capacity for the purposes of Table 14.2. This is used as an

²⁰ Statement of Reply Evidence of David Horne (13 November 2023) at section E.

²¹ Statement of Evidence of Alec Mackay (6 November 2023) at Attachment A at [31].

indication of potential nitrogen leaching from that typical sheep and beef farming system for the purposes of Table 14.2. As Professor Horne explains, pore available water is another (more targeted²²) proxy for the soil's natural capital and potential nitrogen leaching. For the reasons explained in Professor Horne's evidence, I do not agree that the alternative controlled activity pathways proposed by PC2 depart from or abandon the 'natural capital' approach of the One Plan. Rather, in my view, the proposed amendments adopt a measure of the potential of soil to leach nitrogen that is based on soil properties (a different proxy for natural capital).

- [39] In addition, the proposed PC2 risk assessment tools account for rainfall. Professor Horne, Dr Jolly, Dr le Miere and Mr Barber all agree that pore available water and rainfall are the two key drivers of nitrogen leaching from farming and growing systems. Professor Horne's opinion is that, in these respects, the risk assessment tool approach is more focused on the nitrogen leaching environmental outcome than farm production.

'Grandparenting'

- [40] Throughout their evidence, Mr Carlyon and Mr Scott contend that the alternative controlled activity pathways proposed by PC2 represent 'grandparenting'.²³ I understand 'grandparenting', in the context of nutrient management, to mean authorising the continuation of contaminant leaching at historical levels, and setting these historical levels of contamination as the limit. The DV-PC2 percentage reductions could be considered to be a form of 'grandparenting' to the extent that the baseline for the percentage reduction is a historical baseline nitrogen leaching rate. However, the approach does not authorise continuation of that historical baseline leaching rate. It requires proportionate reductions from it. Professor Horne's opinion is that the specified reductions in DV-PC2 are not disengaged from natural capital.²⁴

²² Statement of Reply Evidence of David Horne (13 November 2023) at [29].

²³ See for example, the Statement of Evidence of Michael Scott (6 October 2023) at 12.4.

²⁴ Statement of Reply Evidence of David Horne (13 November 2023) at [26].

- [41] I agree that the 75th percentile upper limit in the DV-PC2 provisions could be considered an expression of ‘grandparenting’ because it is set based on the actual (now historical) nitrogen leaching rates of all IFLU in the water management sub-zone, including the leaching rate of the applicant IFLU and IFLU that are consented and have (imposed) lower leaching rates than their historical baseline. However, again, the approach does not authorise continuation of the individual (applicant) IFLU’s historical nitrogen leaching rate. It requires reduction.
- [42] As Professor Horne explains, the proposed risk assessment approach cannot be considered ‘grandparenting’. It requires reduction of nitrogen leaching to a target that is based on the underlying natural characteristics of the land.

Is PC2 an ‘easier’ consenting pathway?

- [43] There is a theme throughout the evidence of Mr Carlyon and Mr Scott that Horizons’ sole motivation is to guarantee all IFLU growers and farmers consents. That is not the case. Certainly, the proposed controlled activity pathways means a consent will be granted (subject to conditions) but not for continued high leaching (reductions are required). For discretionary activities, the intention is to create an opportunity to apply for resource consent – it is not a guarantee that consent will be granted for continued high leaching.
- [44] At paragraph 10.2 of his evidence, Mr Carlyon expresses the view that the DV-PC2 alternative controlled activity pathways create an ‘easier’ consenting pathway. He also contends that PC2 relies on voluntary GMP that have uncertain outcomes and are ‘untrackable’ in terms of water quality outcomes. In paragraph 10.5, Mr Carlyon considers the DV-PC2 provisions would create a ‘much more permissive regime’.
- [45] I agree that the alternative controlled activity pathways (the specified percentage reductions and the risk assessment pathways) *may* mean that some existing IFLU will be able to secure consents as a controlled activity at nitrogen leaching rates higher than the CNLMs in Table 14.2. In my view however, it is more relevant to describe the DV-PC2 (and the alternative pastoral and CVG risk assessment tools) as creating a more workable and

more certain pathway by clearly identifying the nitrogen leaching loss reductions or nitrogen leaching risk reductions that are required to be made. These are not 'voluntary' reductions. They are minimum requirements that must be met in order to qualify for controlled activity consent. The alternative PC2 pathways do not facilitate the continued operation of IFLU at historical 'business as usual' nitrogen leaching rates. Neither do they guarantee that all existing IFLU will qualify for controlled activity consent.

- [46] My view is that, for the reasons earlier explained, amended DV-PC2 (with an alternative pathway) incentivise the adoption of nitrogen leaching reduction mitigations (that will achieve SIN reductions) and tighten the policy settings for consideration of those that do not qualify for the controlled activity pathway.
- [47] I do not agree with Mr Carlyon's characterisation of DV-PC2 as 'promoting farm management options only where they are practicable' and 'relying on GMP (where practicable) alone'.²⁵ This view overlooks the reality that GMP and BMP interventions are required to achieve nitrogen leaching loss reductions or nitrogen leaching risk reductions to qualify for the controlled activity consent pathway.
- [48] For the reasons already explained, I do not agree with Mr Carlyon's conclusion that PC2 does not provide any indication of thresholds,²⁶ and therefore provides a consenting pathway for all IFLU or that discretionary activity consents can be granted regardless of the impact on the receiving environment. Nor do I agree with his characterisation of the amended PC2 policy framework as being 'more open'.²⁷
- [49] It is my view that the amendments to the PC2 policy framework applicable to any application which exceeds the stated thresholds of the controlled activity pathways are substantially 'tighter' (i.e. more rigorous) than the operative One Plan provisions or the publicly notified PC2. Included in the DV-PC2 policy framework are explicit requirements to consider the

²⁵ Statement of Evidence of Greg Carlyon (6 October 2023) at 10.3.

²⁶ Statement of Evidence of Greg Carlyon (6 October 2023) at 10.4.

²⁷ Statement of Evidence of Greg Carlyon (6 October 2023) at 11.2.

sensitivity and extent of current degradation of the receiving environment and the impact on the receiving environment. These have remained in the amended DV-PC2 provisions filed with the Court. My expectation is that it will be difficult to obtain a discretionary activity consent under that policy framework unless significant reductions in nitrogen leaching loss can be demonstrated. I understood that, until recently, Mr Carlyon supported the proposed 'tightening' amendments to the PC2 policy framework.

[50] There is no guarantee that all discretionary activity applications will be granted. I have some experience of determining consents under the One Plan and elsewhere (not specifically IFLU consents). I consider the proposed tightened policies of PC2 will prevent high nitrogen leaching IFLU securing consent for historically high leaching rates. The policy direction is clear and will, in my opinion, encourage decision makers to require additional mitigation measures or determine that the activity does not merit a grant of consent.

[51] Mr Scott also characterises the DV-PC2 and amended PC2 alternative controlled activity pathways as 'easier' pathways and suggests that the aim of PC2 is to give IFLU a simple and guaranteed consent. For example, at paragraph 9.8 of his evidence, Mr Scott states that the effect of the alternative consent pathways proposed by Horizons would be to provide all farms with a pathway to an approved consent. For the reasons earlier in this reply statement, I do not consider that this characterisation is accurate. It is not the intention or the expectation of the proposed amended DV-PC2 framework that all existing IFLU would be guaranteed a controlled activity consent. Professor Horne's and Dr Jolly's evidence is that a proportion will be unable to qualify for the controlled activity pathway.

[52] The alternative pathways are, in my opinion, more workable and efficient, with greater certainty of nitrogen leaching reduction requirements and outcomes and yield similar water quality outcomes to the scenario of strict (no exceptions) implementation of Table 14.2. I think it is inaccurate to characterise that as an 'easy' consenting pathway. The DV-PC2 and the proposed amended DV-PC2 frameworks intend that it is the actual mitigation actions undertaken on the land that are monitored for

compliance. This is superior in my view to monitoring of Overseer modelling outputs that rely on notional inputs rather than evidence of practice change.

- [53] In paragraph 8.33 of his evidence, Mr Scott raises concerns about applicants choosing a more lenient pathway or ‘gaming the system’. Putting to one side the way this is expressed I cannot accept this view in light of the SIN modelling (and more recently the comparison of DV-PC2 and the risk assessment pathway outcomes assessment) reported on by Dr Snelder. This modelling indicates that the risk to water quality associated with IFLU pursuing the alternative pathways is not material. This has been confirmed again by Dr Snelder in his evidence.²⁸
- [54] The proposed rule framework provides a genuine discretionary activity pathway for IFLU that cannot meet the controlled activity thresholds. That overcomes the stasis that currently prevails in which existing IFLU are without the ability to apply for consent, and unable to be required to reduce nitrogen leaching. Under both the DV-PC2 and the amended DV-PC2, IFLU have the option of avoiding the transaction cost and risk of the discretionary activity pathway by making specified reductions to their nitrogen leaching or nitrogen leaching risk. I consider this to provide a more certain outcome than the stasis that currently prevails. I would not characterise that as ‘easy’ or ‘gaming the system’. It is, more accurately, providing workable consenting pathways that can efficiently and effectively achieve nitrogen leaching loss reductions in the quickest time possible, while achieving similar water quality outcomes to strict application of Table 14.2.
- [55] I consider it useful to consider how the alternative controlled activity pathways would operate. I provide the following pastoral examples based on my review of the dairy database Horizons holds of consented and unconsented dairy farms in the targeted water management sub-zones and the range in their baseline (pre-regulation) nitrogen leaching rates. There is a range of baseline (pre-regulation) nitrogen leaching rates:²⁹

²⁸ Statement of Evidence of David Horne (6 October 2023) at [37].

²⁹ This is what is referred to as the “Dairy Database” that was circulated to parties prior to expert conferencing.

- (a) For an IFLU that has a nitrogen leaching rate slightly or modestly above the Table 14.2 CNLMs, a 20% reduction might require a nitrogen leaching rate below the Table 14.2 limit. Similarly, the risk assessment matrix target of 'low' might mean an effective nitrogen leaching rate below the Table 14.2 limit. For these IFLU, it does not matter which pathway is adopted, the IFLU is forced to a nitrogen leaching rate compliant with Table 14.2.
- (b) For an IFLU that has a higher nitrogen leaching rate, a 20% reduction might require a nitrogen leaching rate close to or just above the Table 14.2 limit. Similarly, the risk assessment matrix target of 'low' might mean an effective nitrogen leaching rate below or just above Table 14.2 limit. For these IFLU, it does not matter which pathway is adopted, the IFLU is forced to a nitrogen leaching rate above but perhaps not that far beyond Table 14.2. For these IFLU, the SIN modelling suggests to me that there will be little or no detectable in-river water quality impact associated with being close to but not quite hitting the Table 14.2 limit.
- (c) For IFLU that have very high nitrogen leaching rates, a 20% reduction or reduction below the 75th percentile leaching rate may not be achievable. As Professor Horne discusses in his evidence,³⁰ there are some existing IFLU whose N leaching profiles are high because of the particular soil and rainfall conditions they have and mitigation measures will struggle to reduce those. For these IFLU, none of the controlled activity pathways will be available and the IFLU will have to apply for consent as a discretionary activity.

[56] Having regard to the above context, I do not see a situation of 'gaming'. I see options that land IFLU in pretty much the same consenting situation.

[57] One of the features of the way in which Table 14.2 is applied is that there was an ability for IFLU that had nitrogen leaching less than the Table 14.2 CNLMs to increase their leaching to the CNLM limit (to 'leach up') by

³⁰ Statement of Evidence of David Horne (6 October 2023) at [37].

converting land so that it could achieve its full productive capacity based on natural capital. Allowing such ‘leaching up’ would have increased nitrogen leaching, particularly in parts of the coastal Rangitikei and Waikawa water management sub-zones. To address this, a policy change in DV-PC2 specifically prevents ‘leaching up’. This has been carried over into amended DV-PC2. I note that the National Environmental Standards for Freshwater 2020 (which were released just before the PC2 Council-level hearing) also avoid such ‘leaching up’ by preventing the conversion of land to pastoral use.

Purpose of PC2

- [58] At paragraph 16.9 of his evidence, Mr Carlyon states that the primary driver of Horizons is to “*provide consents to intensive farming land use*”. The statement suggests that Horizons’ primary motivation is to make things easy for farmers and simply ‘give out’ consents unquestioningly for IFLU operating at historically high nitrogen leaching rates. At paragraph 16.17, Mr Carlyon states that “*the focus is solely on a consent pathway or equipping intensive farm users with resource consents*”. In my opinion, those statements wrongly characterise the purpose of PC2. The stated purpose of PC2, set out earlier, is to improve the workability of the provisions for IFLU in order to enable a return to effective regulation of existing intensive farming land uses through the One Plan as soon as practicable.³¹ The intention is to regulate and, through regulation, to achieve reductions in nitrogen leaching loss from existing unconsented IFLU in the targeted water management sub-zones. All versions of PC2 achieve this. Dr Snelder’s evidence³² is that there is no practical importance to the differences (to environmental values) in the degree of reduction required between the proposals.

Limiting PC2 to recalibrated Table 14.2

- [59] Mr Carlyon considers³³ a preferable approach would be to update Table 14.2, make no other changes to the One Plan policy and rule settings for existing IFLU, and await the NPS-FM freshwater planning instrument. That is

³¹ As further explained on page 30 of the s 32 Report and reproduced at paragraph 96 of my Evidence.

³² Reply Statement of Evidence of Ton Snelder (13 November 2023) at [14].

³³ Statement of Evidence of Greg Carlyon (6 October 2023) at 17.2.

on the basis of his assumption that this would mean all IFLU consents could be considered under one set of unified planning provisions.

- [60] I do not agree that approach is preferable. It would not provide a workable framework for achieving the regulation of existing IFLU and would potentially perpetuate the situation of unregulated existing IFLU, further entrenching water quality degradation. It would divert Horizons resources to unnecessary enforcement action, with highly uncertain water quality benefit. My view is that Horizons' resources are better employed implementing the PC2 provisions, and regulating unconsented existing IFLU so that they are required to reduce nitrogen leaching as quickly as possible.³⁴ This approach, in my opinion, accords better with all of the higher order policy instruments and better gives effect to the One Plan objectives and the purpose of the Act.

NPS-FM hierarchy of obligations

- [61] At paragraph 7.21 of his evidence, Mr Carlyon considers that the proposed PC2 framework prioritises the third obligation of the NPS-FM Objectives' hierarchy of obligations (the ability of people and communities to provide for their social and economic wellbeing) ahead of the first obligation (the health and well-being of water bodies and freshwater ecosystems). It is correct that, even with reduced diffuse nitrogen leaching from IFLU, there will be water quality degradation in and downstream of the targeted water management sub-zones. I reiterate my earlier point that the One Plan provisions for managing IFLU are not expected to 'fix' that degradation. Rather, they are expected to contribute to water quality improvement, alongside the other elements of the One Plan water quality strategy. The SIN modelling demonstrates that PC2 will yield water quality improvement (albeit modest).
- [62] It is my view that amended DV-PC2 gives effect to the first obligation (the requirements will achieve modest SIN reduction (water quality improvement)).

³⁴ See Statement of Evidence of Christine Foster (7 October 2023) at [206]–[209].

- [63] An approach that only provides for strict enforcement of (a recalibrated) Table 14.2 dismisses the non-feasibility of this for a proportion of unconsented IFLU and the economic and social disruption this would cause. That disruption would not yield material additional water quality benefits as demonstrated by Dr Snelder's modelling and recent assessment. In my opinion, after considering all of the relevant s 32AA matters (including giving effect to the NPS-FM hierarchy of obligations), the proposed PC2 provisions better achieve the purpose of the Act, the objectives of the One Plan and of PC2 itself.
- [64] Criticism that the PC2 regulatory framework for the unconsented existing IFLU does not go far enough, or will not achieve the One Plan water quality objectives or overcome existing degradation fails to acknowledge the small part this group of activities plays in contributing to and potentially improving water quality degradation. That is not to say that the gains they bring are not important, but simply recognises that there is a limit to the extent of change they can bring about. The settings of the amended DV-PC2 provisions mean that regulation of these activities is achievable, workable and will yield water quality benefits.

The water quality impact of regulating the unconsented existing IFLU

- [65] At paragraph 6.8 of his evidence, Mr Carlyon states that the impact of PC2 will, at best, mean the trajectory of declining water quality is less steep, resulting in 'less bad' outcomes, with little evidence of a widespread shift from poor to good water quality. Ms Patterson provides a slightly more nuanced assessment in her evidence.³⁵ Ms Patterson observed in paragraph 62 that:

...(a) Where targeted efforts to manage IFLUs and nutrient loss generally were being made, improvement was occurring (if in an uneven manner); and

(b) Further effort would be required to achieve the One Plan water quality targets.

³⁵ Statement of Evidence of Maree Patterson (6 October 2023) at [59]–[62].

Ms Patterson's summarised conclusions are supported by Dr Snelder's evidence on water quality state and 20-year trends in his primary evidence.³⁶

- [66] At paragraph 6.9 of his evidence, Mr Carlyon states his opinion that a strong, clear, monitored and enforced regulatory framework is the key method to deliver outcomes against a background context of environmental decline and his view that the One Plan was clearly intended to provide such a framework. At paragraph 8.3, Mr Carlyon refers to concerns that the provisions in PC2 (beyond Table 14.2) do not provide certainty that the Region's water quality will be maintained or improved. Similarly, at paragraph 7.7, Mr Carlyon concludes that the benefits set out by Horizons (in terms of water quality outcomes) are overstated, before recording his view at paragraph 7.28 that it is not all clear that PC2 will contribute to the improvement in the health and wellbeing of degraded water bodies.
- [67] Similarly, Mr Scott questions the robustness of the SIN modelling and the extent of water quality improvement achievable from the proposed alternative consent pathways.
- [68] Both Mr Scott and Mr Carlyon rely on the evidence of Dr Parlato. Dr Snelder has clarified why Dr Parlato's concerns about model uncertainty are unfounded.³⁷ That is, that the modelling outcomes are not vulnerable to uncertainties because they are expressed as relative differences, not absolute estimates (discussed in more detail later in my reply).
- [69] PC2 addresses the regulatory settings of the remaining estimated 235 unconsented existing IFLU. The Cox/Snelder SIN modelling for the Council level hearing examined the likely SIN outcomes achievable from regulating 70 of those using different regulatory settings. 70 IFLU were modelled because they were the only ones for which Horizons had on-farm nitrogen leaching loss data (estimated using Overseer and collected through Horizons own records or supplied by Dairy NZ). The modelling report³⁸ described

³⁶ Statement of Evidence of Antonius Snelder (6 October 2023) at Section G.

³⁷ Statement of Reply Evidence of Antonius Snelder (13 November 2023) at Section C.

³⁸ Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment A.

‘modest’ SIN improvement for all regulatory settings and little difference between them. These differences are evident in the Supplementary Table attached to Dr Snelder’s primary evidence.³⁹ Actual in-river improvement may, actually, be greater if the remaining ($235 - 70 = 165$) existing IFLU are also regulated to reduce nitrogen leaching loss. These 165 IFLU were described in the model as ‘unknown unconsented IFLU’ to distinguish them from the ‘known’ 70. They were accounted for in the model in the following way:⁴⁰

‘Unknown Unconsented-IFLU was represented in the scenarios by all IFLU land shown on Figure 2 apart from those parcels that were accounted for in the HRC database. The nitrogen leaching rate for the Unknown unconsented-IFLU land has been assumed to be the rate defined by the calibrated model prior to regulation in 2012 (i.e., at the rates defined by Bright et al. (2018) with some adjustments).’

- [70] In this respect, the SIN modelling findings can be considered to be potentially conservative.
- [71] The modelled SIN results indicate that regulation of the remaining pool of unconsented existing IFLU will not, and cannot in my view, overcome the cumulative water quality degradation attributable to all land uses and point source discharges in the region. That is simply because they are so few in number and area, relative to the quantum of other land use sources. It is reasonable, in my view, to expect the unconsented existing IFLU to contribute by reducing their on-farm nitrogen leaching loss, commensurate with the capability and constraints of the land. However, they cannot be expected to overcome all degradation.
- [72] The One Plan policy framework (RPS Policy 5-8 (a) (C) was amended by PC2 to require IFLU to *contribute to* achieving the One Plan strategy for surface water quality, appropriately in my view, to reflect this reality. The planners

³⁹ Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment B.

⁴⁰ Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment A, page 16.

recommended (at expert conferencing held 24 February 2023) further amendment to the wording of Policy 5-8(a)(C) in red as follows:

(C) will ~~contribute to address key sources and pathways of~~ ~~contaminant loss through the~~ implementation of the strategy for surface water[^] quality set out in Policies 5-2, 5-3, 5-4 and 5-5 and the strategy for groundwater quality set out in Policy 5-6; will achieve the strategies for surface water[^] quality set out in Policies 5-2, 5-3, 5-4 and 5-5, and the strategy for groundwater quality in Policy 5-6

[73] Mr Carlyon's support for this and other amendments to the PC2 policy framework was confirmed to me in an email dated 28 February 2023.

SIN modelling uncertainty

[74] At paragraph 7.28 and elsewhere throughout his evidence, Mr Carlyon relies on the opinion of Dr Parlato that there is uncertainty in the SIN modelling undertaken by Drs Snelder and Cox.⁴¹ Dr Snelder addresses Dr Parlato's concerns⁴² and points out that the modelling outcomes are not vulnerable to uncertainties because they are expressed as relative differences. Dr Snelder also notes that the comparison of outcomes between the DV-PC2 and risk assessment alternative pathways is not affected by uncertainties (because any uncertainty in the modelling for each is nearly identical).

[75] There is no other water quality modelling available that contradicts Dr Snelder's findings. I consider it is reasonable to rely on that modelling work as an indication of the likely order of magnitude of SIN reduction (water quality improvement) achievable from the alternative One Plan and PC2 settings considered.

[76] I note that the modelling indicates that all of the regulatory settings considered achieve modest improvement. None of the scenarios 'go backwards' or achieve a worse outcome for the targeted water management subzones than the pre-One Plan situation. This is important when

⁴¹ Statement of Evidence of Elizabeth Parlato (6 November 2023) at 6.26-6.35.

⁴² Statement of Reply of Antonius Snelder (13 November 2023) at [8]–[10].

considering the objectives of the One Plan, but also the direction from iwi during preparation of the plan change that for this plan change (when fixing the problems with the One Plan) water quality must not go backwards.⁴³

Entrenching water quality degradation

- [77] Failure to provide a workable consent pathway (with specified nitrogen leaching loss or loss risk reductions) will leave those unconsented existing IFLUs without the ability to seek consent under the One Plan. It is my expectation that, without a workable consenting framework, there will be a reluctance by farmers to apply for consents under the current (uncertain) One Plan framework ahead of the public notification of the freshwater planning instrument.
- [78] The current One Plan settings have not been successful in overcoming region-wide water quality degradation. I do not expect they will meet the requirements of the NPS-FM NOF process. Changes to those settings will likely be required and, as has been the case throughout the development of the One Plan and PC2, those changes may be strongly litigated. My view is that it cannot be assumed that the freshwater planning instrument framework for existing unconsented IFLU will be implementable immediately on notification of the freshwater planning instrument.
- [79] My view is that implementation of PC2 (either DV-PC2 or amended DV-PC2) is necessary to enable Horizons to regulate the remaining unconsented existing IFLU as soon as practicable. In my view, Horizons' resources will be better employed implementing the PC2 provisions so that progress can begin to be made in regulating those activities and securing meaningful reductions in nitrogen leaching loss from them. The alternative (deferral) would entrench their current nitrogen leaching losses for potentially the next three years at least. It must be remembered that they've already been unregulated since 2017.

⁴³ Statement of Evidence of Elizabeth Daly (6 October 2023) at [14].

Impacts for coastal Manawatū & Ngāti Turanga

- [80] I take the points that Mr Turoa makes in paragraphs 3.10 to 4.8 of his evidence, that Ngāti Turanga (as mana whenua for the coastal Manawatū rohe) are on the receiving end of the water degradation in the catchment of the Manawatū River. My aim, in assisting Horizons with PC2 has been to try to ensure that existing IFLU are made to reduce their nitrogen leaching to levels that will achieve some contribution to water quality improvement. The difference between Mr Turoa's and my approach seem to lie in what we each think PC2 can achieve in this respect. The SIN modelling tells me that regulating the remaining unconsented existing IFLU will not achieve the restoration and recovery of the awa. That is because they are a relatively small part, not the sole source, of the upstream catchment contamination.
- [81] Much more than PC2 is required to achieve the outcomes Mr Turoa and Ngāti Turanga seek. However, DV-PC2 and amended DV-PC2 will in my view deliver some benefits. In this respect, it remains my view that providing for alternative consent pathways and tightening the policy framework as proposed by DV-PC2 and amended DV-PC2 better achieve the purpose of the Act and better provide for the s 6 (e) relationship of mana whenua with water, coastal lakes, and other values in the lower Manawatū catchment than a 'do nothing' approach can.
- [82] I note that not all Iwi opposed PC2. Some were opposed to a 'do nothing' approach. Matua Manahi Paewai, who attended the PC2 Council-level hearing on behalf of Rangitāne o Tamaki nui-ā-Rua (an Iwi in the upper Manawatū) supported PC2 on the basis that (my summary of his words) PC2 is better than nothing to make a start on getting rid of pollution.
- [83] In my s 42A report to the PC2 Hearing Panel, I did not support the request of Ngāti Turanga's request to include additional lower Manawatū water management sub-zones in PC2. I understand Mr Turoa's concern, and I agree those sub-zones have degraded water quality which needs addressing. My reason for opposing the request was not that I disagree with this reality. My concern was (and remains) an issue of process and fairness. Given the publicly notified narrow scope of PC2 (addressing only existing IFLU in the

identified targeted water management sub-zones) I did not consider the inclusion of additional targeted water management sub-zones, with new rules not previously in place for IFLU there, was appropriate. The request was opposed by farming representatives in further submissions for this reasons. My opposition was, and still is, an issue of scope.

[84] Also, at the time, I understood that Dr Peet was in discussion with Mr Turoa about this and other aspects of management of the lower Manawatū. I acknowledge that those discussions have not concluded and note Dr Daly's commitment (stated in her reply statement) to continue those discussions. I am aware, from my involvement in the Oranga Wai project, that the question about the scope of an IFLU management regime (whether to distinguish targeted water management sub-zones or some completely different approach) is very much live. My view is that, given the interim nature and limited scope of PC2, the freshwater planning instrument is the better vehicle for exploring these broader issues.

[85] Mr Carlyon states (at paragraph 7.36 of his evidence) that PC2 does not attempt to address the fundamental requirements of Te Mana o Te Wai on the basis that these matters are to be addressed in the future NPS-FM freshwater planning instrument. I do not agree that DV-PC2 evades the obligations of the NPS-FM by deferring these to a later process. PC2 does what it can, given the relatively small body of IFLU contaminant sources in the wider scheme of water quality degradation in the targeted water management sub-zones. This goes to the point earlier discussed about what PC2 was trying to achieve. It is not intended to give full effect to the NPS-FM. That does not mean that it fails to give effect. My view is that DV-PC2 gives effect to the NPS-FM to the extent practicable within the scope of the plan change itself and the submissions lodged.

[86] Having reflected on Mr Turoa's evidence, I do not agree with the conclusions Mr Carlyon makes about the extent to which DV-PC2 delivers on Te Mana o te Wai and iwi aspirations for water quality. My view is that DV-PC2 does what it can and, in this respect, is more appropriate than doing nothing (or a simple recalibration of Table 14.2) in giving effect to the relevant objectives, NPS-FM and NZCPS and in achieving the purpose of the Act.

Table 14.2 & DV-PC2 percentage reductions - absolute numbers?

- [87] At paragraph 13.5 of his evidence, Mr Carlyon takes issue with my characterisation of the Table 14.2 CNLMs as 'absolute numbers' for regulatory purposes.
- [88] In my view they are absolute numbers because, to qualify as a controlled activity, an applicant must demonstrate that the Overseer estimated nitrogen leaching rate for the IFLU will be progressively reduced over the period to 'Year 20' to be less than the progressively more demanding CNLM values. These estimated nitrogen leaching rates will be Overseer-derived single numbers. When included in the application, they will become part of the applicant's proposal and set the nitrogen leaching maximums (absolute upper limits) proposed.
- [89] In this sense the Table 14.2 CNLMs are more than just a 'drafting gate' for controlled activity applications. They set an absolute upper limit of nitrogen leaching and the limits proposed in the application set the absolute upper limits for the IFLU activity over time. The matters over which control is reserved in Rule 14-1 do not allow for amendment or further reduction of the upper limits proposed in the application.
- [90] I agree that, for applications that exceed the Table 14.2 CNLMs (which require a discretionary activity consent), the CNLMs act as a 'drafting gate'. Once through that 'gate', the full discretion available to the consent authority and the DV-PC2 policy framework allows for granting or declining consent for the nitrogen leaching rates proposed in the application and for the imposition of conditions requiring adoption of measures to reduce the nitrogen leaching rates proposed. The additional considerations proposed to be inserted into Policy 14-6 (including the requirement to have particular regard to mana whenua values) are comprehensive and forceful in this regard.
- [91] The DV-PC2 percentage reductions are also, in my view absolute upper limits when applied to controlled activities, but can be seen as a 'drafting gate' for the discretionary activities that exceed those upper limits.

Absence of a 'sunset clause'

- [92] Mr Carlyon observes at paragraph 7.10 of his evidence that the proposed PC2 provisions do not include a 'sunset clause' and are not limited in terms of the time over which they will endure.
- [93] I agree with Mr Carlyon that it is important that PC2 does not create adverse long-duration legacy consents at odds with the future freshwater planning instrument. I also agree that there is no explicit 'sunset clause' or 'use-by' date within the proposed PC2 provisions after which they cease to have effect. However, the effect of the proposed policies and rules is that unconsented existing IFLUs will qualify for controlled activity consent only if their applications are lodged within one year of the operative date of PC1 and the on-farm mitigation measures necessary to achieve the nitrogen leaching risk thresholds are implemented within two years. This is specified in Policy 14-5 (d) (iv) and condition (d) (iv) of Rule 14-1. Failure to comply with these requirements will require an application for discretionary activity consent (i.e. a more rigorous default consent than required under the unchanged One Plan provisions).
- [94] In my opinion, these requirements effectively provide a time limit or 'sunset clause' for the controlled activity pathway. I understand that Mr Carlyon supports the proposed 'apply within one year and implement mitigations within two years' approach for controlled activities.
- [95] The default PC2 rule requiring discretionary activity consent does not need a 'sunset clause' in my opinion because the policy framework that supports it is much more rigorous than the One Plan, in my view. In any event, there is no 'sunset clause' included for the default rule in the operative One Plan.

Consent duration

- [96] Mr Scott agrees with me that short consent duration is appropriate for consents granted under the (interim) PC2 provisions and he supports the proposed maximum of ten years.⁴⁴

⁴⁴ Statement of Evidence of Michael Scott (6 November 2023) at 10.21.

- [97] In addition, Mr Scott suggests an additional amendment to Policy 14-6 (f) (v) to ensure that high nitrogen leaching activities are granted lesser duration.⁴⁵ The proposed amended DV-PC2 wording of Policy 14-6 (f) (v) was intended to provide this clear direction and I consider it does so in a less convoluted and less ambiguous way. I prefer the amended DV-PC2 wording that was endorsed by the planners at expert conferencing.
- [98] Mr Scott also recommends the duration policy is elevated into the list of matters to be given 'particular regard' (not just 'regard').⁴⁶ I am not opposed to that, and would be comfortable with this change to the provisions.

Implementation time frame

- [99] Mr Scott agrees with the amended DV-PC2 proposal that the alternative consent pathways should only be available for a period of one year and, after that time, IFLU applicants should be required to be assessed through a discretionary activity application. However, Mr Scott has expanded that requirement in Policy 14-5 (d) and Rule 14-1 to also require applications under the Table 14.2 pathway to be limited to a one-year period. That was never the intention of the One Plan. It was a matter debated by the Hearing Panel who, ultimately, determined that this one-year window of time should not apply to the Table 14.2 pathway.⁴⁷ I support that approach.

Review of consented existing IFLU

- [100] In the last paragraph of section 16.17 of his evidence, Mr Carlyon accepts that Option 3 (DV-PC2) would provide a clear consent pathway to be in play in advance of Horizon's freshwater planning instrument to give full effect to the NPS-FM. His view is that this would be appropriate only for a short term response. I agree and that is the reason I support a maximum ten-year duration for consents granted under PC2. There is a real possibility they will be shorter, given the additional considerations in Policy 14-6, and this will be determined on a case by case basis.

⁴⁵ Statement of Evidence of Michael Scott (6 November 2023) at 10.22.

⁴⁶ Statement of Evidence of Michael Scott (6 November 2023) at 8.65. Statement of

⁴⁷ Statement of Evidence of Michael Scott (6 November 2023) at 3.163-3.168.

- [101] In addition, Mr Carlyon suggests a full review of all consents already granted for existing IFLUs.⁴⁸ Mr Carlyon considers that all IFLU should be considered on an equal footing, as a preferred way forward.
- [102] My analysis of the data set of consents granted for IFLU, undertaken in preparing my s 42A report, found that 213 consents had been granted for IFLU in the targeted water management sub-zones. Most of them have expiry dates beyond 2030 and 50 of them have expiry dates beyond 2035. I agree with Mr Carlyon that these are long duration consents.
- [103] The scope of PC2 is limited to addressing the consenting framework for the remaining unconsented existing IFLU. The approach taken to re-consenting or reviewing the 213 consented IFLU has not been a matter within the scope of PC2. For the reasons I explain above, the focus through PC2 is on requiring and processing consents for the remaining unconsented existing IFLUs (at least 235). My experience of 'called-in' consent reviews is also that they are potentially fraught, litigated and resource hungry processes.
- [104] I have no basis for recommending, and I do not consider there is any scope for, changed settings to direct the review or re-consenting of the 213 consented existing IFLU through PC2.

PC2 assessment baseline

- [105] At paragraph 7.13 of his evidence Mr Carlyon reiterates Mr Turoa's concern (on behalf of Ngāti Turanga) that PC2 was compared against an inappropriate baseline (which included unlawful and unconsented intensive farming activity). To clarify, the baseline adopted for s 32AA comparative assessment was agreed at Planning Expert Conferencing held prior to the Council-level hearing as the 'status quo One Plan unchanged with the assumption of enforcement'.⁴⁹ All planners present, including Mr Carlyon and myself, agreed with that approach. That scenario was included in the SIN modelling and is represented in Row 3 of the Supplementary Table at Attachment B of Dr Snelder's evidence.

⁴⁸ Evidence in Chief of Gregory Carlyon (6 November 2023) at 5.2h.

⁴⁹ Joint Witness Statement – Planning (29 July 2020) at Annexure A, question 2 (row 2).

[106] In paragraph 8.36 of his evidence, Mr Scott expresses the opinion that it would be more appropriate to compare the anticipated modest improvement nitrogen water quality with the improvement that would be delivered by the recalibrated Table 14.2. That does not strictly represent the status quo One Plan baseline for comparison. In any event, as the Supplementary Table attached to Dr Snelder's evidence illustrates,⁵⁰ the SIN modelling provided modelled outcomes for the recalibrated Table 14.2 alone and demonstrates that the relative difference is similar for all of the alternative consent pathways. As already noted, Dr Snelder describes the differences in outcome as being of no practical importance.

[107] Mr Scott suggests that the preferred approach should be based on the approach that most efficiently and effectively achieves Objective 14-1. I agree. But the SIN modelling outcomes do not represent the efficiency or effectiveness of the approach. They present information on only the water quality impact of alternatives. For the purposes of s 32AA, I agree that considerations of the efficiency and effectiveness in achieving the purpose of PC2 and One Plan Objective 14-1 are highly relevant for the purposes of s 32AA, alongside environmental, economic, cultural and social benefits and cost considerations. Water quality outcomes are an important consideration, given the degraded state of water quality in the targeted water management subzones (and related values). The intentional policy framework of the One Plan to improve degraded water quality. In any event, given the closeness of the SIN modelling results for the strict Table 14.2 and alternative pathway scenarios, the modelled water quality outcomes do not suggest a clearly superior alternative that stands out from the others.

Nature of the problem

[108] At paragraph 7.20 of his evidence, Mr Carlyon raises doubts about the existence of the 'policy obstacle' in the One Plan that I describe in paragraphs 59 to 65 of my Evidence. I remain satisfied that the current formulation of the One Plan presents a policy and a practical (lack of confidence) issue preventing the regulation of the remaining unconsented existing IFLU. As has

⁵⁰ Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment B.

been well described by Dr Daly, the ‘policy obstacle’ was also confirmed independently of Horizons and the Ministry for the Environment.⁵¹

[109] I note that the evidence of Mr Scott accepts that there is a policy obstacle.⁵²

Manawatū River Leaders Accord

[110] I agree with Mr Carlyon⁵³ that the Manawatū River Leaders Accord is a relevant document. This was acknowledged at paragraph 282 of my Evidence. For completeness, I record my view that the proposed PC2 provisions will contribute to returning the catchment waterways to a healthy condition and will achieve more sustainable use of the land and water resources of the catchment. This reflects the intention of the two goals highlighted in paragraph 7.46 of Mr Carlyon’s evidence.

Risk assessment tool

[111] At paragraph 4.3 of his evidence, Mr Scott describes the PC2 risk assessment tools as being ‘focused solely on inputs’. I do not agree.

[112] As explained in detail in the evidence of Professor Horne, Dr le Miere and Dr Jolly, the limits imposed in proposed Tables 14.2A and 14.2B are derived taking account of the underlying biophysical characteristics that are the key drivers of nitrogen leaching in the targeted water management sub-zones. The limits are not purely input focused. More stringent limits apply where land has greater inherent vulnerability to nitrogen leaching.

Certainty in delivering on Objective 14-1

[113] At paragraph 4.6 of his evidence, Mr Scott states his view that the proposed new (risk assessment tools) introduce more uncertainty in delivery against Objective 14-1. For the reasons explained earlier, I consider the alternative controlled activity pathways and amended policy framework proposed by DV-PC2 and the proposed further amended PC2 provisions inject a much

⁵¹ Statement of Evidence of Elizabeth Daly (6 October 2023) at [55].

⁵² Statement of Evidence of Michael Scott (6 November 2023) at section 5.

⁵³ Statement of Evidence of Greg Carlyon (6 November 2023) at 7.47.

greater degree of certainty to the management of existing IFLU than the One Plan or publicly notified PC2.

‘Most’ farms

[114] At paragraph 6.11 of his evidence, Mr Scott sets out his interpretation of the expression ‘most farms’ in One Plan Policy 5-8 (C). There, it describes the One Plan’s intention that the Table 14.2 CNLMs would be ‘achievable on most farms using good management practices’.

[115] Professor Horne provides in my view a more accurate description of what ‘most farms’ was understood to mean at the time the One Plan was proposed⁵⁴ than the theoretical interpretation presented by Mr Scott. Professor Horne undertook an analysis of IFLU in the region which suggested that, if the IFLU which exceeded their CNLM by up to 10-12kg N/ha/year implemented appropriate GMPs or BMPs, they would be able to reduce their nitrogen leaching to comply with the Table 14.2 CNLM. He estimated that approximately 65% to 70% of IFLU would be able to achieve this.

[116] Dr Mackay also provided a description of what ‘most farms’ was understood to mean at the time the One Plan was proposed⁵⁵. The approaches of both experts appear to largely align.

[117] As I understand it, Professor Horne’s approach to modelling the nitrogen leaching reductions achievable adopted a similar approach to the original One Plan approach described by Dr Mackay. That is, by applying progressively more stringent nitrogen leaching mitigation measures, to understand what was likely to be achievable and what the on-farm feasibility and water quality implications of that would be.

Policy 5-8a

[118] At paragraph 6.12 of his evidence, Mr Scott presents his interpretation of the direction of One Plan Policy 5-8a. His discussion would benefit, in my view from presenting the full wording of Policy 5-8. That is (from the unchanged

⁵⁴ Statement of Evidence of David Horne (6 October 2023) at [42].

⁵⁵ Statement of Evidence of Alec Mackay (6 November 2023) at 5.10–5.16.

operative One Plan): *'Regulation of intensive farming land^ use activities affecting groundwater and surface water^ quality'*. Mr Scott characterises Policy 5-8(a) as being the determination of the limits to impose on all sources of nitrogen discharge in order to return the waterways to a healthy state. I do not read Policy 5-8 (a) as determining the limits to impose on 'all sources of nitrogen discharge' as Mr Scott suggests. Policy 5-8 is explicitly and only about intensive farming land uses (not all land uses).

Do the PC2 policy amendments broaden or tighten the IFLU policies?

- [119] In paragraph of Section 7.1 of his evidence, Mr Scott describes the changes made by DV-PC2 to Policy 14-6 as enabling a broader consideration of IFLU that cannot meet the controlled activity opportunities. For the reasons earlier explained, my view is that the amendments have introduced additional considerations intended to protect environmental values and, thereby, tightened the policy framework.

Reliance on Overseer

- [120] In paragraphs 8.10 to 8.27 of his evidence, Mr Scott considers the role of Overseer in implementation of the One Plan and the appropriateness of reliance on Overseer. His conclusion is, broadly, that Overseer (though still being refined) remains the best tool available for determining likely nitrogen. On that basis he believes Overseer should be retained as the key determinant of controlled activity status.
- [121] Mr Scott's discussion does not confront the MfE advice against reliance on OverseerFM outputs as absolute limits for regulatory purposes. For the reasons explained earlier, I consider the One Plan framework relies on Overseer outputs to create absolute limits. Mr Scott's reasoning does not overcome the regulatory limitations and the risk that creates for the PC2 (and One Plan) framework.
- [122] In paragraph 8.27 of his evidence, Mr Scott refers to a 'departure from Overseer as the primary tool' as if that is a matter entirely of Horizons' whim. He recommends that consideration of any such departure should be deferred until the future freshwater planning instrument process. With

uncertainty about the reliability of Overseer in a regulatory context, Horizons has not been confident about proposing a plan framework that relies only on OverseerFM. As earlier noted, even acknowledging the Overseer redevelopment work, MfE advice remains that Overseer outputs should not be used as absolute numbers in regulatory plans.

[123] I do not understand the Council experts to oppose reliance on Overseer as a matter of principle. Horizons was content to rely on Overseer for the DV-PC2, assuming Overseer was accepted as being reliable for that purpose. Table 14.2 has also been retained in the provisions in its recalibrated form.

[124] My view is that, given the fluidity of advice about Overseer, Horizons should maintain an open mind as to the utility of Overseer (as it has done in retaining Table 14.2 in PC2). However, the position remains unsettled in my view and Horizons needs to progress the regulation of unconsented existing IFLU using best information and tools available for the purpose. This is consistent with the purpose of PC2, to provide a workable pathway. I cannot say with confidence that, for the intended regulatory purpose, Overseer currently meets that need.

Precautionary Approach

[125] Mr Carlyon and Mr Scott⁵⁶ consider that none of the proposed alternative consenting pathways are sufficiently precautionary, recognising the sensitivity of the downstream coastal marine receiving environment and NZCPS Policy 3. NZCPS Policy 3 directs the adoption of a 'precautionary approach' towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood but potentially significantly adverse.

[126] Ms Patterson notes that the SIN modelling indicates that the water quality outcomes from implementing PC2 are likely to be at least as precautionary as the recalibrated Table 14.2 in relation to the coastal environment⁵⁷. Mr Carlyon and Mr Scott support the CNLM limits in (recalibrated) Table 14.2. I

⁵⁶ Statement of Evidence of Greg Carlyon (6 November 2023) at 7.40; and Statement of Evidence of Michael Scott (6 November 2023) at 9.17.

⁵⁷ Statement of Reply Evidence of Maree Patterson (13 November 2023) at [15].

take it that they consider these limits to be sufficiently precautionary for the purposes of NZCPS Policy 3. The concern of NZCPS is, ultimately, protection of coastal water quality and coastal values. If the alternatives to Table 14.2 will achieve the same or similar water quality outcomes, these should be seen as being similarly 'precautionary'. I acknowledge that the SIN modelling, and the comparison assessment Dr Snelder undertook between the DV-PC2 and proposed risk assessment pathways, indicate slightly greater mean relative difference for the alternative pathways. However, I also note Dr Snelder's point⁵⁸ that this slight difference is not of practical importance to the environmental characteristics that are affected by river nitrogen levels. In a policy sense, this immaterial difference should in my view be seen as confirming that the alternative pathways are as precautionary as the operative One Plan settings for existing IFLU.

- [127] I also note that Mr Carlyon supports the DV-PC2 framework (which he labels 'Option 3') as providing a suitably precautionary framework in the context of highly degraded water bodies, if the option of the operative One Plan is not available as an option.⁵⁹

Equity between IFLU

- [128] In paragraph 8.43 of his evidence, Mr Scott raises a concern about perceived equity where existing IFLU that achieve consent under the alternative pathways would not have had to work as hard as IFLU that have already taken steps/made changes to meet the Table 14.2 CNLMs. In the same paragraph, Mr Scott suggests that for IFLU with nitrogen leaching levels higher than the Table 14.2 limits, potentially no reductions will be required.
- [129] The DV-PC2 alternative pathways explicitly require reductions for all IFLU that seek to qualify as a controlled activity. Professor Horne's and Dr Jolly's evidence suggests that the risk assessment tool will require substantive nitrogen leaching reductions and the extent of reductions required is,

⁵⁸ Statement of Reply Evidence of Antonius Snelder (13 November 2023) at [15].

⁵⁹ Statement of Evidence of Greg Carlyon (6 November 2023) at 16.11 and 16.12.

anyway, directly connected to the biophysical soil properties and rainfall (being the two key drivers of nitrogen leaching).

- [130] As I understand it, the practices that existing IFLU will be required to adopt to achieve the percentage reductions (under DV-PC2) or the target of 'low' risk (under the risk assessment approach) will be broadly the same practice step-changes as those required to achieve the CNLMs. This is the key point of the proposed alternative pathways: providing a more certain, efficient and practical way of driving the on-farm practice change necessary to achieve the modelled SIN outcomes.

Scope for Risk Assessment Tools

- [131] In paragraph 8.48 of his evidence, Mr Scott questions whether there is scope for the risk amendments now proposed to DV-PC2. I addressed the question of scope in paragraphs 218 to 225 of my Evidence. Mr Scott has not presented reasons why he disagrees with my analysis of scope.

Use of 'practicable', 'reasonably practicable' and 'practicability'

- [132] In paragraphs 8.50 to 8.61 of his evidence, Mr Scott criticises the use in DV-PC2 of the expressions 'practicable', 'reasonably practicable' and 'practicability'. It is his belief that this is a phrase to avoid because it introduces an element of uncertainty. I note that the planners who participated in expert conferencing have supported the uses of these expressions in the amended DV-PC2 provisions.
- [133] In my view the context within which the phrase is used is important and I do not share Mr Scott's view that the expressions, where used in the amended DV-PC2, are inappropriate in their individual and specific context.
- [134] For example, in Policy 5-8 (a) (iia), the risk of nitrogen leaching is required to be reduced to the maximum extent reasonably practicable. The expression was inserted in the DV-PC2, replacing the requirement to 'minimise'. In this context, I consider 'the maximum extent reasonably practicable' is more directive than 'minimise'. The policy intention is clear, in my view that decision makers must demand the maximum extent reasonably practicable.

- [135] In Policy 5-8 (a) (iia) (D), the direction is to have regard to feasibility, practicality and cost of implementing measures to achieve nitrogen leaching limits, alongside the other considerations in Policy 5-8 (iia). There was a lot of discussion in evidence to the Council-level hearing about the appropriateness of considering financial feasibility. Ultimately, the Hearing Panel accepted the view, which I support, that it is appropriate and reasonable to consider the extent to which increasingly disruptive nitrogen leaching mitigations are able to be practically implemented. Mr Scott's concern may have merit in my opinion if this was the sole consideration. However, it is not. It sits alongside a comprehensive suite of other considerations intended to protect environmental values and water quality.
- [136] In Policy 14-6 (c), the word 'impractical' is not inserted by PC2. It exists already in the operative One Plan. Any criticism of it cannot be a criticism of PC2. In any event, I consider that it is appropriate in this context. There are circumstances where it may be impractical to achieve stock exclusion, for example due to topographical constraints.
- [137] In Policy 14-6 (d) (i), the direction to reduce to the maximum reasonably practicable extent and as soon as reasonably practicable replace the former direction to 'reduce nutrient leaching and other contamination progressively over time'. My view is that the proposed amended wording is a more stringent requirement.
- [138] In Policy 14-6 (e) (v), the word 'practicable' is inserted to replace the word 'available'. Together with other changes to the wording of the clause, the direction is that further reductions in nitrogen leaching risk have to be demonstrated to be effective (using farm system modelling, optimisation and analysis of marginal costs and benefits). That is, they have to be more than simply 'available' – they have to be capable of implementation on the farm. That is a logical and sensible amendment, in my view.
- [139] In Policy 14-6 (f) (i), there is a direction to have regard to feasibility, practicality and financial implications of implementing alternative measures (in other words, to consider whether and why other superior measures cannot be implemented). As with my earlier comment, this requirement sits

alongside numerous other considerations intended to protect environmental values and water quality and in my view, is reasonable in that context.

[140] In the definition of 'good management practices', use of the word 'practicable' is appropriate because GMPs have to be capable of being implemented in order to be any use. The same point applies in the definition of 'best management practices'.

[141] Overall, my view is that the amendments inserting reference to 'practicable' and 'maximum extent reasonably practicable' provide stronger direction that IFLU must work hard to minimise nitrogen leaching loss. I consider that the policy intention is clear and unambiguous in each case. I expect there will be, as Mr Scott suggests, some debate for individual applications for consent around the question of financial feasibility and cost practicality. That will be determined on the evidence at the time. In the alternative, if the policies required only that nitrogen leaching be reduced to the maximum extent (i.e. to nil), that would create an too rigid a framework, in my view, and one which few land uses would be able to achieve.

How much nitrogen leaching is too much?

[142] In paragraph 8.68 of his evidence, Mr Scott agrees that the DV-PC2 provisions do provide enough guidance on how to deal with leaching rates but is critical of the fact that these are targeted only at improving farm practice. That approach is logical in my view because the only lever farmers have to manipulate nitrogen leaching is farm practice.

[143] Mr Scott's point is that the DV-PC2 framework does not go far enough in setting an absolute upper limit to nitrogen leaching in excess of the specified Table 14.2 or other alternative thresholds, above which applications for IFLU should be dissuaded and directed to transition to less intensive land uses. This was a point that exercised the planners at conferencing but we did not have an evidential basis for developing a policy that would achieve that specificity. I remain open to the possibility but note that Mr Scott has not proposed a suggestion.

- [144] I do not agree with Mr Scott that there is a lack of guidance about how far over the nitrogen leaching or nitrogen leaching risk thresholds is too much. The amended policy framework explicitly requires consideration of the extent of exceedance of thresholds, the potential contribution from the IFLU relative to cumulative leaching in the catchment, proportionality (in ensuring high nitrogen leaching IFLU make proportionate reductions) and the need for water quality improvement by reference to the difference between current state and the relevant Schedule E water quality targets. Collectively, it is my view that these policies work to inform applications (and their consideration) and require an approach that seeks to minimise exceedances.

Mr Scott's and Mr Carlyon's recommended provisions

- [145] Mr Scott attached to his evidence an annotated version of DV-PC2 showing the amendments he prefers. As I continue to support the risk assessment tool pathways, I do not agree with the amendments Mr Scott has made to revert to the publicly notified versions of most of the PC2 policies.
- [146] Mr Scott has proposed amendments to Policy 14-3.⁶⁰ He states that he supports part of the proposed Horizons wording but has a preference for amended wording at the end of the policy. Mr Scott provides no explanation of why that further amendment is necessary. In the absence of any explanation, I prefer the version of Policy 14-3 that was agreed between the planners at expert conferencing in January and February and at mediation in March this year.
- [147] Mr Scott proposes an additional consideration in Policy 14-6 (considerations when determining whether to enable an existing IFLU to continue):⁶¹

The appropriate length of time to spread the costs of actions and mitigations required to reduce nitrogen loss relative to the scale of the farming business.

⁶⁰ Statement of Evidence of Michael Scott (6 November 2023) at 10.10.

⁶¹ Statement of Evidence of Michael Scott (6 November 2023) at 10.19.

- [148] Mr Scott proposes this consideration instead of the proposed Policy 14-6(f)(i) consideration of feasibility, practicality and financial implications. I consider it would be constructive *in addition to* 14-6 (f) (i).
- [149] Mr Carlyon supports Mr Scott's proposed amendments to DV-PC2. For the reasons explained in this reply, I do not support Mr Scott's preferred retention of the publicly notified rule and policy framework. I have already, however I support some of Mr Scott's suggested refinements (discussed earlier). I have acknowledged Mr Carlyon's support for the DV-PC2 framework (which he labels 'Option 3') as providing a suitably precautionary framework in the context of highly degraded water bodies, if the option of the operative One Plan is not available as an option.⁶² My view remains that, given the current MfE advice, Horizons is discouraged from adopting the DV-PC2 framework, which includes absolute limits based on Overseer outputs.
- [150] At paragraph 15.1 of his evidence, Mr Carlyon attributes the set of amended provisions proposed by Horizons to my authorship. I should correct that – they are not 'my' provisions. The accurate position is that the set of provisions provided to the Court and parties on 22 September 2023 is the set that was amended by the parties at mediation held 15 March 2023 and further amended by agreement between all planners at expert conferencing, following the recommendations of the farm systems experts. In similar vein, Mr Scott attributes improvements to the DV-PC2 provisions to me alone.⁶³ Those improvements arose from the joint efforts of planners and farm systems experts at expert conferencing.⁶⁴

Section 32AA evaluation of appellants' preferred approach

- [151] Mr Carlyon notes that I have not provided a s 32AA assessment of a simple recalibration of the Table 14.2 CNLMs.

⁶² Statement of Evidence of Greg Carlyon (6 November 2023) at 16.11 and 16.12.

⁶³ Statement of Evidence of Michael Scott (6 November 2023) at 12.2.

⁶⁴ Specifically, Sue Ruston (for Horticulture NZ), Gerard Willis (Federated Farmers NZ), Greg Carlyon (for Ngāti Turanga and Fish and Game) and myself (for Horizons) but not including Charlotte Drury or Michael Scott who had not been engaged by parties at that time.

[152] For completeness, I address this 'recalibrated Table 14.2' option here:

- (a) **The extent to which the recalibrated Table 14.2 option is the most appropriate way to achieve the RMA purpose:** Although the recalibration of Table 14.2 addresses one aspect of the problem statement, it does not address the policy obstacle I earlier described. In this respect, this option would continue the failure of the current One Plan provisions to achieve the Act's purpose.
- (b) **The extent to which the provisions are the most appropriate to achieve the objectives of PC2:** The purpose of PC2 was explicitly to address the policy obstacle and create a workable consenting framework. This option fails to achieve that in my view because it makes no attempt to improve the policies or the rules.
- (c) **The extent to which the provisions give effect to the RPS and are the most appropriate way to achieve the relevant One Plan objectives:** Failure to address the framework of policies and rules means that this option perpetuates the policy obstacle that is preventing the regulation of existing IFLU and preventing achievement of the relevant One Plan objectives.
- (d) **Efficiency and effectiveness:** For the reasons stated in (a) to (c) above, this option will not be effective in regulating existing IFLU. It does nothing to address the uncertainty about the consenting pathway and will not address the current lack of confidence in the One Plan consenting framework. In this sense, the option will continue the inefficiencies that PC2 is trying to fix.
- (e) **Environmental, economic, social, cultural benefits and costs:** Because this option does nothing to address the uncertainty in the One Plan policy and consenting framework, it performs poorly in terms of achieving environmental (water quality), economic, social and cultural benefits. It will simply entrench current water quality degradation and continue to suppress the economic, social and cultural benefits that could be realised by the alternative consenting pathways.

- (f) **Opportunities for economic growth and employment:** As with the other options, the evidence suggests that regional-scale economic impacts will be largely neutral. As noted on page 108 of my Evidence, Mr Mayes' evidence confirms that the farm scale economic outcomes are better for the options that provide a workable consenting pathway than strict compliance with Table 14.2.
- (g) **Risk:** This option is essentially the status quo operative One Plan without addressing the acknowledged policy and consenting obstacles. The risks of adopting this option are playing out currently: uncertainty in ability to regulate existing IFLU, entrenched water quality degradation and suppressed economic benefits.
- (h) **Will the provisions assist in giving effect to Council's s 30 functions:** By not addressing the policy and consenting pathway obstacles, this option will not be as effective in assisting the Council's s 30 functions as the alternative consenting pathways.
- (i) **Will the provisions give effect to the NPS-FM and NZCPS:** Because this option does not address the fundamental issues in the operative One Plan framework, it will perpetuate plan provisions that are unworkable and unimplementable. In this way, the option cannot give effect to the higher order policy instruments.

F. RESPONSE TO HORTICULTURE NZ EVIDENCE

[153] Since receiving the statements of evidence on behalf of Horticulture NZ on 13 October 2023 and before finalising this reply, I had a telephone discussion with Dr Drury about the amendments she proposes to amended DV-PC2, to discuss the rationale for some of her proposed amendments. I respond to Dr Dury's evidence, along with that of Ms Sands, Mr Clarke and Mr Barber below.

Crop Rotation

[154] In paragraphs 38 to 47 of her evidence, Ms Sands presents a useful discussion of the importance of crop rotation in commercial vegetable

growing. The importance of crop rotation was one of the matters raised by growers at the pre-hearing meetings held before the Council-level hearing and I recommended amendments to the PC2 provisions to ensure it is provided for.⁶⁵ Dr Drury has proposed some amendments to the definition of the PC2 definition of 'crop rotation' which Mr Barber supports. I understand that Dr Jolly also supports the amendments with the exception of the reference to 'changing land parcels'. I agree with Dr Jolly that this reference should be removed to avoid confusion about what is 'crop rotation' and what is CVG expansion. To the extent that they can be considered to be within the scope of amendments necessary to support the proposed CVG risk assessment tool, I support the amended definition, with the following additional refinement highlighted in yellow shading:

Crop Rotation is the systematic planting of different crops in sequence over multiple years within the same growing space, or across ~~changing the~~ land parcels **comprised in the baseline commercial growing area**, and often includes a pasture phase. This process helps maintain nutrients in the soil, reduce soil erosion, and prevents plant diseases and pests.

CVG Expansion

- [155] One of the issues addressed in the Statements of Evidence of Ms Sands and Dr Drury is how expansion of commercial vegetable growing is accommodated by the One Plan.⁶⁶ Horticulture NZ's submission on PC2 requested provisions to accommodate CVG expansion. CVG expansion would be considered 'new' IFLU under the One Plan.
- [156] PC2 has only ever been about refining the plan settings for existing IFLU and on that basis I did not support the requested amendments to provide for CVG expansion. The Hearing Panel agreed and I understood that Ms Sands and Horticulture NZ were content with that outcome (and this is reflected in the fact that Horticulture NZ's s 274 notices unreservedly support the DV-

⁶⁵ I understood from Horticulture NZ's s 274 notices that it supported those amendments.

⁶⁶ Statement of Evidence of Michelle Sands (13 October 2023) at 48–54 and 90; and Statement of Evidence of Charlotte Drury (13 October 2023) at 11–12.

PC2). Both Ms Sands and Dr Drury recognise that the scope of PC2 is limited and does not allow for additional provisions facilitating CVG expansion. Ms Sands and Dr Drury acknowledge that these matters will have to be dealt with in the NPS-FM freshwater planning instrument.

[157] I acknowledge that neither Ms Sands nor Dr Drury has proposed any amendments to DV-PC2 to address CVG expansion.

[158] What I can say, as someone working with Horizons on its Oranga Wai freshwater planning instrument project, is that Horizons is aware of the issues Ms Sands raises in relation to CVG expansion and the importance of food security. The Horowhenua growing area is identified by the NPS-FM as one of only two specified vegetable growing areas in New Zealand and the Horizons team is aware of the significance of the issues at play. I understand that there have been initial discussions between Horizons and Horticulture NZ about how the issues might be addressed in the One Plan. Many more discussions have yet to happen, with Horticulture NZ and with the communities of interest in the region, about how the One Plan manages the environmental effects of CVG and the issues discussed in Ms Sands' evidence.⁶⁷ I note Ms Sands' point in paragraph 120 of her evidence that *"to the degree that PC2 can, it should develop provisions that do not frustrate the clear intention of future national policy to enable vegetable growing"*. I do not understand Ms Sands to be suggesting that PC2 frustrates this outcome, but for completeness, I do not consider that DV-PC2 or the proposed amended DV-PC2 (with the CVG risk tool) thwart that outcome in any way.

[159] I note Ms Sands' point at paragraph 90 of her evidence that two matters can be achieved in PC2 by clarifying that:

- (a) Crop rotation can be achieved through a hybrid land use consent; and
- (b) There must be viable consenting pathways for all vegetable crops.

⁶⁷ Statement of Evidence of Michelle Sands (13 October 2023) at 48–90.

- [160] On the first point above, Rules 14-1, 14-2 and 14-2A of DV-PC2 are hybrid land use and discharge rules. They explicitly capture both the IFLU land use and associated discharges. I also note Mr Barber's opinion, restated in Ms Sands' paragraph 94, that a 35% reduction in nitrogen leaching loss is achievable through the implementation of GMPs and BMPs that are available to growers and that the CVG risk assessment tool will drive growers to make these reductions. This is consistent with the evidence of Dr Jolly on the types of practices and related reductions available to growers. I also consider the proposed CVG risk assessment pathway is a viable pathway for existing CVG in the targeted water management subzones.
- [161] On the second point, my view remains that DV-PC2 provides viable consenting pathways for existing CVG in the targeted water management subzones (acknowledging the limitations of Overseer). Further work needs to be done on the future freshwater planning instrument before addressing consenting pathways for new and expanded CVG.

FMU-Scale Crop Rotation

- [162] In paragraphs 34 to 38 of her evidence, Dr Drury proposes approach that manages shifts and changes in the location and geographic extent of CVG within a sub-zone against a specified geographic area, to provide more flexibly for crop rotation. That differs substantially from the PC2 approach that requires the establishment for each IFLU of a 'baseline commercial growing area'.
- [163] The DV-PC2 definition intentionally requires that the 'baseline commercial growing area' must represent the area utilised for commercial vegetable production in the 2012/2013 growing season. The definition includes all land, including leased land, under the control of the grower or enterprise but the land must be *utilised for commercial vegetable production* (i.e. not land owned or leased by the grower that is in pastoral or other use that has never been part of CVG rotation). The definition attaches the baseline commercial growing area (and therefore any consent) to a specific site or sites.

- [164] Dr Drury's proposition would allow CVG crops to 'float' within the sub-zone (or between sub-zones) between different sites. For the purposes of PC2, Dr Drury's approach would potentially involve expansion into 'new' CVG areas. Dr Drury recognises this (at paragraph 38) and acknowledges that it should be considered in a future plan change.
- [165] I am mindful that shifting CVG onto sites in different sub-catchments that have not previously been used for CVG may introduce diffuse discharge effects not previously experienced in the sub-catchment which may affect different receiving environments in different ways. My initial view is that some care will be needed in developing a framework to accommodate Dr Drury's suggestion in a manner that can still achieve the relevant one Plan and NPS-FM objectives. As Dr Dury identifies, these are discussions that will need to occur as part of the freshwater planning process, and I do not support making any change to this effect at this time.

Definition of 'Productive Area'

- [166] In paragraph 39 of her evidence, Dr Drury proposes refinements to the definition of 'productive area' contained in the definitions (Part B) in Schedule Y of the proposed PC2 provisions. I understand that Dr Jolly supports those amendments.
- [167] I note that one of the amendments deletes the wording '*While the total land area cannot increase without consent, and the location of leased land may change from year to year. The level of risk on the all leased land must be assessed and must not increase the overall risk level*'. I support that deletion because reference to locations changing year to year confuses the matter in terms of the catchment-scale crop rotation discussed above. The proposed wording is better aligned with the site-specific baseline commercial growing area intended by PC2. The only amendment I would suggest is to keep the expression 'for *longer* than 2 years' (rather than for '*greater* than' 2 years):

Productive Area: ~~means the total productive vegetable growing area within the boundaries of the land (boundary to boundary).~~
 This The area denominator in 1(a) and 1(b) is an operation's total productive vegetable growing area. This includes both owned and

leased land. Productive area is all the area within the boundaries of ~~the total~~ productive vegetable growing area. ~~within the boundaries of the land~~ (boundary to boundary). This includes the block or paddock total area where the crop is grown, including wheel tracks and beds that are not cropped, as well as headlands and races. ~~This includes both owned and leased land. While the total land area cannot increase without consent, and the location of leased land may change from year to year. The level of risk on the all leased land must be assessed and must not increase the overall risk level.~~ Productive area does not include the land occupied by buildings and yards. Productive vegetable growing area does not include areas that cannot be cropped such as bush blocks of indigenous* vegetation, nor does it include permanent pasture (being land in pasture grown for greater for longer than 2 years).

Why PC2 is important for CVG

- [168] I acknowledge the evidence of John Clarke included in Attachment B to the Ms Sands' evidence. Mr Clarke's statement provides a useful discussion of the realities of vegetable growing and the reasons why the operative One Plan consent pathway for CVG is not workable and the potential implications if the provisions are not addressed through PC2.

Policy 14-3

- [169] In paragraph 22 of her evidence, Dr Drury proposes an amendment to Policy 14-3 to only require the imposition of additional measures (in addition to GMP) where necessary. I do not agree the amendment Dr Drury proposes is necessary. That is because, when one reads the entire policy, it requires the implementation of GMP and additional measures *to the extent that* those GMPs and measures address the relevant matters. My view is that the caveat Dr Drury is seeking (i.e. only where necessary) is already provided for in the wording:

~~'Policy 14-3: Industry-based standards Good management practices'~~

When making decisions on resource consent[^] applications, and setting consent conditions, for activities affecting groundwater and surface water[^] quality, ~~The~~ Regional Council must require the implementation of ~~have regard to~~ good management practices, and additional measures to reduce ~~for decreasing~~ nitrogen leaching, will examine on an on-going basis relevant industry-based standards (including guidelines and codes of practice), recognising that such industry based standards generally represent current best practice, and may accept compliance with those standards as being adequate to avoid, remedy or mitigate adverse effects[^] to the extent that those standards good management practices* and measures address the matters in Policies 14-1, 14-2, 14-4, ~~and~~ 14-5 and 14-6 and contribute to decreasing contaminant loads in the relevant water management sub-zone*.*

- [170] The second point I would make is that Policy 14-3 is not just about CVG. It applies to all decision making on applications that affect groundwater and surface water.

Baseline Commercial Growing Area

- [171] In paragraph 23 of her evidence, Dr Drury raises a point about the presence of two threshold dates in the PC2 framework and the potential for confusion or conflict between the two. There are two dates. However, they have different purposes. There is a date in Table 14.1 that establishes the point in time before which an IFLU is deemed to be 'existing' and after which the IFLU is deemed to be 'new'. There is also a 'baseline growing period' defined in PC2 (being the 2012/2013 growing season). This was originally inserted to support the 35% N leaching loss reduction pathway. The baseline year was set the same for pastoral and CVG IFLU (2012/2013). It remains relevant because PC2 intends that, to qualify for controlled activity consent, the area of existing CVG must not exceed the area of commercial vegetable growing of the baseline growing period.
- [172] I do not consider the two dates are problematic, given their different purposes. It is not a simple matter of swapping one for the other: one is a single date (a single point in time) and the other is a period of time (a 12-

month growing season). So, it would take a bit of work to rationalise them., and I do not consider it necessary or helpful to do so at this time.

[173] One reason why the 2012/2013 was settled on (as opposed to a later date closer to the PC2 hearing date) was that Horizons did not want to legitimise or authorise as 'existing' expanded CVG that was known to have occurred since 2012/2013 (aligning with the SIN modelling baseline).

[174] Dr Drury has spotted an error in the use of the expression 'baseline commercial growing area'. In Rule 14-1 (d) (iii) and in Policy 14-6 (f) it has been (unintentionally) abbreviated to 'baseline growing area'. It should be changed to the full expression ('baseline commercial growing area') in both instances. I agree, and consider that correction to be a minor amendment.

[175] Mr Barber includes in an attachment to his evidence the proposed CVG risk assessment tool. In the definitions (Part B) of that attachment, Mr Barber includes two definitions of 'baseline commercial growing area'. It appears to be an error. For the record, I do not support the first definition ('Baseline Commercial Growing Area cannot increase under an existing consent, the location of leased land may change from year to year. The level of risk on the swapped lease land must be assessed and must not increase the overall risk level'). These words appear to be those deleted from the definition of 'productive area' (discussed above) and I do not support the regime they propose.

Definition of Nutrient Management Plan

[176] In paragraph 29 of her evidence, Dr Drury proposes some minor amendments to the definition of 'nutrient management plan'. I understand that Dr Jolly supports these amendments and I consider them to be minor. On that basis, I support those amendments.

Definition of Enterprise

[177] In paragraph 33 of her evidence, Dr Drury suggests some amendments to the definition of 'enterprise', which I understand Dr Jolly also supports. The definition of 'enterprise' that was inserted in DV-PC2 was supplied by the

vegetable growing sector representatives. However, I accept that definitions evolve and noting Dr Jolly's support for the amendments I endorse those amendments.

G. RESPONSE TO ELIZABETH PARLATO

PC2 purpose

[178] Dr Parlato continues a theme in Mr Carlyon' and Mr Scott's statements of evidence (in paragraph 6.1.2 of her evidence) that the PC2 policy amendments were to provide improved policy support for 'consenting IFLU if they were unable to meet the Table 14.2 CNLM limits'.

[179] However, it is more accurate to say that the policy amendments were intended to improve the clarity and rigour for considering and determining (not necessarily always 'consenting' and potentially also declining consent) applications for IFLU that cannot meet the Table 14.2 CNLM limits.

Scenario modelling

[180] In paragraph 6.22 of her evidence, Dr Parlato states that the SIN scenario modelling assumed an average reduction from 2012 leaching rates for all farms (irrespective of whether they currently hold a consent or not). My understanding is that the scenarios modelled assumed the actual authorised nitrogen leaching rates for all consented IFLU (and that is explained in the summary report attached to Dr Snelder's evidence).⁶⁸ This incorrect assumption is repeated in paragraph 6.27 of Dr Parlato's evidence.

Modelling uncertainty

[181] At paragraph 6.35 of her evidence, Dr Parlato concludes that it is uncertain whether there will be detectable improvements to water quality in the target catchments resulting from implementation of the risk assessment tool. Dr Snelder has explained why Dr Parlato's conclusion is incorrect. Dr Snelder has been consistently candid in his evidence to the Council-level hearing and again in these proceedings:⁶⁹ there will be water quality

⁶⁸ Statement of Evidence of Antonius Snelder (6 October 2023) at Attachment A.

⁶⁹ Statement of Evidence of Dr Antonius Snelder (6 October 2023) at [22].

improvements associated with implementing either the DV-PC2 or proposed risk assessment tool provisions of PC2 but they will be modest.

- [182] Dr Parlato's conclusion seems to be an argument for 'doing nothing' (reflected in Mr Carlyon's preferred course of only recalibrating Table 14.2). I do not agree that is appropriate for the reasons I have already explained (continued inability to implement the One Plan, entrenching current water quality degradation, and perpetuating the well described disbenefits).

Pastoral risk assessment scorecard: plantain and wetlands

- [183] Dr Parlato has helpfully identified unintended errors in the way plantain and wetland mitigations are represented in the pastoral risk scorecard. I agree these should be corrected. I have not been able, in the time available since receiving Dr Parlato's evidence, to confirm the agreed wording of the relevant farm systems experts. My intention is to do that as soon as practicable before the hearing commences.

Water quality improvements

- [184] In the final paragraph of the conclusion of her evidence, Dr Parlato states that:

it is feasible that implement of the risk assessment tool will start to bring about water quality improvements in line with the objectives of the One Plan. However, whether the risk assessment tool will achieve this outcome is highly uncertain on the basis of currently available information.

These words convey the impression that the regulation of existing IFLU is expected to achieve the One Plan water quality objectives.

- [185] For the reasons I have earlier explained,⁷⁰ that was never the intention of the One Plan or PC2 and is not a reason to oppose PC2. The quantum of the improvement attributable may be modest but I agree with Dr Parlato that any of the alternative PC2 controlled activity pathways will start to bring

⁷⁰ Statement of Evidence of Ms Patterson (6 October 2023) at Attachment C.

about water quality improvement. My recommendation is that the ability to secure that improvement should be facilitated and not further obstructed.

H. CORRECTIONS IN HORIZONS PROPOSED PC2 PROVISIONS

[186] I would like to take the opportunity to correct two omissions from the version of PC2 proposed to the Court and parties:

- (a) The farm systems experts considered whether to include irrigation as a management practice in the pastoral risk assessment tool. Their conclusion was that irrigation practices are better addressed in a rule or other appropriate planning provision.⁷¹ The planners agreed at expert conferencing held on 16 May 2023 that irrigation method should be added to the Rule 14-1 reserved matters.⁷² This amendment was inadvertently omitted from Rule 14-1, which should read as follows:⁷³

Control is reserved over:

(a) the contents, implementation and review of the nutrient management plan* for the land^

(b) irrigation method (where the existing intensive farming land^ use involves irrigation) compliance with the cumulative nitrogen leaching maximum* specified in Table 14.2 the nitrogen leaching loss from the land^ and the good management practices* and best management practices* (and additional measures where necessary) to limit

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⁷¹ As recorded in the written record of a meeting of pastoral systems experts (21 April 2023).

⁷² Being Sue Ruston (for Horticulture NZ), Gerard Willis (Federated Farmers NZ), Greg Carlyon (for Ngāti Turanga and Fish and Game) and myself (for Horizons) but not including Charlotte Drury or Michael Scott who had not been engaged by parties at that time.

⁷³ Joint Witness Statement of Planning Experts (16 May 2023) at 11.

nitrogen leaching loss from the land^ to the rate specified in condition (d) and to avoid, remedy or mitigate nutrient leaching and run-off, faecal contamination and sediment losses from the land^

(c) ...'

- (b) Rule 14-2 requires restricted discretionary activity consent for existing IFLU that do not comply with the Rule 14-1 standards for matters other than nitrogen management. That is, all standards other than those set out in Rule 14-1 conditions (a) to (d). The '(d)' was omitted from the version proposed to the Court and parties.⁷⁴ Rule 14-2 should read:

The use of land^ pursuant to s9(2) RMA for any of the following intensive farming:

(i) dairy farming*

(ii) commercial vegetable growing*

(iii) cropping*

(iv) intensive sheep and beef farming*

that was existing in *the Water Management Sub-zones** listed in and from the dates specified in Table 14.1, and any of the following *discharges*^ pursuant to ss15(1) or 15(2A) RMA associated with intensive farming, that do not comply with one or more of the *conditions*^, standards and terms of Rule 14-1 (except for (a), (b), ~~or~~ (c) or (d)): ...'

- (c) I notice that there is a duplicated numbering error in Policy 14-6 f) which should be corrected.

[187] My intention is to supply to the Court and parties a revised version of PC2 that includes the amendments discussed above. I note the intention of some parties to present reply evidence. My preference is to finalise the revised

⁷⁴ Statement of Evidence of Michael Scott (6 October 2023) at Attachment A.

version of PC2 once I have had an opportunity to review any reply evidence submitted by the parties.

I. CONCLUSION

[188] Subject to reviewing any other reply evidence, my conclusion remains that the proposed version of PC2, incorporating the proposed pastoral and CVG risk assessment approaches, at this time represents the most appropriate way of achieving the purpose of PC2, the relevant One Plan objectives, the higher order policy instruments and the sustainable management purpose of the Act.

13 November 2023

Christine Foster

J. ATTACHMENTS

ATTACHMENT A – INFORMATION RELIED ON

1. Supplementary Statement to the Environment Court in support of Horizons One Plan by Jon Roygard and Maree Clark (now Maree Patterson) on Nutrient Load Scenarios and Methodology (dated 24 February 2012);
2. The decisions of the Environment Court on appeals against the Decisions Version One Plan and, in particular, Part 5 Surface Water Quality – Non-Point Source Discharge (dated 30 August 2012);
3. The decision of the High Court ([2013] NZHC 2492) on an appeal by Horticulture New Zealand and Federated Farmers of New Zealand Inc. against the Environment Court’s decision on the One Plan;
4. The decision of the Environment Court ([2017] NZENVC 37 dated 21 March 2017) on an application for declarations by Wellington Fish and Game Council and Environmental Defence Society Inc. (on the application by Horizons of the One Plan’s provisions relating to IFLU);
5. The s 32 Evaluation Report on proposed PC2 (dated July 2019);
6. The publicly notified Proposed Plan Change 2;
7. All submissions and further submission lodged on proposed Plan Change 2
8. The report ‘Manawatū-Whanganui Region Catchment Nitrogen Models’ supporting PC2 prepared by Land Water People (dated July 2020);
9. The joint witness statements of technical experts resulting from expert conferencing of the water quality, farm systems (pastoral and commercial vegetable growing), macro-economics, farm-scale economics, iwi, and planning experts that occurred prior to the Council-level hearing;
10. The s 42A reports and supplementary statements presented to the PC2 Hearings Panel by Dr Nic Peet (the then Horizons Group Manager Strategy and Regulation) and Horizons’ technical experts:
 - Abby Matthews (Water Quality Scientist and Horizons Manager Science and Innovation);

- Antonius Snelder (Water Quality Scientist);
 - Tim Cox (Water Resources Engineer and scenario modeller);
 - David Horne (then Associate Professor, Massey University, specialising in soil science and nutrient management);
 - James Hanly (Senior Lecturer, Massey, specialising in soil fertility and nutrient management in agriculture and horticulture and the impact of overseer version changes);
 - Anne-Maree Jolly (Rural Environment Consultant specialising in soil and nutrient management);
 - Terry Parminter (Rural Agricultural Consultant);
 - Stephen McNally (Primary Industries Consultant);
 - Peter Clough (Economist);
 - Heather Collins (Rural Social Scientist specialising in social Impact assessment);
11. All written evidence presented to the Council-level PC2 hearing (in addition to attending or observing by audio visual link the entirety of the PC2 hearing);
 12. The report and recommendation of the Independent Hearing Panel on Plan Change 2 (dated March 2021);
 13. The notices of appeal against Horizons decision on Plan Change 2 and the related s 274 notices;
 14. The joint witness statements by farm systems and planning experts resulting from the expert conferencing sessions held 28 June 2022, 25 August 2022, 7 October 2022, 3 February 2023, 24 February 2023, 13 March 2023, 15 March 2023, 31 March 2023, and 10 May 2023;
 15. The statements of evidence in chief on behalf of Horizons prepared by:
 - Elizabeth Daly;

- Maree Patterson;
 - Antonius Snelder;
 - Tim Cox;
 - James Hanly;
 - Anne-Maree Jolly;
 - David Horne;
 - Paul le Miere;
 - Heather Collins;
 - Kerry Mayes;
16. The statements of evidence of Murray Holdaway and Aaron Passey on behalf of Federated Farmers of New Zealand (dated 13 October 2023);
 17. The statements of evidence of Michelle Sands, John Clarke, Ellery Tappin, Andrew Barber, Stuart Ford and Charlotte Drury on behalf of Horticulture New Zealand (dated 13 October 2023);
 18. The statements of evidence of Andrew Day and Michael Scott on behalf of appellant Andrew Day (dated 6 November 2023);
 19. The statements of evidence of Elizabeth Parlato and Greg Carlyon on behalf of Wellington Fish and Game Council and Ngāti Turanga (dated 6 November 2023);
 20. The statements of evidence of Alec Mackay and Alison Dewes on behalf of Wellington Fish and Game Council (dated 6 November 2023);
 21. The statement of evidence of Hayden Turoa for Ngāti Turanga (dated 6 November 2023);
 22. The reply statements on behalf of Horizons prepared by:
 - Elizabeth Daly;

- Maree Patterson;
- Antonius Snelder;
- Anne-Maree Jolly;
- David Horne;
- Paul le Miere.

