

BEFORE INDEPENDENT HEARING COMMISSIONERS

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

Proposed Waikato Regional Plan Change 1:
Waikato and Waipa River Catchment

**CLOSING STATEMENT FROM JUSTINE YOUNG
FOR DAIRYNZ LIMITED
26 SEPTEMBER 2019**

SUBMITTER 74050



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Introduction

- 1 My full name is Justine Young. I have the qualifications and experience set out in my evidence to Block 1 of hearings for Waikato Regional Council Proposed Plan Change 1:Waikato and Waipa River Catchments (**PC1**).

Scope of this statement

- 2 I have been asked by DairyNZ to provide a closing statement. In the minute from the Hearings Panel dated 4 July 2019, I note that the purpose is to respond to any legal submissions and/or evidence that they have not had an opportunity to respond to. If it is relevant to the Panel, I note that I summarised key aspects from expert evidence from DairyNZ in the beginning of my Block 3 evidence.
- 3 In this statement I will cover key points:
 - a) related to water quality expert conferencing on Table 3.11-1 that Dr Craig Depree noted were unclear in the Joint Witness Statement (**JWS**) and on the day it was presented to the Panel
 - b) about the considerable and variable impact on dairy farmers which were covered by Dr Graeme Doole and Dr Bruce Thorrold for DairyNZ
 - c) responding to questions from the Panel at Block 3 hearings to DairyNZ, and subsequent work with Federated Farmers, Miraka and Fonterra, on the topics of Farm Environment Plans (FEPs), rule categories and Certified Industry Schemes.

Table 3.11-1 Joint Witness Statement

- 4 In Block 1, DairyNZ expert evidence focused on reasons for supporting the technical underpinning of PC1. Water quality scientist Dr Craig Depree was asked by DairyNZ to assess the adequacy of the water quality approach in the development of PC1. Dr Depree was involved in the expert conferencing for Table 3.11-1 and was part of the sub-groups for nutrients and clarity.
- 5 DairyNZ also provided evidence on the planning implications of the JWS concluding that:
 - a. The nutrient subgroup approach 1c) for Total Nitrogen, and approach 2c) for mainstem Total Phosphorus, and an update for E.coli, are all changes recommended in the JWS that are appropriate because they are within the

scope of PC1, do not alter environmental outcome sought and improve future reporting of water quality.

- b. The riparian and fish attribute changes recommended in the JWS, were outside the scope of PC1 and should be set aside for consideration in the upcoming council regional plan review, and for future plan changes in Waikato River catchment.
- c. A range of changes recommended in the JWS, are related to the four contaminants (other nutrient approaches, periphyton, sediment, dissolved oxygen, MCI), but they may not be sufficiently robust to be applied to the Waikato River catchment at this point.

6 On 18 July 2019, Dr Depree presented on behalf of the nutrient sub group JWS Expert Conferencing Table 3.11-1 (dated 17 June 2019). His reflection was that there are some aspects of the JWS were put forward after little scrutiny from other experts. On the day the JWS was presented, it was not appropriate for other experts to interject. For that reason, Dr Depree has reiterated his reasons for supporting each approach as follows:

- a. Support for revised TN numbers in approach 1C to correct for errors in lake classification (polymictic vs seasonally stratified);
- b. Support for the revised TP threshold derived from relationships between chl_a and TP in approach 2C;
- c. Support for the option for addressing toxicity: A band for mainstem; B band for tributaries with the condition of no degradation. This will address the inequality associated with the band improvement requirement (which can create inconsistent outcomes where catchments in a lower band proportionally improve less than catchments with better water quality.
- d. Recommendation for inclusion of Karapiro as a mainstem monitoring site to ensure that accurate measurement contaminants from the upper FMU are not attributed to the middle FMU
- e. Recommendation that WRC macroinvertebrate attribute monitoring needs to be based on MCI (not QMCI), which is consistent with Ministry for the Environment document “A user’s guide for the macroinvertebrate community index” (Stark and Maxted; 2007). In this report, the authors make the following recommendation for indices for SoE monitoring: “*We believe that the MCI are the best biotic indices for state of the environment monitoring are reporting, and that the SQMCI and QMCI should not be used for SoE reporting*”. QMCI is more “susceptible to changes arising as a result of when

samples were collected and are therefore an artefact of sampling regime rather than a true measure of stream health” (Stark and Maxted; 2007).

Loads versus concentrations

- 7 A question was raised by the Panel as to whether a load amount is more helpful for PC1 implementation than the existing approach in Table 3.11-1, that refers to concentrations. For instance, when assessing actions in a FEP, is a sub catchment load in tonnes of phosphorus, any more helpful than the TP main stem concentrations in Table 3.11-1?
- 8 In listening to questions put to other witnesses in Block 3, Dr Depree notes that loads are not necessarily more tangible or meaningful to people. Concentrations, on the other hand, are helpful in measuring progress of PC1. They are widely used, for instance:
 - a. Thresholds are based on concentrations;
 - b. Attributes are measured with concentrations;
 - c. Reports on the state of the environment use concentrations.
 - d. Environmental effects occur as a result of concentrations: i.e. phytoplankton are affected by concentrations, not loads; and
 - e. When people observe a turbid stream, they see a suspended sediment concentration, not a load.
- 9 Given that thresholds and targets are concentrations, the method for translating the concentration thresholds into load thresholds for each sub catchment is unclear. A single concentration-based threshold would need to be transformed into 72 different load-based thresholds at the sub catchment scale, to compare current load states against a threshold load. Transforming concentration into loads is complex and introduces uncertainty. Converting median instream concentration thresholds to loads is particularly problematic, according to Dr Depree.

10 In summary, DairyNZ's conclusion is that the current concentration thresholds and target structure within PC1 can adequately measure progress by comparing measured instream concentrations with threshold concentrations.

Impact on dairy farmers of PC1 and alternatives proposed by submitters

11 DairyNZ's key concern throughout this hearing, has been that provisions in PC1 can be implemented by dairy farmers, to make a start on achieving the Vision and Strategy.

12 The economics and farm systems expert evidence from Dr Graeme Doole and Dr Bruce Thorrold focused on the implications to dairy farmers of nitrogen reductions, and set out factors that support a gradual transition proposed in PC1, supported by evidence drawn from their research experience. In Dr Thorrold's case, his primary evidence and rebuttal evidence drew on his involvement in national research and strategy discussions that take into account proven versus promising innovation, with farmers needing to choose mitigations for water quality reasons, as well as animal welfare and greenhouse gas management.

13 Both Dr Doole and Thorrold rebutted evidence from Beef and Lamb NZ experts who made claims about the relative ease of nitrogen reductions for dairy farmers, and that additional allowance of nitrogen for dry stock farmers was essential.

Land use change and lessons from Whatawhata Research Station

14 Dr Thorrold drew on his experience as Project Leader for an Integrated Catchment Management project on the Whatawhata Hill Country Research Station near Hamilton, that sought to apply a multi-discipline approach to achieving 'a well-managed rural hill country catchment'. This evidence is important to consider in light of some submitters narrow focus on nitrogen, or unsubstantiated claims that on-farm change is simple and should only apply to dairy farmers.

15 Dr Thorrold's overall view of the Whatawhata results, in the context of Healthy Rivers, four contaminants and a carbon neutral economy, is that the land use change implemented on this sheep and beef farm has shown significant gains in many of the indicators. In his opinion (Block 2 rebuttal paragraph 11):

- a. sheep and beef farmers do not require increases in N allocation to have land use flexibility and economic viability
- b. it is possible to implement changes on sheep and beef farms that make significant gains in water quality
- c. the capital required to support this change is significant, indicating the need for both time and potentially external funding.

Economic costs and PC1

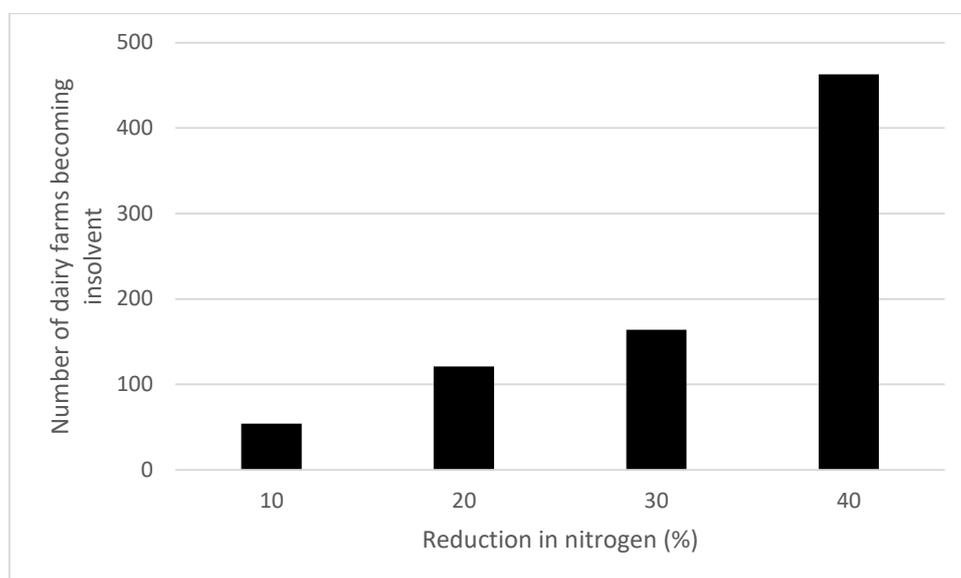
16 In his evidence Dr Doole noted that the dairy sector, at a farm-level and flow on impacts to a regional level, will bear most of the economic impact of PC1. Overall contaminant loads arising from different land use sectors in the Waikato River catchment were established at the outset of the PC1 process. Dr Doole's Block 2 evidence (paragraph 2.2), notes that the sheep and beef sector is responsible for generating more *E. coli*, phosphorus, and sediment relative to the dairy sector.

17 The dairy sector is a key part of the economy. If PC1 is amended to require greater reductions in contaminant loss in this sector, it will have major economic implications both in the dairy sector and in related industries, as evaluated by McDonald and Doole (2016) at the freshwater management unit, regional, and national scale.

18 At a farm-level, DairyNZ modelled 'average' farms is deemed to be representative of a certain type of Waikato dairy farm (DairyNZ Economics Group, 2014). This approach is consistent with standard modelling practice (Doole, 2015; Doole et al., 2016c). Importantly, Dr Doole pointed out that the consideration of average effects serves to dampen the impacts that affect some members of the population in disproportionate ways. He backed this up with data after considering the impact of increased abatement costs on the capacity of dairy farms in the catchment to service debt (Block 2 evidence in chief, sections 6 and 7). Falls in operating profit linked to reductions in nitrogen leaching, reduced the capacity of different farms to service their annual debt payments. This conclusion was shown in the following bar graph (paragraph 7.5):

Excerpt from Dr Doole’s evidence in chief Block 2 paragraph 7.5.

Figure 8. Impacts on reductions in nitrogen on the number of dairy farms becoming insolvent in the Waikato River catchment



19 In conclusion, DairyNZ’s response to various submitters who have suggested that PC1 does not go far enough, fast enough, is:

- a. Higher levels of nitrogen abatement than the reductions already set out in PC1, will incur a substantially greater cost on the dairy sector, impacting profitability and the ability for the dairy sector to service debt repayments.
- b. The distribution of economic impacts within the dairy sector is broader than that estimated within modelling assessments. This means that the impacts of policy will be disproportionately felt across the dairy sector. Higher levels of abatement will place greater financial risk on farmers who have invested in assets prior to the notification of PC1.

Farm Environment Plans, Certified Industry Schemes and new Schedule 1A

20 Farm Environment Plans with policies, rules and schedules providing as much guidance and certainty to farmers as possible, are essential to the success of PC1.

21 In preparing evidence on FEPs, DairyNZ, Miraka, Fonterra and Federated Farmers have had several attempts at improving the certainty of permitted activity Rule

3.11.5.3 and the associated FEP Schedule. While the first attempt in DairyNZ Block 3 evidence had merit, as set out below, DairyNZ prefers the amended Schedule 1A that Fonterra and Federated Farmers attach to their closing submissions. DairyNZ has not attached its own Schedule 1A, as farm systems experts have not had time to fully assess the implications of new numerical standards that could apply as part of a permitted activity Rule 3.11.5.3.

- 22 While good progress has been made through co-operation across some parties, the FEP Schedule standards would benefit from further work and inclusion of other submitters and their experts.

Ensuring success of the FEP approach

- 23 The rule framework as notified contains a permitted activity for landowners who wish to join a certified industry scheme and a controlled activity for those who choose to go through the regional council consent pathway (Rules 3.11.5.3 and 3.11.5.4 respectively of the notified version of PC1).
- 24 DairyNZ's submission requested greater guidance for farmers on what was expected in a FEP. Schedule 1 as notified in PC1, refers to reducing the risk of diffuse contaminants from farming, but the question might be "how much risk do I reduce, all of it or some of it?" The reference in Schedule 1 (2) to assessing farm-level risks against short term water quality concentrations in sub catchments¹, added to the confusion, because there is no easy way for a landowner or council officer, to know the quantity or timing of the water quality improvement from a set of farm mitigation actions.
- 25 In my Block 3 evidence I supported the council implementation team approach that takes the Canterbury approach a step further. That approach is based on GFP and farm actions that are carried out and graded upon audit. The additions are a requirement for a certified FEP advisor to work with the farmers using the 2018 Good Farming Principles, and a compliance backstop in the form of a s128 review condition.

¹ Schedule 1 - Requirements for Farm Environment Plans/Te Āpitiwhanga 1: Ngā Herenga i ngā Mahere Taiao ā-Pāmu

2. An assessment of the risk of diffuse discharge of sediment, nitrogen, phosphorus and microbial pathogens associated with the farming activities on the property, and the priority of those identified risks, **having regard to sub-catchment targets in Table 3.11-1 and the priority of lakes within the sub-catchment.** (emphasis added)

- 26 DairyNZ Block 3 evidence attached an amended Schedule 1. This was an attempt to list practices that if carried out, would demonstrate the farm was operating at good practice, according to each farm-relevant Good Farming Principle in the 2018 Action Plan². Each principle had a range of practices, and the list had a 'yes, no, not applicable'. The Panel questioned whether all practices had to get a 'yes' tick for the farmer to remain in the permitted activity category, and this raises questions about the structure of the permitted activity and associated schedule 1 from Block 3 evidence.
- 27 Not all risks of diffuse contaminant loss are the same across farms, or have a single mitigation action. For instance, in the 2018 GFP Action Plan, under the topic of waterways, principle 9 is "Identify risk of overland flow of sediment and faecal bacteria on the property and implement measures to minimise transport of these to waterbodies". Practices for farm race runoff containing sediment and effluent in rain events, could range from dispersing runoff onto land through cut-offs and culverts, preventing overland flow by bunds, or changing the location of races so they do not run alongside waterways. There is more than one action to achieve each principle and mitigate the risk. If each action has a roughly equivalent environmental result, then there should be a positive impact on the environment.
- 28 This translation of principle into farm-level mitigation action, is important to consider in any decision on standards in a permitted activity FEP. It has been addressed with the inclusion of words in an amended Schedule 1A by Fonterra, attached to closing submissions. DairyNZ supports the inclusion of the proposed requirement, as part of the permitted activity FEP Schedule, to describe whole farm management practices and general requirements, including identification and description of the key characteristics of the farm system including all inputs, outputs and management practices.
- 29 Since Block 3 evidence was presented, DairyNZ has continued to work with Fonterra and Federated Farmers on a proposed Schedule 1A that links what is required in a FEP, to a permitted activity for landowners who choose to join a certified scheme. DairyNZ has concluded that a new Schedule 1A linked to the permitted activity rule, should apply to farmers who choose to join a certified scheme.

² Good farming practice: Action Plan for water quality 2018. Downloaded from Federated Farmers website April 2019.

30 A separate schedule for FEPs should apply to a more tailored FEP approach under controlled activity Rule 3.11.5.3. A more tailored approach may be preferred by some farmers. Farmers can choose the most cost effective way to meet outcomes, in discussion with certified expert(s), and support from organisations such as DairyNZ in terms of effectiveness and profitability impact of environmental mitigation.