BEFORE INDEPENDENT HEARING COMMISIONERS

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	Proposed Waikato Regional Plan Change 1: Waikato and Waipa River Catchment

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STATEMENT OF PRIMARY EVIDENCE OF JUSTINE YOUNG
FOR DAIRYNZ LIMITED
3 MAY 2019

SUBMITTER 74050

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Introduction

1 My full name is Justine Young. I am a senior policy advisor at DairyNZ and have the qualifications and experience set out in my statement of evidence I presented at the Block 1 hearing.

Code of Conduct

2 Although this is a Council hearing, I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out in my statement of evidence I presented at the Block 1 hearing. I confirm that the issues addressed in this statement of evidence are within my area of expertise.

Scope of Evidence

3 I have been asked by DairyNZ to provide evidence to set the scene for DairyNZ's involvement in PC1 hearings, and submission matters related to topics in Block 2 of the hearings. I structure my evidence as follows:

a) Overview of DairyNZ's submission and evidence for Block 2.

b) Evidence relating to the following aspects:

   i. PC1 and reasons for retaining key aspects of the staged approach

   ii. Farm Environment Plans (FEPs) and Industry-agreed Good Farming Principles as the basis for determining mitigation practices

   iii. Nitrogen leaching on dairy farms, and Nitrogen Reference Points using Overseer as a nitrogen baseline and to establish 75th percentile

   iv. Implementation issues including sub-catchment priority, certified advisors, auditing and compliance, rule status of FEPS and Certified Industry Schemes.

c) Appendix 1 listing the changes DairyNZ seek to PC1 and the response in the section 42A Council Officers report (referred to throughout as the Officers report).

d) Where in this evidence I provide suggested redrafting of provisions:

   i. Text in blue double underscored font is proposed by me, consistent with the DairyNZ submission.

   ii. The underscored text is that proposed in the s42A Report.

Overview of DairyNZ evidence

1 DairyNZ evidence in Block 1 emphasised the DairyNZ submission support for the overall intent of PC1 and support for the technical underpinning of PC1. Getting the basic preparations right in the first plan change towards achieving water quality provisions in the Vision and Strategy, will assist the rate and scale of behaviour change needed to meet 2096 desired water quality attributes. For Block 2 of the PC1 hearings, DairyNZ has submitted an overview statement and expert evidence on the policy, farm and catchment-level implications of PC1, which I outline below.

2 Dr David Burger has set out key aspects of DairyNZ's stance toward PC1, and elements that are supported. He notes the importance of 'getting moving' in this first stage of achieving long term challenging water quality attributes. His evidence also highlights that DairyNZ intends to continue its research and sector leadership role in preparation for further changes. Dr Burger's strategic role includes ongoing discussion with the sheep and beef sector about long term land use, with the aim of agreeing a better alternative to litigating short term rights to nitrogen discharges region by region.

3 Expert evidence to support the DairyNZ submission and to respond to other submitters are statements from Dr Graeme Doole, Dr Bruce Thorrold, and Mr Aslan Wright-Stow. Evidence from Dr Doole draws on work that has assessed economic impacts on the dairy sector and includes reasons why proposals from other submitters for the dairy sector to mitigate more than is currently proposed in PC1 are not justified. In his evidence Dr Thorrold covers research co-funded by DairyNZ and provides reasons for a gradual transition to achieving the Vision and Strategy. Mr Wright-Stow provides a brief statement about DairyNZ co-funded work to establish robust guidelines for constructed wetlands as effective innovations in reducing diffuse contaminants.

4 My evidence to Block 2 focuses on how the provisions in PC1 provide clarity for farmers in terms of what is expected of them through FEPs, including nitrogen reductions for the highest leaching farms. I provide reasons for requests, and respond to some of the recommendations made by the Officers in the s42A report.

Summary of My Evidence

5 My overall conclusions from my evidence below are set out below.

Four contaminants

6 It is important that the focus remains on all four contaminants and implementing FEPs so that PC1 is the first stage in achieving the Vision and Strategy. I request the Commissioners do not accept Officers recommendations that have the effect of allowing more contaminants to be discharged through increasing stocking rate in rule 3.5.4.2. I do not support recommendations that shift the focus from all four contaminants, to a greater scrutiny on nitrogen in some provisions and at the same time, a loosening of requirements for stock exclusion and in one case a stocking rate increase for low intensity farming that may result in sediment, phosphorus or microbial contaminant increases.

Farm Environment Plans and reducing diffuse contaminants

7 FEPs, and mitigations that are appropriate to the farm context, will go a long way to reducing diffuse contaminant loss in an efficient and effective way. Using Industry-agreed Good Farming Principles (GFP) as the basis for determining mitigation practices, and taking advantage of what other councils have learnt so far, will assist to fine-tune provisions in PC1. Dr Doole highlighted in Block 1 that when he modelled the impact of the policy mix in 2016, the results showed the importance of the FEP in reducing contaminant loss on farms. I believe there are adequate safeguards in place in rule 3.11.5.4 and the overarching policy framework, that mean a controlled activity rule status for FEPs is appropriate. I therefore request FEPs should not be changed to restricted discretionary activity status.

8 I have made suggestions for how GFP should be referred to in policy 1 and 2 and Rule 3.11.5.4. This will add clarity that farms already at GFP are not expected to do more (unless they are in the highest quarter of nitrogen leaching farms), and addressing the questions in paragraph 305 of the Officer report seeking evidence on this matter.

9 Allowing for innovation is important. Proven mitigations suitable for one or more of the four contaminants should be available to farmers in the FEP process without additional hurdles of individual burden of proof consent by consent. I request the Commissioners do not accept the changes in the Officers report that place an

additional burden of proof for nitrogen-related mitigations compared to other mitigations for sediment, phosphorus and microbial contaminants.

10 In my opinion, implementation will be the key to success of PC1. If appropriate checks and balances are in place in the form of independent auditing and compliance monitoring so that Objective 3 is achieved, I support provisions for a more streamlined way of tracking nitrogen on a yearly basis, and the ability of Certified Scheme providers to develop FEPs. I request the Commissioners do not accept the option put forward in the Officers report for all dairy farmers to be subject to the first tranche of FEP implementation deadlines.

11 The Officers recommended changes that I do not agree with include some potentially conflicting wording in amended policies 1 and 2, and changes that imply further nitrogen reductions from dairy farmers are both necessary and easily achievable and are the most effective and efficient way of achieving the objectives. Given the clear standards and terms in Rule 3.11.5.4 and the checks and balances for a certified scheme, it is not necessary to change the activity status and make all FEPs a restricted discretionary activity.

FEPs and Nitrogen reduction

12 Existing nitrogen reduction provisions in PC1 are appropriate, and do not need to be increased to achieve Objective 3. The property-level modelling tool Overseer is useful to assess nitrogen leaching on dairy farms. Nitrogen Reference Points (NRPs) using Overseer should be required for all farms as a nitrogen baseline and in choosing a cut-off point of 75th percentile, above which farms need to demonstrate reductions of nitrogen.

13 From Block 1 of the hearing, Dr Depree's evidence demonstrated the need to address nitrogen in all parts of the catchment to achieve long term water quality improvements. Evidence in this Block of the hearing from Drs Doole and Thorrold illustrates the impact of PC1 on dairy farmers and the sector as a whole, and provides the counter to those submitters who propose dairy farmers should 'do more and faster' in PC1, with little justification of what this will achieve. Requiring some farmers to do more than currently in PC1 to reduce nitrogen, while others can increase, is not the most efficient and effective solution. I request the changes in the Officer's report that refer to greater than GFP reductions if between 50th - 75th

percentile are not accepted. I request further consideration of the method to determine which farms must reduce nitrogen loss, so that as much as possible PC1 groups farms on similar soil and rainfall so that it is the management practices that are focused on.

14 In the remainder of my evidence I expand on the key points above, and make suggested amendments to policy 1 and 2.

Farm Environment Plans

15 The DairyNZ submission supports FEP provisions in PC1. In my opinion, FEPs are useful in achieving PC1 objectives for two reasons. First, by assessing the current situation on the farm, it helps to determine environmental footprint, including underlying biophysical factors (soil, slope) and historic management actions, and second, an FEP is forward-looking in providing a future plan, establishing a baseline and tracking actions. FEPs are also an important environmental risk management tool requiring farmers to identify risks in a systematic way and develop plans to accept, avoid, transfer or mitigate the risk. The key point is that FEPs are living documents and represent the most effective means of reducing the likelihood of risks occurring in complex, bio-physical farm environments

16 From 2011 – 2018, DairyNZ implemented a similar tool called a Sustainable Milk Plan (SMP). Approximately 1,700 SMP's were completed in eight catchments in New Zealand. SMPs focused on reducing environment footprint from diffuse nitrogen discharges, with some actions also reducing E.coli, sediment and phosphorus. In 2012, DairyNZ and Waikato River Authority co-funded 642 plans in Upper Waikato and in 2015 a similar programme in Waipa for 285 dairy farms. SMPs had similar elements to FEPs; assessment of risk, agreement of actions, and follow-up of progress. Differences were that the Plan and the actions were voluntary. For some of the catchments DairyNZ collated mitigations actions and estimates of nitrogen reduction of each and modelled the water quality improved expected if the actions were fully implemented. In Upper Waikato, this showed reductions of nitrogen and phosphorus leaving the farm, of approximately 8 and 21 percent respectively if fully implemented (Brocksopp et al page 37). Key DairyNZ learnings that apply to PC1 are that actions have to be developed ***with*** the farmer, and be written in a way that can be followed up, with monitoring progress being the most time consuming part of the project (Brocksopp pers. comm April 2019). The SMP was a precursor to other more

specific milk processor tools and Fonterra and Miraka will bring evidence about their programmes.

17 The DairyNZ submission supported the risk-based approach to FEP development. The request was for greater clarity. A plan user needs to know *how much* risk must be addressed, because there is always more than one mitigation to address any risk or implement any of the Good Farming Principles.

18 In PC1, the relevant community-desired environmental outcomes relevant to dairy farmers are set out in Objective 1 and 3 and the course of action in a series of policies 1, 2, and 6. Clear guidance about the level of on-farm mitigation required, is that farmers must stay within a 5-year rolling average of the baseline nitrogen leaching, and for some farms above the 75th percentile value, having to reduce nitrogen leaching. For the other three contaminants, the mitigations to meet community desired outcomes are much less clear.

19 FEPs require plan users to identify the risks on their property, quantify the probability and likely impact of those risks, and the most effective means of mitigating them. It is essential that farmers can "right size" their mitigation options to reflect their property's unique risk profile. Each risk identified has multiple potential mitigations, some of which could be incorporated easily and others that required changes to other parts of the farm system and impacts on the business.

20 A 2017 field day[1] workshop showed divergence about the appropriate mitigation to manage each risk, confirming the need for moderation processes recommended after FEP case studies undertaken in 2016[2]. WRCs comment on the case study farms included that

> "there are some matters that don't lend themselves to the setting of clear minimum standards, so the skill and judgement of the Farm Environment Planner will remain critical to the quality of the FEPs. Therefore it will be important to provide for ongoing moderation processes to ensure consistency of interpretation of real world situations" (Journeaux 2016 page 15).

[1] Sept 2017 Workshop on a dairy farm organised by WRC implementation staff to discuss FEP guidelines and attended by rural professionals including farm consultants.
[2] Journeaux P. 2016 Report to Waikato Federated Farmers Farm Environment Plan project. 4 November 2016

21 A key concern raised by farmers during PC1 engagement meetings I have attended since 2016[3], is that the mitigations have to make sense to their existing farm system, and that certified advisors need both practical on-farm risk assessment experience and broad farm-system experience. The approach to determining mitigations and the assumptions made by DairyNZ in its farm mitigation modelling were covered by Mr Newman in block 1 of the hearings (paragraph 3.6).

22 The DairyNZ submission requested more guidance about what was expected of farmers in FEPs, including the use of Good Farming Principles in preference to sending plan users to try to interpret Table 3.11-1. In my experience with regulation of diffuse contaminants on farms, there is an inherent tension in giving certainty and allowing flexibility. Certainty must be both for community confidence and for farm owners and managers in planning for the future. On-farm flexibility to use emerging but scientifically proven and tested mitigations, such as those referred to by Dr Thorrold and Mr Wright-Stow in their evidence, and flexibility to change mitigations in the life of PC1 is needed to respond to changes in climate and prices. The critical aspect is that the time and cost for Council to approve farm management changes does not place an unnecessary cost burden on farmers, or discourage innovation in how contaminants are mitigated.

23 In the section below I will discuss the DairyNZ submission about the development and application of industry-agreed GFP. I will then discuss the need for an even-handed approach to new technologies and practices. Some new technologies are described by Dr Thorrold and Mr Wright-Stow.

Good Farming Principles

24 The Officers have recommended changes to policy 1 and 2 to insert reference to Good Farming Practice or better and additional requirements for nitrogen reductions for those farms between 50th and 75th percentile values. Below I make suggestions for further amendments to the text. In the first instance, the references to GFP are unclear. It is important to apply the industry-agreed *principles* in order to assess whether the farm is overall, operating at good farming practice. If this is done, then reductions in diffuse contaminant losses from farms will follow. Spelling this out in the

[3] Reference to DairyNZ engagement with farmers is provided in Attachment 1 of my evidence

policies will remove potential misunderstanding that there is a 'master list' of specific actions that every farm should universally apply.

25 At the time the submission was lodged, DairyNZ defined Good Management Principles (GMP) according to the industry-agreed GMP document, published by Canterbury Regional Council and dated 9 April 2015, entitled "Industry-agreed Good Management Principles relating to water quality: Canterbury Matrix of Good Management Project." A related document that takes the Canterbury work as a starting point, is the 2016 DairyNZ publication entitled "Good Management Practices: A guide to good environmental management on dairy farms." The 2018 national action plan to promote the 21 Good farming Practice Principles made minor changes to the list[4].

26 In my opinion, the decision to require FEPs that follows a risk-based approach with few minimum requirements that apply across all farms, is appropriate. I understand that some submitters see the FEP process as not certain enough, and prefer to see additions to the existing minimum actions spelt out in PC1 Schedule 1. I return to this when the topic is covered in Block 3 of the hearing. My initial comment is that there is a limit to what should be required across the board in every farm plan. Doing so may lead to the same environmental outcome but at greater cost overall, because at a farm-level the required mitigation is not the best fit for the farm context. If the FEP process with certified advisors, moderation processes and robust monitoring is implemented, it will not be necessary at this point to try to define further minimum standards (as actions that every farm has to undertake to meet rule 3.11.5.4, regardless of farm context).

Implementation Monitoring and auditing

27 In my opinion the success of PC1 will come down to implementation. Setting up for success includes availability of experienced, certified advisors, moderation processes and streamlined ways of tracking, auditing and collating actions on farm and their likely impact on water quality attributes.

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

28 Resources needed to develop FEPs has been canvassed in the evidence of Lee Matheson in Block 1, and I agree with his presumption that spreading out implementation deadlines will help ensure high quality FEPs are delivered on time.

29 In terms of the 'readiness of dairy' to meet FEP deadlines, I note the submissions by Fonterra and Miraka were one reason given in the Officer's report (paragraph 598) for the option of all dairy farms being shifted into a status of 'priority 1' in Table 3.11-2. The relevant dates for submitting FEPs are contained in Rule 3.11.5.3 and Rule 3.11.5.4. I presume this option results in the earliest date for FEPs will apply to all dairy farmers. However, the Officer's recommendations appear to delete all reference to dates for completion of FEPs in the rules and policy 8.

30 I request the Commissioners do not accept the option in the Officer's report for adjusting priority order for dairy farmers (paragraph 598). The timeframe for completing the FEPs should not be brought forward to apply to every dairy farmer, in addition to farmers already within priority 1 sub-catchments in PC1. My reasons are as follows.

a. It is unlikely there will be sufficient certified Farm Environment Plan advisors available to meet the demand. In making this statement I rely on others knowledge of the time taken to complete a robust farm plan, in Journeaux 2016 and Mr Matheson's evidence. DairyNZ's Upper Waikato Sustainable Milk Plan programme demonstrated it was possible to source and train enough nutrient advisors focused on actions developed with the farmer in a relatively short time. However, the focus was nitrogen mitigations and a voluntary process, without the additional step of mitigation actions being signed off by a certified person to go into a regulatory phase (as required in rule 3.11.5.4).

b. Even with expert advice, the people making the changes are the farm owner-operators, share milkers, managers and farm staff. All have to make changes to behaviour. Dr Thorrold emphasises the complexity of implementing farm system changes to meet challenging limits, and the need to take time to build knowledge of farm managers for full implementation of community-desired environmental outcomes in a staged approach.

c. The topic of conditions for effective practice change, including time and support, was covered by Drs Paine and Sheath for Miraka in Block 1, and drawing on my experience with Lake Taupo catchment nitrogen limits, I agree with the conclusion that farmers will require one-on-one assistance from a number of sources.

d. Setting deadlines in PC1 that are unrealistic will reduce confidence in PC1 by farmers and the community. I expect this point will be raised by dairy farmer submitters as it was widely discussed in DairyNZ engagement meetings for PC1[5].

31 There are significant elements to PC1 success that rely on processes outside PC1. In emphasising the need for robust auditing, and collating FEP results to go into an overall accounting framework, I suggest drawing on what is being learnt in other parts of NZ. One useful comparison is the Canterbury Regional Council equivalent FEP implementation process, described by Mr Dragten in his paper included in the Officers report. My understanding of the Canterbury experience is based on my colleagues in DairyNZ and my previous role, including attending an ECan auditors training day. Any person can lodge a FEP in an approved template as part of their consent. This has the benefit of meeting the challenging rate and scale of regional plan requirements, but it raises important questions about the quality of the outcome, the need for flexibility, and the level of support and training that is required to deliver durable practice change. My interpretation is that audits have been essential to fine tune the list of actions required to address risk in the context of the FEP. After assessing whether industry-agreed principles are being given effect to, an amended list of actions that goes forward to the next audit.

Effective mitigations outside Overseer

32 Research into effective technologies and management for reducing diffuse contaminant loss is ongoing in New Zealand and much is already known about the broad conceptual relationships, as evidenced by the peer reviewed 2015 report[6] There are some proven nitrogen reduction technologies and practices that are not yet

[5] I set out a list of farmer engagement meetings in Attachment 1 of my evidence.
[6] Waikato Regional Council 2018 Technical Report 2018/47. Description of mitigation options defined within the economic model for Healthy Rivers Wai Ora Project: Description of options and sensitivity analysis 28 September 2015, Prepared for the Technical Leaders Group of the Healthy Rivers/Wai Ora Project by Graeme J. Doole.

in Overseer. PC1 provides for nitrogen-relevant mitigations outside Overseer to be included as a matter of control in the controlled activity rule 3.11.5.4 iii). This provision is to acknowledge that through the consent process, any proven mitigation(s) that reduce nitrogen loss from a farm, are appropriate. In this way there is no difference from the process in the FEP of choosing mitigations to reduce the risk of microbial contaminants, sediment and phosphorus. PC1 does not restrict mitigations to address microbial, phosphorus and sediment. Instead, certified farm planners and ongoing research is relied upon.

33 As set out in Dr Thorrold and Mr Wright-Stow's evidence, much of the DairyNZ research investment to date has focused on nitrogen reduction and making scientifically proven mitigation technologies available to farmers. Some mitigations such as plantain focus on nitrogen. Other mitigations are effective in certain conditions in reducing all contaminants, such as constructed wetlands as set out in Mr Wright-Stow's evidence.

34 In my opinion, PC1 should demonstrate an even-handed approach for new technologies and practices for all contaminants. If this is the case, proven mitigations suitable for one or more of the four contaminants are available to farmers in the FEP process without the additional hurdle of individual proof of effectiveness consent by consent.

35 One way of dealing with mitigations outside Overseer, as set out in the Officers report paragraph 112, is for farmers to have recourse to a default, more onerous rule category, and provide 'sufficient evidence…to show the mitigation will be effective in reducing nitrogen leaching.' However, having to engage a NIWA scientist in addition to a certified farm planner as part of a FEP process will be a significant disincentive in the use of constructed wetlands.

36 I agree that mitigations should be based on sound science, as noted in the same paragraph of the Officers report. Certified Farm Plan Advisors bear the responsibility of having to assess which mitigations are suitable for their client farms. To assist Certified Farm Advisors and farmers, WRC is producing guidelines outside PC1, and these have the benefit of being able to be updated outside a plan change process. The Officers report (paragraph 109) noted DairyNZ request for accounting for mitigations outside Overseer. I don't agree that nitrogen mitigations should be placed in a special category of proof, over and above mitigations for the other three

contaminants. Instead, all mitigations should be subject to the same level of scientific rigour and testing. Because Overseer is used to estimate a farms nitrogen leaching baseline, there will need to be agreement on proxies and workarounds for mitigations outside the model as part of finalising the FEP.

37 The effectiveness of any mitigation must be established first. In the Officers report (paragraph 111), there is a note about proxies and workarounds in the FEP process occurring with plantain, following an extensive programme involving research organisations, DairyNZ and farmers.

38 To increase the rate and scale of uptake of constructed wetlands by landowners, guidelines are in development that rely on extensive knowledge and research findings by organisations such as NIWA as set out in Mr Wright-Stow's evidence.

39 In summary, I believe an up to date, 'proven mitigation guide' that covers all four contaminants and their effectiveness across a range of conditions is preferable to imposing a more onerous rule category and case-by-case proof of mitigations such as constructed wetlands and plantain.

Summary and changes requested to FEP policy provisions

40 The changes recommended in the Officers report have inserted several phrases that introduce a new level of uncertainty. I request that these recommended changes are adjusted. The first is in Policy 1 'a1) Requiring all farming activities to operate at Good farming Practice *or better'* (my emphasis) and in Policy 2 a1) 'Set out clear, specific and time framed minimum standards for Good Farming Practice…'. In my opinion this does not assist farmers. I request the Commissioners accept the Officers recommendation in part and incorporates the following additional text:

> Policy 1 'a1) Requiring all farming activities to ~~operate at~~ adopt Good farming practice after applying industry-agreed principles for water quality ~~or better,~~ and'
>
> Policy 2 a1) 'For each farm, apply industry-agreed Good farming principles and Set out clear, specific and time framed mitigations ~~minimum standards for Good Farming Practice~~

Policy 2 b1). Calculating the 75th percentile and 50th percentile nitrogen leaching values and requiring farmers with a Nitrogen Reference Point greater than the 75th percentile to reduce nitrogen loss to below the 75th percentile and all other farmers ~~with a Nitrogen Reference Point between the 50th and 75th percentile~~ to demonstrate real and enduring reductions of nitrogen leaching commensurate with them operating at Good Farming Practice, with resource consents specifying an percentage amount of reduction or changes to practices required to take place; and

41 I request the Commissioners make additional changes to the track-change recommendations already made by officers to Policy 2 (new text is double underlined in blue text). Also that Controlled Activity Rule 3.11.5.4 matter of control iii) be confirmed as written in PC1 with a similar phrase about scientific rigour.

Policy 2 Farm Environment Plans

…

b2. Are flexible and able to be updated so that continuous improvement, new technologies and mitigation practices can be adopted that have been scientifically tested in terms of their level of effectiveness, such that diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens ~~further~~ reduce over time.

Rule 3.11.5.4

…

Matter of control

iii) ….unless other suitable mitigations are specified, as set out in the WRC mitigation guideline

Managing nitrogen

42 DairyNZ' s submissions about nitrogen is that it is important to manage in the life of this plan change to achieve long term water quality. In Block 1 of the hearing, Dr Craig Depree supported the judgement made by Technical Leaders Group on the importance of managing both phosphorus and nitrogen. The outcome sought by DairyNZ in Block 2 of the hearing, is that greater clarity and streamlining of nitrogen management aspect of policies and rules will assist achieving Objective 3 and that changes recommended in the Officers report are not accepted which have the result

of PC1 placing *less* emphasis on phosphorus, sediment and microbial contaminants as they do on nitrogen.

43 I am concerned that the scrutiny of the nitrogen by submitters over and above the other three contaminants, and the response in the Officers report to try to tighten council oversight and control of nitrogen, will lead to PC1 outcomes which are inflexible, de-incentivise up take of technologies and make PC1 unwieldy to implement. In my experience of Lake Taupo catchment nitrogen cap regulation, there was a similar tightening of implementation control that that resulted in increasing the ongoing costs for council and farmers of implementation, due to intensive scrutiny of farm operations[7].

44 In my opinion there are sufficient checks and balances in PC1 to prevent nitrogen losses creeping up. These are the NRP, 75th percentile and risk-based FEP. In addition, greater confidence in the use of nitrogen-specific technologies outside of Overseer can be dealt with by adding guidance in policy 2 about the need for their scientific rigour, peer review and testing.

Use of Overseer model

45 PC1 relies on Overseer to determine nitrogen leaching on-farm. In my opinion Overseer is a suitable tool to use in establishing the NRP and developing actions to reduce nitrogen leaching where required, by showing the relative change in leaching on a farm, ideally as a percentage change from baseline leaching using the same version of Overseer. The change to Overseer has enabled a more efficient way of evaluating on an annual basis a farm's leaching estimate as the model is updated.

46 I am familiar with the use of Overseer in regulation of diffuse discharges in New Zealand and the criticisms of it. I generally agree with the s42A report summary of its use, strengths and weaknesses. I have read the Parliamentary Commissioner for the Environment 2018 report on the use of Overseer[8], and the Block 1 evidence of Mr Gerard Willis and the report for Overseer Ltd he completed.[9]

[7] In a previous role I worked with resource consent officers to review implementation challenges of Waikato regional Council Plan Change 5: Lake Taupo catchment nitrogen cap and trade, five years after it was operative
[8] Parliamentary Commissioner for the Environment 2018. Overseer and regulatory oversight: models, uncertainty and cleaning up our waterways.
[9] Willis G. 2018 Using Overseer in Water Management Planning: An overview guideline.

47 Overseer is appropriate to use to define the Nitrogen Reference Point (NRP). The need to put a 'line in the sand' about the benchmark period requires a time period. In my opinion, two years is a reasonable compromise between having as much good quality data at a block level, to use, versus going to a longer benchmark period to try to smooth out yearly fluctuations in farm inputs.

48 Overseer is appropriate to use as a tool to assess whether mitigations on a farm have resulted in nitrogen reductions. For those farms identified as being at or above a threshold, using the NRP, I understand it is possible to run scenarios in Overseer to identify changes that will bring nitrogen leaching down. As Overseer is updated, it will change predictions of leaching. This means farm management and input may be identical, but leaching numbers will change with version changes. For that reason, it is important to ensure that the way Rule 3.11.5.4 and resulting consent conditions are written, do not lock farmers into an absolute nitrogen leaching number. Instead, Overseer should be used to compare 'like with like'. In my opinion, where nitrogen reductions are sought from farms above the 75th percentile value, the consent condition should be phrased as a percentage change of nitrogen leaching, not an absolute number (total nitrogen loss from the farm in tonnes, or a per hectare leaching rate per year).

49 I note DairyNZ supports the concept of a five-year rolling average, to smooth the inevitable fluctuations of farms having to respond to seasonal changes but Overseer being a long run average model.

Nitrogen Risk Scorecard as a streamlined monitoring tool

50 I have considered the proposal from Fonterra for a more streamlined way of checking that their dairy farm suppliers are not increasing the risk of nitrogen leaching on their farm.

51 In my opinion the option Fonterra propose is feasible. My understanding of the Fonterra proposal is to replace a year on year requirement to use Overseer to model nitrogen leaching with a calculation of change in risk based on farmer supplied data about inputs. I support the scorecard with the caveat that farm systems or Overseer experts have not assessed the technical robustness of the scorecard i.e. the data that went into the calculations or thresholds set for risk. Dr Thorrold's evidence is that

the drivers of nitrogen leaching on dairy farms have been well-established and robustly tested in research. My understanding of the scorecard is that it draws on the same research and that it is possible to use detailed farmer-supplied data to assign risk of increased nitrogen leaving the farm.

52 I have read Mr Willis' evidence for Block 1 of the hearings, in particular paragraphs 6.11. to 6.19. I agree that the Scorecard could be used to track whether a farm has increased its risk of nitrogen leaching. I also agree that it should not replace the need for the NRP to be calculated using Overseer, and for those dairy farms where reductions are required, Overseer remains the tool of choice.

Rule activity status

53 In my experience with WRC's Lake Taupo catchment nitrogen cap rule 3.10.5.3, there were some concerns at the time the rule was made operative, that it would not provide sufficient certainty. In response, council implementers placed additional administration burden on themselves and farmers in an attempt to ensure the farms nitrogen cap was not exceeded (Young 2014). My understanding is that since rule 3.10.5.3 became operative a decade ago, there have been no instances where an up to date nutrient management plan as a consent condition of the controlled activity, was insufficient to manage existing farming operations to meet plan objectives in the regional plan (Section 3.10). In fact, many Lake Taupo catchment farmers have operated below their cap because in rule 3.10.5.3, there is no ability to take account of year to year variation in price and climate with a rolling average.

54 In relation to rule activity status, I request the Commissioners:

a. Consider an alternative to the NRP such as that put forward in the Officers report as Option 3.11.5.2A. I do not cover this further except to note that stocking rate is a coarse proxy for nitrogen risk. More importantly, stocking rate does not address risk of other farm activities contributing to diffuse contaminant loss, therefore this option requires considerable further discussion as to its merit.

b. Retain the rule activity status in the permitted activity rule 3.11.5.3. In my opinion the checks and balances in the certified scheme justify a different activity status for the rule. The council's monitoring and enforcement roles are complemented by additional requirements of the scheme owner, including

that it must ensure its members are registered, have NRPs, and a FEP signed off by a certified person, with both being checked and information passed on to the council. In addition, the scheme operation itself will be audited. I defer to other dairy sector submitters in their assessment of the merits of a permitted activity over a consent under a certified scheme. I have not assessed the implication of all farms being subject to application to WRC instead of joining a certified scheme. In my opinion the number of farms in the Waikato catchment create implementation challenges even with certified schemes. I believe it is more important to show progress in PC1 than place a greater administrative burden on WRC and risk not being able to meet deadlines in the timeframe allowed in PC1.

c. Retain the controlled activity status for Rule 3.11.5.4 and the requirement for NRPs and approval of FEPs by certified farm environment planners. I expand on this last request below.

55 The reasoning for preferring a restricted discretionary activity rule status over the controlled activity rule 3.11.5.4 in PC1, is to avoid the potential situation where the FEP signed off by the certified person is insufficient. The concern is that in granting the consent there is uncertainty that effects will be mitigated sufficiently. Consent conditions cannot cut across, or frustrate, the use of the resource allowed in the rule. Legal experts will assist the Commissioners on that point, and in the remaining paragraph I set out my reasons for preferring the controlled activity 3.11.5.4 as the key rule for FEPs.

a. PC1 policies, schedule B and controlled activity Rule 3.11.5.4. (with small modifications) provide a sufficiently robust process and provides the 'boundary' to manage adverse effects of an existing farming activity.

b. There will always be an element of uncertainty in embarking on new regulation of diffuse contaminants. In my opinion, a well implemented controlled activity rule that is thoroughly administered by the council, is appropriate.

56 Appendix 1 sets out a summary table of DairyNZ co-ordinated farmer engagement throughout the development and First Schedule process to date.

Justine Young

3 May 2019

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Attachment 1: Dairy Farmer Engagement – Waikato Regional Plan Change 1 – Waikato and Waipa

Activities co-ordinated by DairyNZ throughout development of Plan Change 1 as at April 2019

Note: Federated Farmers and B+LNZ and pan sector meetings to discuss Healthy Rivers were promoted by DairyNZ e.g. through regional update emails to all dairy farmers

Type	Date	Number of meetings	Topics	Invited	Attendance	Local meetings	Awareness
Dairy farmer meetings	May 2014	8	Intro to HR Values exercise Farmer involvement exercise	All dairy farmers	115	6 June Gordonton 25 June Te Kauwhata	Flyer drop to all dairy farmers Fonterra letter Txt reminder Promotion in regional updates RP/network promotion
	Apr/May 2015	8	Update/FMU's States and trends discussion	All dairy farmers	360	21 April Tuakau 22 April	Flyer drop to all dairy farmers Fonterra letter/Txt reminder Promotion in regional updates RP/network promotion
	Oct 2015	8	Proposed rules and modelling	All dairy farmers	444	9 Nov Te Kauwhata 11 Nov Gordonton 16 Nov Waiuku	Flyer drop to all dairy farmers Fonterra letter/Txt reminder Promotion in regional updates RP/network promotion
	March 2016	3	Proposed rules	Open	155	9 Mar Gordonton	Email invite/FEG group led
	June 2016	1	Proposed rules	Open	23	30 June Te Kauwhata	FEG led
	Nov 2016	9	Notified Rules	Open	750		Flyer drop to all dairy farmers Fonterra letter/Txt reminder Promotion in regional updates RP/network promotion
	Jan 2017	7	Submission prep	Open/RSVP	85	Cambridge/Te Awamutu/Tuakau Ngakuru/Tokoroa Gordonton/ Oto	Email /Monthly update Txt reminder Social media
Variation 1 meetings	19 April 2018 evening	1	Variation 1 change to deadlines	All dairy farmers	20	Cambridge	Email invite

	23 April 2018	1	Variation 1 change to deadlines	All dairy farmers	34	Reporoa	Email invite/FEG group led
	24 April 2018	1	Variation 1 change to deadlines	All dairy farmers	5	Tokoroa	Email invite/FEG group led
	26 April 2018 evening	1	Variation 1 change to deadlines	All dairy farmers	14	Te Awamutu	Email invite/FEG group led
	2 May 2018	1	Variation 1 change to deadlines	All dairy farmers	8	Te Kauwhata	Email invite/FEG group led
	3 May 2018	1	Variation 1 change to deadlines	All dairy farmers	12	Waiuku/Aka Aka	Email invite/FEG group led
Farmer engagement group (FEG) and Dairy Environment Leader (DEL) meetings	1 April 2019	1	Workshop on DairyNZ submission points	DEL/FEG	6	Hamilton	Personal email invites
Farmer engagement group and DEL meetings	18 April 2019	1	Workshop on DairyNZ submission points	DEL/FEG	8	Te Awamutu	Personal email invites
Drop-in day	10th May 2019	1	Drop in day to help farmers prepare if they are presenting in person to the hearings panel	Farmer submitters/ all dairy farmers in Waikato via social media		Tokoroa	Farmer submitters/ social media
Drop-in day	14th May 2019	1	Drop in day to help farmers prepare if they are presenting in person to the hearings panel	Farmer submitters/ all dairy farmers in Waikato via social media		Taupiri	Farmer submitters/ social media
Drop-in day	15th May 2019	1	Drop in day to help farmers prepare if they are presenting in person to the hearings panel	Farmer submitters/ all dairy farmers in Waikato via social media		Te Awamutu	Farmer submitters/ social media