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*in the matter of:* the Resource Management Act 1991

*and:* submissions and further submissions in relation to  
proposed Variation 1 to the proposed Canterbury Land  
and Water Regional Plan

*and:* **Central Plains Water Limited**  
*Submitter*

Statement of evidence of Hamish John Peacock (planning)

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## STATEMENT OF EVIDENCE OF HAMISH JOHN PEACOCK

### INTRODUCTION

- 1 My name is Hamish John Peacock.
- 2 I work for Jacobs New Zealand Limited (Jacobs) as a Senior Environmental Planner and National Planning Section Leader. Previously I have worked for MWH New Zealand Ltd (Christchurch) and Opus International (Nelson) and Waimakariri District Council. I have 17 years' experience predominantly in the development of infrastructure and the management of resources to support public infrastructure. Most recently, this experience has included my involvement representing a submitter for the Ruataniwha Scheme in Hawkes Bay.
- 3 I have a degree in Resource Studies from Lincoln University, and I am an affiliate member of the New Zealand Planning Institute (NZPI).
- 4 In preparing my evidence I have reviewed:
  - 4.1 proposed Variation 1 (*Variation 1*) of the proposed Canterbury Land and Water Regional Plan (*pLWRP*);
  - 4.2 the Officer's section 32 Report; and
  - 4.3 the Officer's section 42A Report.

Additionally, I note that I have a working knowledge of the Canterbury Regional Policy Statement (*RPS*), the Canterbury Natural Resources Regional Plan (*NRRP*), the Canterbury Water Management Strategy (*CWMS*), and Iwi Management Plans (*IMPs*).
- 5 In terms of Variation 1 and the Central Plains Water Enhancement Scheme (*CPW Scheme*) I have experience of other similar schemes and plan developments for water management. Additional to the Ruataniwha Scheme, I have experience from a number of hydro and irrigation schemes in Canterbury and the West Coast regions, which has assisted in my understanding of the statutory framework and the competing demands for natural resources.
- 6 I have also read the evidence of **Ms Susan Goodfellow, Mr Ian McIndoe, Mr Stu Ford, Dr Caroline Saunders, Mr Andy MacFarlane, Dr Greg Ryder**, and the joint statement of **Mr Nic Conland & Others (*Jacobs*)**. I have also read the relevant parts of the Officer's section 42A Report prepared by staff of and contractors to the Canterbury Regional Council (*the Council*).

## SCOPE OF EVIDENCE

- 7 In my evidence I have been asked to outline:
- 7.1 the general planning context as to Central Plains Water Limited's (*CPWL*'s) support for Variation 1, and specifically how it underpins the enablement of agricultural activities;
  - 7.2 the benefits to be realised in the catchment from Variation 1 being implemented, and why the success of Variation 1 is reliant on the CPW Scheme;
  - 7.3 the extent to which the implementation of Variation 1 will be consistent with the general intent of National Policy Statement for Freshwater Management 2014 (*NPS-FM*);
  - 7.4 the planning rationale as to why Policy 11.4.13(b), which requires landowners to meet the Good Management Practice Nitrogen and Phosphorous Loss Rates (*GMP*) post 1 January 2017, needs to either be:
    - (a) deleted (due largely to uncertainty of complying with yet to be defined GMP rates before the outputs from Matrix if Good Management Practice Programme (*MGM*)); or
    - (b) alternatively, express provision made for an updating of the policy (and wider restriction regime contained in Variation 1) once the outcomes of the MGM programme become known (an approach which appears to be at the very least generally consistent with Policy 4.11 of the pLWRP);
  - 7.5 the planning rationale as to why Policy 11.4.14 and the supporting policies (11.4.15 and 11.4.17(b)) regarding requirements for farming activities post 1 January 2022 need to be either deleted or amended such that:
    - (a) the acknowledgement of any required reduction in nitrogen (*N*) loss (emphasising, *if* in fact any reduction is required) is only at a catchment level (rather than against specific farming individuals) until such time as the relationship between nutrient management and farm profitability is better understood. At that time a plan change could again be provided for to include a more directed nutrient reduction regime – provided always that farming remains viable; and

- (b) property owners who, at least in the case of CPW, are members of an irrigation scheme do not need to comply with policy 11.4.17(b) given the uncertainties around the appropriateness of the reduction regime contemplated in policy 11.4.14;
- 7.6 OVERSEER<sup>®</sup> and its use within a planning framework such as that provided for in Variation 1 – including how different versions of the model should be managed;
- 7.7 the planning rationale for “farm enterprises” and the associated amendment to Rules 11.5.9 and 11.5.10 regarding the activity status for nitrogen allocations and farm enterprises;
- 7.8 the planning context for amendments to Policy 11.4.22 and Rules 11.5.37 and 11.5.38 regarding existing groundwater takes and the ability to transfer those takes;
- 7.9 the planning framework to amend the prohibited status of instream dams to discretionary under Rule 11.5.42 and supporting Policy 11.4.31; and
- 7.10 the planning justification for suggested changes to Table 11(j) to ensure sufficient N-load to fully develop the CPW Scheme and to better manage the relationship between existing irrigation (where the water take will be substituted with water from the CPW Scheme) and new irrigation which will be developed from existing dryland areas.
- 8 I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court’s Consolidated Practice Note dated 1 November 2011. I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

#### **SUPPORT TO VARIATION 1**

- 9 In general, and from a planning perspective, I support CPWL’s view that Variation 1 has potential a good planning tool for Selwyn-Waihora (to the extent that it seeks to deliver a strong agricultural economy).
- 10 This support is subject to:

- 10.1 the CPW Scheme being recognised and enabled in Variation 1 to the extent that it provides many of the cultural and environmental benefits Variation 1 seeks to achieve, and
- 10.2 accepting that existing irrigators within the CPW Scheme and a number of wider land uses can potentially improve their farming/growing practises, with some flexibility, to reduce *N*-loss provided they have certainty without compromising economic viability (of their operations).
- 11 The evidence I am presenting details my concerns with Variation 1 and in particular how it does not adequately accommodate the full development of the CPW Scheme. My evidence also suggests a number of necessary amendments (consistent with the relief requested by CPWL in its submission).

#### **BACKGROUND TO VARIATION 1 AND ITS DEVELOPMENT TO ACCOMMODATE THE CPW SCHEME**

- 12 How councils provide planning frameworks, such as Variation 1, to manage land use and development '*in a way, or at a rate*', which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety is core to sustainable management in Part 2 of the RMA.
- 13 Many of the environmental benefits to be realised in Variation 1 would not be possible without accepting the importance of farmers and growers as long term guardians of the land and water resources.
- 14 In preparing my background evidence, I have relied on **Ms Goodfellow's** description of the CPW Scheme, the statutory approvals CPWL has in place, the expectations and timing of the delivery programme, and the risks and uncertainties associated with the implementation of the CPW Scheme.
- 15 From a planning perspective, and in the context of enabling and promoting the further development of the CPW Scheme, it appears that the key elements to Variation 1, amongst other matters, need to include:
- 15.1 existing land users having flexibility to increase their nitrogen load to up to 15kg nitrogen per hectare if not already;
- 15.2 existing irrigation activities (which comprise a lot of the CPW Scheme) being protected – with required reductions (if any) to be applied only at such time the impact is properly understood and in a manner that ensures ongoing viability; and

- 15.3 the CPW Scheme being able to fully develop and in this regard the policy package needs to provide sufficient certainty to encourage land users to engage with the expectations of Variation 1.
- 16 Within the above, and from my planning review of Variation 1, it appears the Zone Committee and drafters of Variation 1 are seeking a number of interrelated outcomes to the above from the wider plan, being:
- 16.1 the achievement of the three key elements listed in paragraph 15 above;
- 16.2 the continued viability of farming in the Selwyn-Waihora catchment;
- 16.3 flexibility within existing nutrient footprints (for existing activities) and further nutrient footprints (for CPW Scheme users and an allowance for currently low discharge land users to increase their N load to 15kg nitrogen per hectare); and
- 16.4 improved farming activities (where necessary) from a nitrogen-loss perspective, but only provided overall farm viability continues to be achieved.
- 17 Many of the anticipated outcomes outlined above are reliant on the CPW Scheme being developed to its full extent. As such, Variation 1 needs to be a strategic (forward looking) plan, not dealing just with today's management issues, but also dealing with management issues in the context of the CPW Scheme being fully developed (which I believe is the Council's expectation). Equally, users of the CPW Scheme need certainty that its objectives can be fully achieved within the context of Variation 1. Both the CPW Scheme and Variation 1 therefore need to achieve mutually cohesive/complementary objectives.
- 18 A number of the wider objectives of Variation 1 are ambitious or will require material change to existing land use. Prior to discussing the more specific issues associated with Variation 1 it is appropriate to briefly recap on some of the more high level issues and concerns associated with Variation 1:
- 18.1 Variation 1, and particularly the nitrogen limit setting process, is not necessarily grounded on robust science and pragmatic outcomes for land users. I will address this point further in my evidence of my evidence;
- 18.2 The Council's heavy reliance on the collaborative processes initiated through the CWMS, the Zone Implement Plans and

the Catchment Committee roles – all of which accepted the appropriateness of the CPW Scheme being able to fully develop;

- 18.3 The collaborative process outlined above helped shape the content of Variation 1 and how the management of natural resources was to occur as a policy package. However, it is a non-statutory requirement and therefore does not face regulatory tests. At least in some senses this is problematic from a planning perspective and, in my opinion, has resulted in planning challenges in weighing up the cost and benefits of Variation 1 (which the Council Officers have attempted to assess in the section 32 Report). The specific plan provisions that may not have been realised include the land use implications of nitrogen-reductions and the timeframes for change.
- 19 In my professional planning opinion, the process to develop Variation 1 has perhaps more than normal relied on interactions and inter-dependencies between those who were consulted, the information that was provided and the outcomes that were derived. The Council has had to manage technical information, research and consideration of technology and development advancements – much, but not all of which is reflected in Variation 1.
- 20 In terms of further important context, it is appropriate to also emphasise the importance of non-statutory methods as a mechanism to also assist in the achievement of outcomes envisaged under Variation 1. In this regard, there has been goodwill on behalf of CPWL (and others) to develop methods to realise the environmental enhancements, to which **Ms Goodfellow** has outlined. This goodwill is based on broader understandings of the environmental challenges associated with land use and irrigation beyond Variation 1 and the RMA framework. **Dr Ryder's** evidence notes lake, waterway and catchment interventions as being some of these non-statutory methods, as well as the full development of the CPW Scheme, which he notes as necessary achieve the Zone Committee outcomes, irrespective of Variation 1.

#### **BENEFITS OF THE CENTRAL PLAINS WATER SCHEME**

- 21 I have relied on the evidence of **Dr Saunders** (Regional Economics), **Mr Ford** (economics), **Mr MacFarlane** (Farm Commercials/Viability) and **Mr McIndoe** (modelling), in respect to evaluating the benefits and costs that are anticipated under Variation 1. In reality, the intended benefits of Variation 1 will not be able to be achieved without the CPW Scheme being fully developed.

22 Beyond the immediate commercial viability and economic benefits of CPW, this includes:

22.1 more efficient use of water;

22.2 the likelihood of increased investment in modern irrigation systems with a net reduction in the loss of water, efficient water use and the greater productive gains from irrigated land;

22.3 the introduction of either run-of-river or stored river water, resulting in reduced pressure on groundwater takes; and

22.4 reduced and enhanced nitrogen management through improved farming practices and an increase in groundwater resources.

23 In paragraph ~~8077~~ I have outlined **Mr McIndoe's** evidence on the additional groundwater that will be provided as a result of the full CPW scheme. The addition of 225 million m<sup>3</sup>/y will ensure the groundwater resources are better off than the current position which will recharge the lower catchment, lake and coastal environments where those environments will benefit from improved water quality and quantity.

24 As noted earlier in my evidence, I consider that the commercial and environmental benefits of the CPW scheme need to be realised to meet the overarching objectives of Variation 1 and the supporting regulatory framework. The detail of how that is achieved is critical to supporting Variation 1. Those economic benefits are outlined in **Dr Saunders'** evidence.

#### **CONSISTENCY WITH THE NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT (NPSFM 2014)**

25 The NPS-FM 2014 came into effect in August 2014, after the development of Variation 1. However, I understand that Variation 1 now needs to be assessed against the requirements of the NPS-FM 2014 as opposed to the 2011 version, which Variation 1 was developed under. As such, I have provided a planning assessment of how the proposed amendments to Variation 1 will ensure it better aligns with NPS-FM 2014.

26 NPS-FM 2014 sets some clear regulatory frameworks relevant to Variation 1. In particular, the NPSFM 2014 requires Regional Councils to set water quality limits and ensure the necessary water quality information is available for this purpose and for current and potential resource users. CPWL fully understands the importance of this information in informing the regulatory framework and has



invested heavily in this area to ensure certainty of the development of the full CPW Scheme.

- 27 However, I also note at the outset that, as set out in the evidence of **Jacobs** and Mr **McIndoe**, it appears that the Council could have, in a large number of instances, sought more scientifically robust information to forming Variation 1 in the nature of NPS-FM 2014.
- 28 New Section CA of the NPS-FM 2014 sets a process for councils to select freshwater objectives from the options provided Appendices 1 and 2. Section CA2 (f) sets out the matters for councils to consider when selecting objectives.
- 29 Under the NPS-FM 2014 Variation 1 should set freshwater objectives that reference attributes for relevant national values under section CA. However, the Council officers have omitted some of the attributes that could have been expected given the timing of the NPS-FM 2014. I do not consider this necessarily detracts from the appropriateness of Variation 1 as notified. However, it means that the Council will at some future stage need to properly consider how it might comply with its wider obligations under the NPS-FM.
- 30 This point is most relevant given the NPS-FM (Policy E1 b) expects councils to implement the NPS-FM "*promptly as is reasonable in the circumstances, and so it is fully completed by no later than 31 December 2025.*" Also Policy E1 ba) advises of potential extensions to 2030 in some circumstances and E1 c), for a programme approach of time-bound stages to fully implement the NPSFM by 31 December 2025 or 31 December 2030 if it is impractical for it to complete implementation by 31 December 2015 (adopting a staged programme).
- 31 In particular, as set out in **Dr Ryder's** evidence and the NPS-FM Appendix 2 Tabled attributes, it appears that Variation 1 does not include the total phosphorous (TP), total N (TN) or Chlorine (CHI) a attribute states for rivers ("Spring-fed plains") as freshwater objectives of Section 11.6 (Table 11(a)). However, Variation 1 does include targets N and nitrate-N (nitrate toxicity) (Section 11.7, Tables 11 (i) and 11(k)).
- 32 The Appendix 2 Table attributes also relate to lakes. In this regard, I consider that Te Waihora/Lake Ellesmere is not actually a "lake" for the purpose of Appendix 2 because of the intermittent nature of it being opened and closed. Additionally I note that:
- 32.1 the footnote to the table on page 25 in Appendix 2 of the NPSFM 2014 sets out TN attributes, stating: "*intermittently closing and opening lagoons (ICOLs) are not included in brackish lakes*"; and

- 32.2 the recent letter from Ministry for the Environment (MfE) to all regional councils clarifies that "*the current attribute tables for lakes [in the NPS-FM] are not intended to apply to ICOLs and were developed on the basis that they do not apply to ICOLs*". The clarification further outlines that attributes for COL's are intended in the future, requiring further consultation.
- 33 If the NPS-FM 2014 was set aside (in the sense that it was not operative when Variation 1 was drafted), improvements to Te Waihora/Lake Ellesmere will still take longer than anticipated under Variation 1. This is because of the timing of the full development of the CPW Scheme and when the water quality expectation in Variation 1 in Rules 11.4.13 and 11.5.8 and Rule 11.5.8(4)(b) could be realised. Additionally, the progress of Farm Environment Plans being prepared and implemented (with continuous improvements), could see the compliance with Schedule 7 Part A, and corresponding tonnes of N per year being reduced (Table 11(j)) within Variation 1. That longer timeframe is reflective of the market uptake of the CPW Scheme and a more gradual and staged (validating each stage of improvements).
- 34 However, with the timeframes of Appendix 4 of the NPS-FM 2014 having effect, the programmed approach to improvements needs consideration. The process described in Policy CA2(a)-(e) and (f) (vi) outlines matters to consider, including: "*the timeframes required for achieving the freshwater objectives, including the ability of regional councils to set long timeframes for achieving targets*". In the absence of Appendix 4 of the NPS-FM 2014, Policy CA4 (regional councils setting of freshwater objectives below national bottom lines on a transitional basis) cannot be implemented.
- 35 However I also consider it reasonable to take the position that the national bottom lines in the NPS-FM 2014 are not standards that must be achieved immediately, when the circumstances of each catchment are considered. Rather, where freshwater management units are below national bottom lines, they will need to be improved to at least the national bottom lines over time. It is then up to communities to determine the pathway and timeframes for ensuring freshwater management units meet the national bottom lines. Where changes in community behaviours are required, adjustment timeframes should be decided based on the economic, social and cultural effects that result from the speed of change, in the full knowledge of accurate information.
- 36 Improvements in freshwater quality may accordingly take generations depending on the characteristics of each freshwater management unit. My planning opinion is that Variation 1 is making progress to address the issues, even if it is not known exactly how

each of the matters in Appendix 2 will be met (although reductions over time are anticipated). The key question in this regard is therefore what degree of change is able to be achieved without making land uses non-viable.

- 37 The planning framework sets some flexibility of when the expectations of NPS-FM 2014 can be implemented. Variation 1 sets 2022 as the main date for compliance/implementation of the new regime. However, there are valid reasons as to why Variation 1 might not be able to achieve all as set out in the NPS-FM 2014. These reasons include:
- 37.1 the economic and commercial impact on land users and their viability to adjust to the regulatory framework;
  - 37.2 the level of investment and debt servicing capacity of land users to remain viable;
  - 37.3 those investments may be innovations to make for more efficient use of water (irrigation systems), or land use practises (to reduce nitrates); and
  - 37.4 the fact that we are working with natural systems so actual changes may take some time.
- 38 The staging of the CPW Scheme and speed of investment and development is relative to other matters than just the regulatory framework. Again, the unique background to Selwyn Waihora Catchment planning where the Zone Committee process and community aspirations lead the development of Variation 1, generally recognised the value of accommodating development of the CPW Scheme but understandably did not (like CPWL and the rest of us) have an exact knowledge of where final development within the Scheme might occur and the actual timeframes within which such development will happen.
- 39 Turning to other specific policies, Policy C1 of the NPSFM states “by every regional council managing fresh water and land use and development in catchments **in an integrated and sustainable way**, so as to avoid, remedy or mitigate adverse effects, including cumulative effects” (my emphasis added), which in my opinion the sustainable way should enable the management of land uses (farming) so that it can continue to be viable.
- 40 Policy C2 of the NPSFM and reference to the Canterbury Regional Policy Statement (as currently drafted) to support the value of irrigation in Canterbury, such as identified in Objective 7.2.1 – Sustainable management of fresh water includes “*The region’s fresh water resources are sustainably managed to enable people and*

*communities to provide for their economic and social wellbeing through **abstracting and/or using water for irrigation**, hydro-electricity generation and other economic activities....." [my emphasis added].*

- 41 Additionally Policy 7.3.2 (4) notes that existing consented irrigation are exempt from Policy 7.3.2 (1 to 3) which provisions relate to damming and storage of water, and Policy 7.3.8 (4) (Efficient allocation and use of fresh water) recognises "*the importance of reliability in supply for irrigation*", and Policy 7.3.11 (Existing activities and infrastructure) which (1) is to "*recognise and provide for the continuation of existing ..... irrigation schemes, .....which involve substantial investment in infrastructure*". To be consistent and uphold the intent of the RPS, I therefore consider that Variation 1 should not erode the above mentioned policies which highlight the role irrigation in achieving the purpose of the RMA.
- 42 I have considered the full application of the NPS-FM to Variation 1 and consider that under the National Objectives Framework, including Part 2 of the RMA and the RPS underpins the NPS planning approaches

#### **IRRIGATION SCHEME NITROGEN LIMIT SETTING (TABLE 11(J))**

- 43 One of the main concerns with Variation 1 is the methodology and modelling used to set the N limits and setting of N limits in the future based on yet to be defined GMP rates. As such, the topic of limit setting for the CPW Scheme and in general requires more thorough discussion from a planning perspective.
- 44 My planning evidence relies on the evidence submitted by **Jacobs**, **Mr McIndoe** and **Mr Ford** regarding the modelling limitations of the Council's approach and validity for limit setting. **Mr Ford** outlines that the "*method used to allocate the N leaching total to CPW is very theoretical in nature and do not indicate a very robust method of allocation*". My interpretation of the evidence I have read is that there are more appropriate methods (OVERSEER<sup>®</sup>) that can establish an accurate N-cap and allocation of N for the CPW Scheme, which once established could replace Table 11(j). Table 11(j) and Policy 11.4.14 provide parallel nutrient reduction regimes for existing individual property owners and any irrigation scheme as defined by Variation 1.
- 45 Under Table 11(j), CPWL has been allocated an N load of 1944 tonnes per annum (reducing to 1742 tonnes in 2022). There is then no distinction as to the allocation of nutrients to existing irrigators (who may substitute or supplement their existing consents with water from the CPW Scheme) and to new irrigators who may join

the CPW Scheme and irrigate previously dryland. Policy 11.4.14 sets yet to be dined GMP rates for N loss in the future.

- 46 **Jacobs** and **Mr Stu Ford** discuss the appropriateness of the load provided for the Central Plains Scheme in their evidence and conclude that the load as set out is not sufficient to provide for the anticipated full development of the CPW Scheme. On the basis I emphasise that, if the benefits of the CPW Scheme are to be realised in the environmental outcomes (reduction in N catchment load), then Table 11(j) ought to accommodate enough N sufficient to develop all stages of the CPW Scheme.
- 47 An appreciation is also needed for the nature of the total catchment, as **Jacobs** and **Mr McIndoe** have outlined, not all water at the top of the catchment is irrigated, and a portion of what passes through the soil profile into groundwater. The decision makers for Variation 1 need to weigh up whether the environmental enhancements should occur irrespective of the costs to farmers and growers, or whether an overarching assessment under Part 2 of the RMA needs to consider the social and economic effects caused by Variation 1.
- 48 The amendments CPWL and others have suggested to the nitrogen limits for the CPW Scheme in Table 11(j) seek to ensure that the nitrogen baseline is set appropriately and as accurately as possible using sound, robust science. The nitrogen-reductions from January 2017 and 2022 also need to be determined and timed according to obtaining the most relevant and accurate information. In doing so, the assessment of effectiveness of the plan provisions can be questioned as to being the appropriate method and numeric numbers to manage the resources.
- 49 I appreciate **Mr Ford's** position that until we know the outcomes of what GMP will achieve, it is challenging to justify and set fair and equitable statutory provisions for N-reductions. The alternative is to develop a new policy with a catchment N-reduction that is time-bound, based on OVERSEER<sup>®</sup> Modelling (or SOURCE modelling) appreciating an easier N-reduction will only incentivise compliance, coupled with a shorter duration condition requiring a reduction. The approach outlined requires striking an appropriate timeframe and percentage reduction using the best and robust techniques (including assumptions and inputs).
- 50 It is my view the actual requirement to comply with GMP rates should not occur until such time as a further plan change has occurred (which would introduce further detail around what is required and confirm consistency with the wider reduction regime set out in Variation 1). Alternatively, the policy could be deleted –

particularly given the wider expectations already included in the pLWRP by virtue of policy 4.11.

- 51 Policy 11.4.14 does not (like 11.4.13(b)) have any direct impact on CPWL or the CPW Scheme. The key provision of issue to CPWL's perspective is instead Policy 11.4.17(b) which requires new irrigators joining the CPW Scheme to comply with the reduction regime in policy 11.4.14(b) from the outset (i.e. before it applies to other existing irrigators). I consider this is unfair as those latterly joining CPWS are disadvantaged over those already on CPW Scheme, creating further inequality. Additionally, the return on investment (and incentive) to join CPWL would be eroded with greater restrictions applying, reducing the more collaborative approach benefits which better regulate meeting the objectives of Variation 1.
- 52 In my opinion, predicting the appropriateness of a nitrogen loss reduction regime prior to having the appropriate data could unduly penalise or overstate what might occur. As the evidence of **Mr Ford and Mr Lowe** highlights, the unreliability of the modelling used to set the nitrogen limits (and the fact that the OVERSEER<sup>®</sup> model is a relative model rather than an absolute model), means that some uncertainty remains around the actual real-life effectiveness of the policies as set out in the notified version of Variation 1 in terms of achieving a reduction. It does however appear apparent that a required reduction in N loss can have a material and potentially significant impact in some circumstances and may simply not be achievable in others.
- 53 Given that Policy 4.11 of the pLWRP acknowledges adaptive methods of good management practises being introduced through further plan changes, I consider that the wider planning framework already takes an appropriate approach to the imposition of good management. In doing so I also consider that Policy 4.11 is sufficient to uphold Objective E1 (*Progressive implementation programme*) of the NPSFM.
- 54 It appears that the Council Officers' consider on-farm step changes and investment necessary, which is outlined in the section 42A Report (paragraph 5.34). The Officers have also recognised in part the contribution that the CPW Scheme makes towards nitrogen reductions (paragraph 5.38 of the section 42A Report). However, I would dispute the Officers' report (paragraph 11.135) that the relief sought would be contrary to the CWMS Zone Committee outcomes and Policy A2 of the NPSFM. The strategy to await the findings of the MGM programme and then seek a further plan change will bring about setting targets and timeframes. The only difference is that this would occur in a manner and timing that will enable CPW to

develop and viability of land uses. Further, Policy 4.11 seems to already provide for the approach being sought.

- 55 Having reviewed the evidence of **Mr MacFarlane, Mr Lowe and Mr Ford**, and I conclude that pre determining GMP rates erodes the ability of farmers and growers to maintain a viable operation from those matters noted elsewhere in my evidence. The regulatory framework is another challenge and one most farmers and growers are up for, but not at an unsustainable way or rate to how resources are to be managed. I believe that is not the intent of Part 2 of the RMA.
- 56 For completeness I also note that CPWL is not challenging the lake model *per se*. However, the evidence being provided by CPWL suggests that the actual contribution of the CPW scheme to Lake Ellesmere/Te Waihora is likely to be smaller than that predicted by the Council's modelling.
- 57 The Part 2 balancing assessment is critical, and I appreciate the dilemma with wanting to provide entities with certainty while also wanting to be adaptive to change. My planning view is that shorter duration of changes, with smaller adaptations, can help manage expectations. I recognise that the plan change process is far from ideal for this adaptive management approach, but my view is that both Council and land users will have greater confidence as more of these adaptations take place. Equally, shorter times and small changes will incentivise the primary industry to get as robust information and modelling from their practises and on-farm adaptations.
- 58 My observations from a planning perspective on this overarching balancing expectations includes:
- 58.1 The degradation of Lake Ellesmere/Te Waihora, which has been over a very long time, influenced by not just humans, but also natural processes and changes to the soils, coastal processes and climate changes. The expectation to restore the Lake borne from the Water Conservation Order and supporting regulatory provisions is the correct approach, but the speed of change needs to be balanced with the implications of those changes, and the empowerment of land users to make those changes effectively.
- 58.2 Human induced activities and specifically land clearance, development of agricultural land, land drainage, land intensification (stock rates), irrigation, and crop developments, waterway enhancements all have had a part to play in the state of the environment. CPWL as a submitter appreciates its opportunity to amend the 'state of the

environment' and has a forward looking view that technology advancements and better environmental, operational and collaborative (farm) operations to manage water resources can achieve the desired enhancements that Variation 1 ultimately seeks. However, this will take considerably longer than the more hasty approach directed by Variation 1.

- 58.3 The amendments need to be regulated to provide some equality across all land users and farm types, and undertaken in a way or at a rate that empowers those farmers and growers to sustain their operations. The expectation to have N loss rates from 1 January 2022 set out in Rule 11.4.14 (b) is premature, and not providing for the adaptive changes that GMP and Farm Environmental Planning will provide for. It is possible without those percentage reductions prescribed potentially there could be greater reductions, rather than a target provided, however that is a risk to agree to ahead of obtaining the outcomes.
- 59 If consideration is given to social and economic implications of Variation 1, the step change (timing) to how N is managed is important to acknowledge the NPS-FM, and the NPS-FM, the RPS and CMWS are all underpinned by sustainable management of water resources (i.e. the purpose of the RMA).
- 60 Importantly for more broadly satisfying Part 2 of the RMA, CPW's staged delivery of their scheme is a key to economic recovery action, which addresses social, cultural and environmental enhancements that are sought by other methods. Balancing those economic drivers of CPW with the rate of environmental enhancements and water quality and quantity matters for sustainable management of natural resources is key to whether Variation 1 will be considered a success.
- 61 The people, landowners, communities and businesses that can make this happen need to be empowered to do so, rather than stagnated in their decision making and confidence to invest in order to realise the outcomes for the environment.

**Prohibited status of instream dams (Rule 11.5.42 and Policy 11.4.31)**

- 62 Policy 4.8 of the pLWRP provides that:

"4.8 The harvest and storage of water for irrigation or hydro-electricity generation schemes contribute to or do not frustrate the attainment of the regional concept for water harvest, storage and distribution set out in Schedule 16 or the priority outcomes expressed in the relevant ZIP."



- 63 With the above in mind, CPWL opposes the prohibited activity status of certain instream dams under Rule 11.5.42 and seeks the activity status be amended to discretionary. As outlined in the evidence of **Mr McIndoe** and **Ms SGoodfellow**, the CPW Scheme is reliant on water supply from Lake Coleridge, however the contract terms do not provide certainty to CPWL that it can operate with stored water post 2031.
- 64 It is also noted at the outset that any future dam proposal associated with the CPW Scheme, or others, if pursued might be very different in terms of environmental effects than that which CPWL previously pursued in their original consents.
- 65 CPWL acknowledges that, for the CPW Scheme to be fully realised and the environmental outcomes sought in Variation 1 over the long term achieved, it is likely that CPWL needs more water, which will most likely require a form of harvesting and storage. As such, CPWL will need to be able to have the option to seek additional sources of water. CPWL acknowledges that the consenting process for any dam and/or storage might be very hard in terms of addressing the risks, environmental effects and how to better manage construction and operation to satisfy affected parties.
- 66 **Mr McIndoe's** evidence identifies that with the storage capacity and increased reliability correspondingly could mean less need for groundwater consents or transfers. I will address the transfer of groundwater permits later in my evidence.
- 67 In respect to dams, my experience as the Reporting Officer for the West Coast Regional Council for Meridian Energy's Mohikinui Hydro Scheme required weighing up the scale, risk (particularly dam break risks), fish passage and local context. Other water storage facilities I have been involved in, including on the Canterbury Plains and foothills has also required planning assessments. Drawing from those experiences, I do not concur that the prohibited status is warranted for instream dams.
- 68 In particular, the enabling purpose of the RMA should not preclude the opportunity to seek consent for an instream dam, because:
- 68.1 certain scaled dam designs can provide fish passage;
- 68.2 dam-break risk assessments can be mitigated through the scale, design, how the dam can operate and manage issues such as sediment and the ability to reverse the effects (removal of dam) in a managed way;
- 68.3 dams can be designed to create an enhanced landscape amenity and ecology that has the potential to improve; and

68.4 communities can thrive from the construction and ongoing operations of dams, including recreational values.

- 69 Extracts from the Commissioners Preliminary Recommendation are provided in the section 42A report (paragraph 15.17). The Officers Report in paragraph 15.18 aligns with the Zone Committees sentiments from Malvern Hills Protection Society, at least in the context of the dam consent previously sought. A prohibited status deters any other (more appropriate scaled and designed) dams being sought through the RMA process, which in this instance I do not consider to be consistent with the enabling provisions of the RMA and understanding the design and technological advancements in dam designs and the associated operations.
- 70 In my opinion, a discretionary status for instream and off-line dams is more appropriate. Justifying the effects and consistency with plan policy provisions should be necessary, which requires reliance on the NRRP (Chapter 5 and 6 – Water Quantity and Bed of Lakes and Rivers (Rule BLR5)). There are numerous opportunities to mitigate the effects of a dam, including scale, location, geomorphology, water catchment, secondary benefits and those matters I have listed in [68.165-1](#) to [68.465-4](#).

#### **OVERSEER®**

- 71 I have relied on **Mr Lowe's** evidence regarding the role of OVERSEER® in terms of it being used as a compliance tool. My understanding of this is that the manner and management of information needs to be consistent for decision making purposes. OVERSEER® version control is not tied to Variation 1, or an ability to make multi (past) year comparisons when OVERSEER® has changed. This will impact on the demonstration of compliance from distorted findings from the different Overseer versions.
- 72 As set out in **Mr Ford's** evidence (and discussed further in **Mr Lowe's** evidence, solutions to this issue could include:
- 72.1 updating the version of OVERSEER and requiring all future compliance to be assessed using that earlier version of OVERSEER (even if subsequently superseded by a later version). This might seem relatively straight forward but as **Mr Ford** notes it is the current policy of the owners of OVERSEER to either update the online version and to date stamp downloadable versions so that old versions of the programme are not available after a relatively short time period. This means that accessing the relevant version is not possible unless an approach is made to the owners directly. Were this approach adopted I consider it is more than likely that a partnership would have to be entered into between the

owners of the model and the Council to ensure easy and constant access to the model – although it also needs to be acknowledged that relying on a single version prevents subsequent and potentially more accurate versions being applied; or

- 72.2 including a mechanism within the planning framework that allows the relevant nutrient limit to be updated using the latest version of OVERSEER. This update would need to be undertaken using the same inputs (soil type, climate, farming systems etc) that were relied on when doing the original OVERSEER modelling. Individual compliance would then need to be re-assessed using the same version of OVERSEER.
- 73 Whatever approach is chosen it is important it is either one or the other – otherwise, from a planning perspective (and given the nature of OVERSEER® as a relative rather than absolute model) the plan would effectively be using an ‘apples’ versus ‘oranges’ comparison for the purposes of compliance.

#### **FARM ENTERPRISES (RULES 11.5.10 AND ASSOCIATED POLICIES)**

- 74 CPWL is supportive of farming enterprises as a means of nutrient sharing among CPW Scheme members. However, it seeks some flexibility in the farm enterprise regime.
- 75 CPWL also seeks to ensure that where a farm enterprise is formed, it does not erode the allocation of N to the CPW Scheme, again assuming that existing irrigators remain part of the CPW Scheme N loss cap. If irrigators do remain part of the scheme N loss cap then it is unlikely the rule will be required as there will presumably be significantly reduced opportunity on recently converted properties with a comparatively low N load to share nutrients.
- 76 Subject to the above, CPW seeks to include a note that applies to the farming enterprise rule and/or the calculation of the load in Table 11(j) such that:
- If a member of a farming enterprise also receives water from an irrigation scheme, then compliance for irrigation scheme with the total scheme nitrogen limit in Table 11(j) shall be based on the individual nitrogen baseline of the relevant member and not its share of the total nitrogen load available by virtue of any farming enterprise.
- 77 Again, management at a ‘Farm Enterprises’ level can provide a more efficient and effective manner to achieve the objectives sought by Variation 1.

**GROUNDWATER TRANSFERS (RULES 11.5.37 AND 11.5.38 AND POLICY 11.4.22)**

- 78 CPWL seeks to remove some of the restrictions relating to groundwater transfers in Rules 11.5.37-38 and Policy 11.4.22. In particular, CPWL seeks to ensure groundwater can be transferred from land irrigated by CPW Scheme members to the CPW Scheme or to land also owned by the same CPW Scheme member (either in or outside of the CPW Scheme).
- 79 Relaxing the restrictions on groundwater transfers, and improving transfer flexibility, for CPW scheme members will result in members being able to transfer groundwater to within the CPW scheme. This will enable the permits to be held on a scheme basis for the purpose of bolstering reliability and ensuring the CPW Scheme has sufficient water allocation to operate. This is important when considering other potential restrictions on water allocation.
- 80 **Mr Ian McIndoe** has provided evidence based on the calculation of additional groundwater within the scheme area (150 million m<sup>3</sup>/y of water into the groundwater system and an assessment that the groundwater system will be 225 million m<sup>3</sup>/y better off than it is currently) as a result of CPW.
- 81 In achieving the changes expected from Policy 11.5.37 and 11.5.38, the Council can better demonstrate consistency with Objective B3 in relation to 'improve and maximise the efficient allocation of water' from those transfers. Also the Council can justify these changes on the basis that CPW members should not be unfairly penalised and there should not be disincentive to join CPW, when CPW is enabling the majority of environmental improvements.
- 82 If the existing Variation 1 provisions remain, I think there would be greater risk that farmers seek to maintain their existing groundwater, reducing the reliant on CPW water, which has corresponding effects on the amount of alpine water entering the catchment and consequential benefits. Without transfer provisions, I would predict that council will be in the predicament of declining groundwater permits when renewals are sought.
- 83 **Mr McIndoe** outlines how reliable water needs to be for shareholders (97%), and why that will motivate existing shareholders and consent holders of groundwater abstraction to have and hold onto both sources of groundwater. While a 50% reduction would claw some of this groundwater back if transfers occur, the reduction does not address the core of the issue for the development of the CPW scheme and all the associated benefits of the scheme, being scheme reliability.

- 84 In respect to Council Officers' assertion in paragraph 14.33 of the S42A Report, I disagree that just because transfers occur; groundwater will be abstracted. Potentially, that might seem the obvious consequence, however on better understanding of farm vulnerability, transfers can be sought to provide protection if CPW water is less reliable (i.e. more so as an insurance).
- 85 In drawing from my earlier evidence, the transfer plan provisions and flexibility enables those farmers and growers who have invested in capital and investment portfolios or identities (such as Farm Enterprises) the ability to gain from efficient allocation and productive outcomes.

### **CONCLUSION**

- 86 My evidence has focused on how the full CPW Scheme needs to be accommodated in Variation 1, which is intended in the supporting statutory planning framework. My evaluation is that Variation 1 has an opportunity to empower landowners and those shareholders (and future shareholders) of the CPW Scheme to meet the objectives of Variation 1, or certain provisions may erode that empowerment. The CPW Scheme can provide for benefits that need to be weighed up against the cost of taking longer to achieve the objectives of Variation 1.
- 87 I have outlined why it is critical for CPWL to be able to seek additional water from dams and water harvesting, and without such certainty demand for groundwater will not decrease, however equally groundwater transfers and use of those permits benefits farmers in terms of the flexibility sought.
- 88 Other evidence has highlighted the assumptions, variability and lack of robust in inputs that has shaped the planning package. My view is that Variation 1 ought to take small steps to improve the management of resources, as the implications of larger step-changes has significant impacts on CPW and the ability and desire of people to engage and commit to CPW scheme.

Dated: 29 August 2014

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Hamish John Peacock