

BEFORE THE CANTERBURY REGIONAL COUNCIL:

UNDER The Resource Management Act 1991

AND

UNDER The Environment Canterbury
(Temporary Commissioners and
Improved Water Management) Act
2010

AND

IN THE MATTER OF Proposed Plan Change 5 to the
partially operative Canterbury Land and
Water Regional Plan

MEMORANDUM OF LYNDA MARION WEASTELL MURCHISON
on behalf of
JG & LM MURCHISON (ID 67179), JKW HOBAN & ORS (ID 67198)

23rd August 2016

MAY IT PLEASE THE HEARINGS PANEL:

1. My name is Lynda Marion Weastell Murchison. On 26th July I filed planning evidence in support of submission by JG & LM Murchison (ID 67179) and JKW Hoban & Others (ID 67198).
2. Upon re-reading my evidence in preparation for the hearing I have found to my embarrassment several typographical errors. I have included a list of errata in this is memorandum along with a version of my evidence with the corrections shown in track changes. I believe these errata relate to spelling or grammar only and do not change the meaning or intent of my evidence.
3. While I do not claim to be a proficient typist, the number of errors in my evidence is somewhat greater than usual. I sincerely apologise for this poor standard of proof-reading. The Hearings Panel will be aware I was somewhat unwell during the time this evidence was prepared and the combination of medication and being unable to sit has impaired my preparation.
4. I thank the Hearings Panel again for their understanding and apologise for any inconvenience.



Lynda Weastell Murchison

23rd August 2016

**ATTACHMENT ONE – LIST OF ERRATA AND CORRECTIONS TO EVIDENCE OF
LYNDA MARION WEASTELL MURCHISON**

1. Para 18, 3rd line, insert the word 'to' between the words 'is' and 'reinforce.'
2. Para 19, 2nd to last line, amend the word 'use' to read 'used.'
3. Para 21, 4th line, delete the word 'the' and 5th & 6th lines, delete the text from '(In his...' to 'never bare.'
4. Para 23, 2nd line replace the word 'that' with 'the.'
5. Para 26(i), 2nd last line, replace the word 'better' with 'be.'
6. Para 31, 1st line, insert the word 'a' between the words 'for' and 'regulatory.'
7. Para 32, 2nd line, insert the word 'year' between the words 'the' and 'exceeds.'
8. Para 41, 5th line, insert the word 'on' after the word 'Relying.'
9. Para 43, 1st line, insert the words 'necessary to' after the word 'is.'
10. Para 48, 3rd line, insert the word 'of' after the word 'concept;' and 4th line insert the word 'cattle' after the word 'grazed.'
11. Para 51, last line, insert the word 'of' after the word 'greater.'
12. Para 52, 3rd line, amend "Lake Sensitive Zones' to read 'Sensitive Lake Zones.'
13. Para 67, 3rd line, amend 'Browne' to 'Brown.'
14. Para 68, 7th line, amend '10/ha/ha/yr' to read '10kg/ha/yr.'
15. Para 77, 4th line, after the word 'clear' insert a semi-colon.
16. Para 86, 1st line, amend 'Lake Sensitive Zones' to read 'Sensitive Lake Zones'
17. Para 87, 2nd line after the word 'zones' the words 'should be managed.'
18. Para 94, last line amend 'have' to 'has.'
19. Para 106, 3rd line, amend '5kg/ha/y' to read '5kg/ha/yr.'
20. Para 112, 5th line, replace 'for' with 'of.'
21. Para 116, last line, insert the word 'of' after the word 'bit.'
22. Para 118, 2nd line, amend 'Lake Sensitive Zones' to read 'Sensitive Lake Zones.'
23. Para 129, last line, amend 'an' to read 'and.'
24. Para 132, 2nd line, amend the word 'desire' to read 'desired.'

BEFORE THE CANTERBURY REGIONAL COUNCIL:

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Management) Act 2010

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IN THE MATTER OF Proposed Plan Change 5 to the partially
operative Canterbury Land and Water
Regional Plan

STATEMENT OF EVIDENCE OF LYNDA MARION WEASTELL MURCHISON
on behalf of
JG & LM MURCHISON (ID 67179), JKW HOBAN & ORS (ID 67198)

26th July 2016

INTRODUCTION

1. My name is Lynda Marion Weastell Murchison.
2. I hold a Master of Arts degree in geography (First Class honours) from Canterbury University and certificates of proficiency in Natural Resource Law (LAWS 304) and Advanced Resource and Regional Planning (ERST 604) from Canterbury and Lincoln universities respectively. I also hold a National Certificate in Agriculture (Level 3) from the Open Polytechnic of New Zealand. I am a full member of the New Zealand Planning Institute and have completed hearing commissioner accreditation. I currently hold the Roper Scholarship from Canterbury University for study towards a PhD in science. My chosen field of study is traditional environmental knowledge among farmers in Canterbury and how this can be used to improve environmental management.
3. I have worked in the field of resource management for over 20 years, holding senior and managerial positions for Selwyn District Council, Canterbury Regional Council (Environment Canterbury), where I was Planning Manager Air and Rivers and then Principal Planning and Consents Adviser (2008-2012), and Te Rūnanga o Ngāi Tahu. I have also run my own consultancy. I currently lecture courses in environmental and resource management in the Geography Department at Canterbury University and undertake contract planning work. I have also worked as a sheep and beef farmer in partnership with my husband for 17 years.
4. I have worked extensively in drafting district and regional plans and plan changes, and processing resource consents. I drafted Chapter 7- Freshwater of the Canterbury Regional Policy Statement (CRPS) as notified; and led the drafting of four regional catchment plans and the early development of the Canterbury Land and Water Regional Plan (CLWRP). I led the processing of applications for amendments to the National Water Conservation orders for Te Waihora/Lake Ellesmere (2010) and the Rakaia River (2011), and the imposing of moratoria on water permit applications on the Hurunui and Waiau catchments under the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 (ECan Act). I appeared before this panel to give planning evidence on the proposed CLWRP on behalf of JG & LM Murchison.
5. I am currently the Provincial President of the North Canterbury Province of Federated Farmers of New Zealand Inc and a delegate on the National Council of Federated Farmers of New Zealand (FFNZ). I also chair the Regional Policy Committee of the Combined Canterbury Provinces of Federated Farmers. These are governance positions.

Code of Conduct for Expert Witnesses

6. While this is a local authority hearing, I confirm that I am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2011) and that I have complied with it in preparing this evidence. In particular I confirm that my evidence is within my area of

expertise and the opinions I have expressed are my own except where I have stated that I have relied on the evidence of other people. I have not omitted any facts known to me that may be material in influencing my evidence.

EXECUTIVE SUMMARY

7. In summary I support the general tenor of the provisions in Plan Change 5 (PC5) as adding value to the CLWRP. In particular I support:
 - (i) The provisions for farming activities which do not involve substantial areas of irrigation or winter cattle grazing as permitted activities,.
 - (ii) The provisions for managing other farming activities as a restricted discretionary activity, which enables the resource consent process to be used to facilitate assessments of estimated N losses.
 - (iii) The greater emphasis on implementing good management practices (GMPs), because it is actions on the ground that will improve water quality outcomes.

8. I believe the efficacy of PC5 in implementing the objectives of the CLWRP could be enhanced through amendments to the way policies are written and to specific rules and definitions. These changes are based on:
 - (i) Rewriting some policies as effects-based policies;
 - (ii) Amending some of the conditions for permitted activities to better provide for all farming activities that have low N losses;
 - (iii) Amending the provisions for restricted discretionary activities so the emphasis is on whether an activity is operating at GMP by 01 July 2020, rather than generating a Baseline GMP Loss Rate in the Farm Portal; and
 - (iv) Amending some provisions to improve their clarity and certainty, or to ensure they relate to the Council's statutory functions under the Resource Management Act 1991 (RMA).

9. These amendments are discussed in my evidence. A copy of my suggested amendments to PC5 is included in an attachment.

SCOPE OF EVIDENCE

10. I wrote a submission on PC5 (JG & LM Murchison (67179)) and I am giving planning evidence in relation to that submission and submissions made by JKW Hoban and Others (67198). My evidence addresses the following matters:
- (i) Our Farm Situation
 - (ii) General Comments on PC5
 - (iii) Provisions for Permitted Activities
 - Farm Portal
 - Rules for winter grazing & irrigation
 - Farm Management Plans (Schedule 7A)
 - Good Management Practices (GMPs)
 - Other rules for permitted activities
 - (iv) Provisions for other activities
 - Definitions N Baseline & Baseline GMP Loss Rate
 - Use of Baseline GMP Loss Rate & Alternatives
 - Prohibited Activity Status
 - Farm Environment Plans (Schedule 7)
 - Sediment/Phosphorous Risk Zones
 - Green and Light Blue Zones
 - Lake Sensitive Zones
 - (v) Recommended amendments to PC5.
12. In preparing my evidence I have considered:
- (i) The partially operative CLWRP, PC5 and supporting information.
 - (ii) The relevant provisions of the RMA, in particular its purpose and principles (s5-8) and the provisions relating to preparing regional plans (s32, 63 and 65-68).
 - (iii) The National Policy Statement for Freshwater (2014) (NPSF) and the Canterbury Regional Policy Statement (CRPS), being matters which a regional plan must give effect to under the RMA (s67(3)).
 - (iv) Te Whakatau Kaupapa – Resource Management Strategy for Canterbury, Te Rūnanga o Ngāi Tahu Freshwater Policy, and the following iwi management plans: Te Pōhā o Tohu Raumati (2009), Mahaanui Iwi Management Plan (2013), Te Taumautu Rūnanga Iwi Management Plan, and Iwi Management Plan of Kati Huirapa-Arowhenua (1992), being

relevant iwi planning documents which the Council must take into account when preparing a plan or plan change (s66(2A)(a)).

(v) The Canterbury Water Management Strategy (CWMS), in particular the visions and principles being a matter which the Council must have particular regard to under the ECan Act 2010 (s63).

(vi) Relevant submissions and the S42A Report.

13. Given PC5 does not propose any amendments to the objectives of the CLWRP, I have focussed my planning assessment primarily on whether the provisions in PC5 are the most appropriate method to implement the objectives of the CLWRP. I have paid particular attention to:

(i) The functions of the regional council under s30 of the RMA because the purpose of a regional plan is to assist the council to carry out its functions to achieve the purpose of the RMA (s63);

(ii) The council's duties under s32 of the RMA;

(iii) Whether the provisions may render land incapable of reasonable use (s85); and

(iv) The relevant directions for regional plans under the NPSF and the CRPS.

OUR FARM SITUATION

14. My husband and I have two properties within the Canterbury Region which are affected by the CLWRP and PC5; one property at Lake Coleridge and one, where we reside, near the Weka Pass in Hurunui District. Both properties are dryland sheep & beef properties. Our Lake Coleridge property is zoned Green for water quality; the Weka Pass farm is zoned Red. I believe our farming activities are permitted activities on both properties under the current rules in the CLWRP and under PC5 as notified.

15. The Murchison Family has farmed at Lake Coleridge since 1878. We purchased the Hurunui farm – the Dry Weka in 2008 and a neighbouring block in 2011. When we bought the Dry Weka it was running an Angus cattle stud; a Polworth sheep stud and a 500 ewe breeding flock; and dairy support for 600 cows and 200 heifers. We purchased the farm because the soil types and geography make it an ideal property for finishing mid-micron hoggets and early spring lambs.

16. We currently farm the property as a mixed breeding and finishing farm. We have a breeding flock of Corriedale ewes and each autumn we buy in around 3000 Merino and half-bred hoggets and 40-50 Angus or Angus/Hereford steer calves from the high country. By early October all hoggets are gone. Our own lambs are finished and our cull ewes sold by early December. Over summer we carry only our core breeding ewe flock (about ¼ of our total stock units). Our calves may be sold in December or kept until April depending on summer feed.

17. While the above is our 'base recipe,' depending on the weather and associated plant growth we may buy in fewer Merino hoggets at the end of February. We will then buy in cross-bred lambs from Southland in April/May, and/or additional in-lamb ewes, once the rains come and feed grows. In 2014 we had an extremely wet March/April and our ryegrass out-competed our rape in our fodder crops reducing our dry matter yield. Consequently, we purchased 800 fewer hoggets than 'normal'. Last year we carried only about 100 hoggets and 400 breeding ewes through the drought until July, when we had sufficient feed to purchase over 2000 ewes with lambs at foot. This winter we have about 950 ewes, 1100 hoggets and still no rain.
18. By end of this year we will have purchased an additional ewe block. From that point the Dry Weka will be used solely as a finishing farm for hoggets, calves and our own lambs. If my trial plots are successful, a small area will also be used to grow saffron. The purpose of this information is to reinforce the diversity of dryland farming depending on the season and the interests of the owner. In my view that diversity is an essential part of being able to make reasonable use of farm land.
19. We have undertaken a significant investment in soil management and pasture improvements on the Dry Weka over the last eight years. We use a biodynamic soils management programme through Abron. This approach focuses on both the chemical and biological health of the soil. Rather than applying fertiliser as a supplement for soil nutrients, the programme uses lime (Ca) and micronutrients to promote cation exchange and biological activity within the soil, making the soil's own nutrients more readily available for plant uptake. The programme involves rigorous soil examination and testing and paddock-specific fertilizer blends. It is a system we have used on our farms since 2002.
20. On Abron's recommendations we apply a small amount of nitrogenous fertiliser to our winter fodder crops after they have struck (usually in early March). Our advice is that this practice is important to encourage deep rooting, strong plants. In the one year we did not do this, we had a noticeable N deficit in our winter fodder crops and poor dry matter yields. Professor Derek Moot (a plant scientist at Lincoln University) advised me that applying a modest quantity of nitrogenous soil to fodder crops sown in early autumn, will not result in N leaching from the soil as the N is being applied during a period when soil moisture is below capacity, soil temperature is warm and plant growth is active. Yet I understand the practice of applying nitrogenous fertiliser to fodder crops on sheep and beef farms is not considered GMP in the N proxy in the Farm Portal.
21. We have replaced over 150 hectares of short rotational ryegrass with dry tolerant permanent pasture mixes and lucerne. We use rape and ryegrass mix as our winter fodder crop. This means we have to put more of the farm into fodder crop to get the same dry matter yield as a person sowing only ~~the~~ a single-species forage crop (such as kale or fodder beet), but it reduces our potential N and sediment/P footprint because our fodder paddocks are never bare. ~~(In his~~

~~forage crop, but it reduces our potential N and sediment/P footprint as our fodder paddocks are never bare.~~ (In his evidence Mr Dan Shand explains using this technique on his property.) This is a fairly common practice on sheep and beef farms, yet I understand from Ms Hyde that Overseer™ does not recognize and allow for it in estimating N loss from fodder crops.

22. The examples I have just given of good management practices that are not recognized in Overseer™ or the GMP proxies, are examples of why PC5 needs flexibility to use the 'base standard' GMPs and numbers where they work, but equally recognize and accommodate farm practices that have better environmental outcomes even if they can't be measured in Overseer™ or are not in accordance with the Industry Agreed GMPs. These farmers should not have to adopt poorer practices with greater environmental effects just so they can comply.
23. For the last four years we have worked with Mr Leo Fietje from Environment Canterbury to get a N loss estimate in Overseer™ for the Dry Weka. Given the ~~eat~~ potential variability in our farm stocking rates each year, we have modeled our 'basic recipe' described above. This is a workable approach if we only have to establish a single N loss estimate for our farm to show we are a low N loss farming activity. It is challenging and expensive if we have to do a N loss calculation every year.
24. My understanding from Mr Fietje is that we cannot get a true N loss estimate because of a 'bug' in Overseer™ related to metabolisable energy (ME) requirements for lambs/hoggets. However our 'best guess' N loss estimate is either 6kg/ha/yr or 11kg/ha/yr depending on whether we use the rainfall records for our property or the rainfall records from the nearest NIWA gauge. Interestingly as we have been 'shopping' for our breeding block over the last few months, most of the properties we have looked at have Overseer™ N loss estimates between 6kg/ha/yr and 12kg/ha/yr depending on average rainfall.
25. Given the Dry Weka had wintered 800 dairy cattle the year we purchased it, if we had continued this land use we would have a substantially greater N Baseline than what we have from the scenario I gave Mr Fietje. I am proud of the improvements we have made to soil health and pasture production on this farm; and glad that we may well have made a contribution to reducing N losses in a catchment which, due to the high natural P levels in the Waipara River, is sensitive to nutrient enrichment.

PC 5 - OVERALL APPROACH

26. I believe PC5 offers more appropriate methods by which to implement the objectives of the CLWRP in relation to the effects of farming activities on water quality than the current provisions in the CLWRP in the following ways:

- (i) Replacing the requirement for every farming activity to undertake an Overseer™ assessment every year to establish a N loss calculation with a permitted activity land use rule improves certainty and reduces compliance costs for many farmers. However, I believe Rules 5.43A, 5.409A, 5.53A and 5.57A would be better a more appropriate method with some amendments to the conditions, as discussed in my evidence.
- (ii) Using the resource consent process to assess and manage the effects of N losses from farming activities which are not permitted activities is more appropriate than the current rules. Use of the resource consent process and Farm Environment Plans shifts the focus from achieving numbers in Overseer™ to achieving actions on the ground; it is the latter which will affect water quality. The consent process also provides an opportunity for the applicant and consent authority to assess proposed changes in land use and associated changes in nutrient losses more closely than in a regime where an activity is either permitted or prohibited.
- (iii) In principle, I support the greater focus on GMPs in PC5. This change addresses an issue in the CLWRP whereby farming activities with higher N losses as a result of poor on-farm practices are advantaged when calculating N baselines. However I am concerned about the appropriateness of some of the 'industry agreed' GMPs. This issue can be addressed, as I discuss in my evidence.

PERMITTED ACTIVITIES

Farm Portal

27. Environment Canterbury has established an on-line Farm Portal system. It appears to have two functions:
- (i) Every farm over 10ha must be registered in the Farm Portal and questions about use of irrigation water, winter grazing, and having a farm plan answered, to ascertain if the farm is likely to be a permitted activity.
 - (ii) To provide an N Loss estimate for the farming activity adjusted for GMP. This is done one of two ways: for permitted activities, farmers answer some questions about the farm location and land use activity; for other farming activities farmers upload their Overseer™ files.

28. I do not agree that it is necessary or appropriate that registration in the Farm Portal should be a condition for a permitted activity in condition 1 of Rules 5.43A, 5.409A, 5.53A and 5.57A. These rules establish the conditions under which a farming activity is unlikely to have nutrient losses that warrant management through a resource consent and Farm Environment Plan. If an activity meets these conditions the environmental effects are the same irrespective of whether the farm is registered in the Farm Portal.
29. The purpose of a regional plan is to assist a council to carry out its functions to achieve the purpose of the Act (s63) and under s32 the council has to be satisfied the provisions are the most appropriate to implement the plan's objectives. Under s84 of the RMA a council is required to observe and enforce the observance of the plan. In my view the council should consider whether any rules in the CLWRP (including any conditions) are necessary to manage the effects of activities on water quality; and whether they are conditions it will enforce.
30. I am aware people are having technical difficulties with the Farm Portal. In my case the Portal freezes once I enter our livestock numbers and will not progress to the next step. I am not sure if that means I am registered.
31. I do not agree the Farm Portal operates in a way which is appropriate for a regulatory authority gathering information on compliance with rules that have the force of regulations in statute. People answer a series of questions about their farming operation, which essentially gives the regulator the data to enable them to check compliance with the plan rules. However people entering the Portal are not advised of this situation nor told what the rules are for permitted activities before they answer the questions.
32. For farming activities that are not permitted activities, whether your activity is restricted discretionary or prohibited depends on whether your N loss calculation for the year exceeds your N Baseline, and from 01 July 2020 your Baseline GMP Loss Rate. There is no issue with the first requirement; any person with the appropriate expertise can calculate their N Baseline and N Loss Calculation. However the Baseline GMP Loss Rate is generated within the Farm Portal. Schedule 28 outlines the protocols and proxies used to calculate Baseline GMP, to the best of my knowledge, there is not the ability of an individual to establish their Baseline GMP Loss Rate without submitting their information into the Portal. I believe this creates issues around certainty for people knowing the status of their activity; and for the council in being able to assess in this process whether the activity status is appropriate, particularly the prohibited

activity status for existing activities that may exceed the Baseline GMP Loss Rate in Red and Sensitive Lake zones.

33. These issues can be addressed through the following steps:
- (i) Not requiring registration in the Portal as a condition of a permitted activity;
 - (ii) Informing parties who do register in the Portal the rules for permitted activities before they answer any questions.
 - (iii) Establishing appropriate protocols for how personal farm information will be kept, who will have access to it, and whether it can be used by the Council or any other party as evidence of non-compliance with the plan.
 - (iv) Providing a down-loadable copy of the GMP proxies to enable people to be able to calculate a Baseline GMP Loss Rate for their farm before submitting their data into the Portal.
 - (v) Amending the way the planning regime uses the Baseline GMP Loss Rate numbers as discussed in paragraphs 83 to 85 of my evidence.

Catchment Accounting

34. I understand one of the reasons for requesting permitted activities to register in the Portal is to assist with catchment accounting as required under the NPSF Objective CC1 and Policy CC1(a). I do not believe that registration in the Portal is necessary or particularly effective for that purpose.
35. In his evidence Mr Hodgen (para 9.2 pp 7-8) describes his GMP number from the Farm Portal relative to his OverseerTM baseline. I have not been able to generate a GMP number for the Dry Weka but from the questions asked in the Portal I suggest the GMP number given can only be a very rough estimate. For example: the questions on livestock do not distinguish between classes of stock. As described in paragraph 16 we run a combination of breeding ewes and hoggets. A ewe with lamb at foot is 1 stock unit (su); a hogget is 0.6su. If I count our ewes and hoggets as one sheep each (as the Portal asks) then we have 3800 sheep; if I count them by stock unit (as OverseerTM requires) we have 2500. Similarly the Portal asks us for the amount of land we have in cultivation but not the soil types or cultivation methods. The soils we use for fodder crops make a significant difference to our N losses.

36. I do not believe using the Farm Portal to calculate N losses from permitted activities is likely to be more accurate than the information Environment Canterbury obtains from studying land use data and making approximations of likely N losses; which it presumably did when setting catchment load estimates in plan changes 1, 2 and 3 to the CLWRP. I also believe it can be no more accurate and possibly less so than the information already gathered by Statistics New Zealand in the annual agricultural statistics survey. If Environment Canterbury wants to secure land use information to help in catchment accounting, I believe such information gathering should be decoupled from the rules for managing effects of land uses on water quality.

Irrigation Rules

37. Irrigation per se does not necessarily result in significant increases in N losses from farming activities. Depending on the quantum of land irrigated and the reliability of supply, irrigation can enable higher stocking densities than dryland farming; and can support some farming activities that otherwise could not occur on lighter soils in Canterbury due to summer moisture limitations, eg dairying.
38. In her evidence Ms Hyde states (para 5.1, p.4) that in her experience the difference irrigation makes to estimated N loss numbers depends principally on how the irrigation is managed and the land use it supports, rather than the amount of land area irrigated.
39. From a planning perspective, I believe the area of land irrigated is relevant in that it is indicative of one of two types of irrigation in Canterbury;
- (i) Irrigation of small areas in support of a dryland farming operation. This form of irrigation may reduce some of the risk in dryland farming by providing more certainty around the growth of pasture or fodder crops on the shoulder seasons (autumn and spring), or supporting diversification into small-scale high value crops such as horticulture or small seeds.
 - (ii) Irrigated farming, where irrigation is over a sufficient quantum of the farm and is of sufficient reliability that it enables stocking rates or land uses that are not possible on dryland.
40. In her evidence, Ms Hyde (para 5.2 p.4) suggests that irrigation of an area of no more than 10% of the farm is of the first irrigation type described above. Therefore I support the amendment suggested in the submissions of JKW Hoban and Others to Rules 5.44A(2), 5.54A(2) and 5.57B(2) to allow irrigation of up to 50ha or 10% of the total land area of the farm, whichever is greater.

41. In Red zones, Rule 5.44A(3) places a further limitation on irrigation. If the farming property currently irrigates less than 50ha of land then there can be no increase of more than 10ha in irrigation as a permitted activity. I am unclear why PC5 assumes that existing irrigation of up to 50ha of a farm will not result in N losses that need to be managed through the resource consent process, but that new irrigation of more than 10ha will. Relying on the evidence of Ms Hyde I would have thought newer irrigation systems using more modern methods are likely to leach less than older operations.
42. The prolonged two year drought in North Canterbury has demonstrated the enormous potential cost associated with dryland farming. While up to 50ha of irrigation will not avert the need to manage for dry summers and drought conditions, it could allow farmers to irrigate lucerne crops for hay or balage; finish lambs to greater weights before having to sell; or to have some income diversification into an arable or horticultural crop. It will not, on any farm, enable a conversion to dairy or year-round dairy support. Any potential increase in the opportunity to provide winter dairy support is managed through the conditions limiting winter cattle grazing.
43. Therefore I do not think the additional 10ha restriction in Red zones is necessary to implement the CRLWP objectives or give effect to the NPSF. I come to this conclusion not by accepting a trade-off between water quality and socio-economic well-being; but because I believe the potential adverse effects on water quality from N or sediment/P losses associated with this sort of activity are minor and will give effect to the NPSF, including Objectives A1 and A2. I support the requests in submissions by JKW Hoban and Others to allow up to 50ha of irrigation or 10% of the area of the property, whichever is the greater as a permitted activity.

Winter Grazing

44. Rule 5.44A(4) and Rules 5.54A(3) and 5.57B(3) limit the amount of winter grazing that can occur on a farm as a permitted activity to not more than 20ha. Many parties have made submissions on this rule recommending alternative thresholds. Some submitters have also suggested amendments to the definition of winter grazing. Winter grazing is defined in PC5 (p3-3) as:

"means the grazing of cattle within the period of 2 May to 30 September, where the cattle are contained for break-feeding of in-situ forage crops or supplementary feed that has been brought onto the property."

45. My understanding is that urine patches from cattle grazing at intensive stocking rates on lighter, free-draining soils in the winter can be a cause of higher N losses in farming activities. Unfortunately the definition of winter grazing in PC5 captures most forms of cattle grazing including extensive grazing as part of ~~a~~-sheep & beef operations where N losses are relatively low. This occurs because the definition does not refer to any stocking density; and because it refers to feeding any fodder crop or supplement.
46. I agree with the evidence of Mr Shand (paras 7-8, p2) that it is a normal part of any livestock farming in Canterbury to feed livestock supplementary feed (including hay and balage) in winter. It is also quite common to break-fence paddocks, even when they are not heavily stocked, to prevent cattle from trampling and spoiling feed or to keep them out of waterways.
47. The amendments to the definition suggested in the s42A Report recommends removing the feeding of supplements from the definition. This amendment partially addresses the issue but it does not deal with the issue where extensively grazed cattle may be contained behind a break-fence in a paddock of rape and grass to save the crop (or in North Canterbury's case ration the crop through winter drought), or to exclude them from access to waterways.
48. This issue can be addressed by amending the definition of winter grazing along the lines suggested in the submission of JG & LM Murchison and others; basically introducing the concept of a minimum stocking rate for cattle grazing of 15su/ha which is 3 beef cattle or 2.5 dairy cows. In my mind this stocking rate would exclude extensively grazed cattle where a break fence is used to contain them for whatever reason, but is sufficiently low that it will apply to any true break-feeding of cattle on forage crop in a winter situation.
49. The second issue is whether, with an amended definition of winter grazing, the 20ha threshold is appropriate. The likely N losses from intensive grazing of cattle in winter depend on what proportion of the farming operation is used for this activity. For example, on a 20ha property, if all 20ha is used for intensive winter grazing of cattle total N losses will be relatively high, whereas on an extensive property of several hundred hectares, substantially more land area could be put into intensive winter cattle grazing while overall N losses will be much lower.
50. JKW Hoban and Others have suggested using the greater of 30ha or 10% of the farm. The submission from JG & LM Murchison suggests managing the number of cattle grazed at more than 15su/ha (2.5 dairy cows/ha). This suggestion still runs into the same issue that on a large

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property substantially more cows can be grazed at an intensive level and overall N loss remains low compared with a smaller property.

51. Ms Hyde suggests (para, 4.1-4.2 pp3-4) that farms which have no more than 10% of their total land area in intensive cattle grazing retain relatively low N loss estimates. Therefore in my view the amendment sought by JKW Hoban and Others to amend Rule 5.44A(4) and Rules 5.54A(3) and 5.57B(3) to allow the winter grazing of cattle on up to 10% of the total area of the property is appropriate. I do not have any evidence to indicate whether the proposed increase suggested in this submission from 20ha to the greater of 30ha or 10% of the property makes any material difference to N losses.

Farm Management Plans

52. Rule 5.44A(5), 5.54A(4) and 5.57B require every farmer to prepare a Farm Management Plan that meets the requirements of Schedule 7A, to keep it, and provide it to Environment Canterbury on request. Under the current CLWRP, other than in the ~~Lake~~-Sensitive Lake Zones, only those farmers with N loss estimates of more than 20kg/ha/yr are required to prepare a farm plan, being an audited Farm Environment Plan under Schedule 7.
53. I do not agree the requirement to prepare and keep a farm management plan as a condition of a permitted activity is the most appropriate method under PC5. Schedule 7A requires the recording of on-farm actions but it does not require them to be undertaken and there is no mechanism to ensure the actions identified are appropriate.
54. As discussed in paragraph 29 of my evidence a provision in a plan should be for the purpose of assisting the Council to carry out its functions to achieve the purpose of the Act (s63). It should be the most appropriate method to do that (s32) and the Council is required to enforce those rules (s84). I question whether enforcing this condition on every landholder with more than 10ha of land is an efficient and effective use of the Council's time and resources.
55. I agree with the evidence of Mr Hoban (para 3.8 p.4 and 3.11 & 3.15, p.5) that farmers are more likely to engage in industry-led farm planning initiatives that provide a benefit to all aspects of their farming operation including environmental factors. From the industry-led farm environment programmes I am familiar with, I believe industry-led programmes will deliver a better result than the Farm Management Plan in Schedule 7A.

56. As an aside, I believe the content requirements listed in Schedule 7A includes information that does not appear to relate to the Council's function of controlling effects of land uses on water quality; eg the requirement to identify areas of significant indigenous vegetation on the farm and neighboring properties that are identified in the District Plan (2(f)), p.6-9

Good Management Practices

57. In my opinion a more appropriate method than either the Farm Portal or Farm Management Plan conditions for permitted activities would to promote good management practices to minimize potential losses of N or sediment/P to water. This method would implement CLWRP Objective 3.24 (p4-4): *"All activities operate at good environmental practice or better to optimize efficient resource use and protect the region's freshwater resources from quality and quantity degradation.*
58. I believe it is appropriate to rely on industry-led initiatives for permitted activities rather than making GMP a condition of a rule. As the evidence of Mr Hoban states (para, 3.13-3.14, p.6) many farmers already adopt industry led good management programmes. I also agree with Mr Ensor (para 7.2 p.6.) that these practices are most effective when they are farm-specific. The adoption of programmes for environmental or animal health management is increasingly a requirement for supply contracts across all farming sectors and each sector has a range of programmes they promote.
59. If the Hearings Panel does not agree with this view, another option is to replace Rule 5.44A(5), 5.54A(4) and 5.57B with a requirement for permitted activities to operate at GMP. The submission of JG & LM Murchison suggests this amendment.
60. I have some concern with some of the 'Industry Agreed GMPs' at least as they apply to sheep and beef farming. I share the view expressed by Mr Ensor (para 7.1 p.5) that some of these GMPs appear overly simplistic. However the relief sought in the submission provides for either the Industry Agreed GMPs or an industry recognized farm management programme.

Other Rules for Permitted Activities

61. Getting the conditions by which farming activities are permitted exact is not quite so important if the plan has another means by which farming activities which do not meet those conditions but have low N losses are able to enjoy some flexibility to increase their N losses to a certain level.
62. Plan Change 5 appears to assume that any farming activity which does not meet the conditions for a permitted activity will have a large N loss footprint. However, in North Canterbury there are vintners, horticultural operations, and extensive dryland sheep and beef properties which irrigate more than 50ha of water but which have low N baselines. Under rules 5.44B to 5.48A, 5.54B to 5.64AB, and 5.57C to 5.59A any activity which cannot meet the rule for a permitted activity is a restricted discretionary activity provided there is no increase in N loss above the N Baseline or the Baseline GMP Loss Rate from 01 July 2020.
63. In its decisions on the CLWRP and Plan Changes 1, 2 and 3, the Council has recognized the need to allow flexibility in N losses for farms with very low N loss estimates. ~~I agree s~~Such flexibility is necessary to accommodate variations in rainfall, temperature, plant growth and production, as well as the need to have flexibility to change farm systems and land uses to respond to changes in market conditions, weather, disease, or personal choice. Farmers who have very low N losses from their current land uses are severely restricted in their land use options if they cannot have any increase in their N losses. Consequently the Council created flexibility caps – levels up to which any increase in N losses is a permitted activity.
64. In my view retaining this sort of flexibility in the CLWRP is essential to avoid rendering some farm land incapable of reasonable use. It is also essential to achieve the purpose of the RMA, give effect to the CRPS (including Objective 7.2.1) and to implement the objectives of the CLWRP, especially Objectives 3.5 and 3.11).
65. Several submissions including those from FFNZ (67199), JG & LM Murchison and JKW Hoban request new rules in PC5 and PC5B for activities which do not comply with the conditions for permitted activities to also be permitted if their N losses estimated in OverseerTM do not exceed a specified level. The submission by JG & LM Murchison and JKW Hoban and Others have suggested limits of 15kg/ha/yr in Red and Orange zones and 20kg/ha/yr in Blue and Green zones. (Sensitive Lake Zones are discussed later).

66. The proposed 15kg/ha/yr is larger than the current flexicap for Red Zones in the CLWRP. Since that plan was developed there has been modeling work done on the contribution which these flexicaps make to overall catchment N loads; including for the Red zones in Selwyn Waihora and Hinds. In both plan changes the 15kg/ha/yr flexicap was found to contribute only a very small proportion of total catchment N load.
67. Peter Brown (Aqualinc) has also undertaken a preliminary assessment of the contribution a flexicap that allows dryland farmers to intensify their land uses would make to the total N catchment load in the Hurunui. Mr Brown found that a 30% increase in farm use intensification in the Hurunui would make less contribution to N load than the savings made by requiring all existing irrigation activities to operate at 80% technical efficiency, His assessment is contained in Attachment One.
68. Relying on the N loss analysis done by Ms Hyde (Attachment One) shows that farming activities which meet the condition for permitted activities on PC5 are likely to have N losses of up to around 15kg/ha/yr depending on soil type and rainfall. Relying on this evidence in combination with the results of modeling work done for flexicaps referred to above, I think a flexicap of 15kg/ha/yr in Red Zones for activities which are not permitted but have low N losses would be comparable with the effects of permitted activities. If the Hearings Panel does not agree, I suggest even restoring the current CLWRP flexicap of 10kg/ha/yr may provide some relief for vintners and horticulturalist who are irrigating more than 50ha and have very low N losses.
69. People operating under this rule would have the cost to undertake an initial N loss estimate in Overseer™ but that cost is substantially less than the cost of the current provisions in PC5 which require those farmers to also prepare and have audited a farm environment plan; obtain resource consent for a restricted discretionary activity; and have no increase in their N Baseline.

Changing Versions of Overseer

70. I understand one of the reasons for introducing the land use rules in PC5 was to remove from the rules references to N loss numbers estimated using Overseer™, due to the frequency with which versions of Overseer™ and therefore the relative applicability of those numbers change. This issue is addressed if the flexicap numbers in the plan are tied to a specific version of Overseer™. The Council could download and make available that version of Overseer™ for that purpose. Given that the N loss numbers being considered are low, I do not believe using a

specified (and eventually outdated) version of Overseer™ for that purpose is likely to result in any material effects on water quality.

71. An alternative suggested in the submission by JG and LM Murchison is to introduce a second land use rule whereby the applicant demonstrates the N losses from the farming activity are no greater than what could occur from a permitted activity on the farm. The submission suggests this could be written as a rule for a permitted activity or, if that is not appropriate, a controlled activity. The proposed rule requires some assessment by the applicant and consent authority around identifying appropriate permitted activity land uses for comparison. For that reason, the Hearings Panel may not agree such a rule meets the test for certainty as a permitted activity.

PROVISIONS FOR OTHER ACTIVITIES

Definition and Application of N Baseline

72. Any farming activity which does not comply with the conditions for a permitted activity is a restricted discretionary activity under Rules 5.44B to 5.48A, 5.54B to 5.64AB, and 5.57C to 5.59A. The conditions of these rules include there being no increase in N losses from the N Baseline and from 01 July 2020 no increase from the Baseline GMP Loss Rate. PC5 includes definitions for both N Baseline and Baseline GMP Loss Rate.
73. The difficulty with the definition of N Baseline is that it requires farmers to calculate their N losses in Overseer™ over a 48 month period from 2009-2013. The average of those losses then becomes the maximum N loss (N Baseline) which cannot be exceeded in any year's N Loss Calculation. In any farming system there will be years when growing conditions are more favorable than others even in fully irrigated systems. The ability to maximise production during favourable growing years is important to balance the years when less favourable growing conditions prevail. I am not referring here to conversions; rather the reality that in a good year crops will yield more, lambing percentages and wool weights will be higher, milk yields greater. Using the average of N losses from four years to create a maximum N Baseline disregards this natural fluctuation.
74. In addition, there is no provision in the N Baseline definition to accommodate people who have changed land uses, gained resource consent for additional irrigation or undertaken development

during the baseline period and not yet given full effect to these changes, except for dairy farm conversions.

75. The submission from JG & LM Murchison requests an amendment to the definition of N Baseline and to the rules to make two key changes. Firstly, N Baseline is calculated using land use data which is representative of the farming activities on the farm; rather than the average N loss estimate from the last four years. Alternatively the N Baseline can be calculated using a land use which is authorized by any resource consent for the property which has not lapsed, not just consents for a dairy conversion. This means that if the farm has been in a development phase, there has been a land use change or production has been affected by drought or other circumstances, the farmer is not penalized by having a N Baseline which is less than their usual N loss or what is a reasonable use of the land.
76. Secondly the rules require an N Loss Calculation when there is a change in land use, not annually. The submission includes a definition of change in land use, which is tied to increases in irrigation or number of weaned cattle grazed on the property, or a change in dairy system. These are the primary factors which I understand may drive increases in N losses.
77. Defining N Baseline in the way suggested in the Murchison submission is possible under PC5 because N Baseline only applies to activities managed through the resource consent process, whereas under the CLWRP N Baseline applies to all farming activities, including permitted and prohibited activities. Therefore the definition must be clear, calculated without discretion. The resource consent process provides an opportunity for an applicant to make a case to the consent authority about what is a reasonable N Baseline for that farming activity, with supporting documentation.
78. The amendments to the rules for when a N Loss Calculation is required requested in the Murchison submission address the issue of fluctuations in N Loss Calculations which are not the result of a change in land use as discussed in paragraph 75. The matters identified in the proposed definition of what constitutes a change in land use are those things which are well recognized as having the potential to make a significant difference to N losses. Policy 7.3.7 of the CRPS requires effects on water quality resulting from changes in land uses be addressed.

GMPs & Baseline GMP Loss Rate

79. The Baseline GMP Loss Rate in PC5 is obtained by registering the farming activity in the Farm Portal and uploading the relevant Overseer™ files. The Portal then calculates a Baseline GMP Loss Rate for that farming activity. Other witnesses have provided evidence on the accuracy or appropriateness of the Baseline GMP Loss Rates that are being calculated in the Farm Portal to date, and in some of the assumptions in the proxies that are used to generate the GMP Loss Rate numbers. From a planning perspective I have several concerns with this approach.
80. As discussed in paragraph 32, I have some concerns with the certainty of a process whereby people have to submit their data to a regulatory authority without knowing the standard (Baseline GMP Loss Rate) they have to comply with. To the best of my knowledge there is currently no ready way in which a person can calculate their Baseline GMP Loss Rate outside the Portal.
81. The definition of Nitrogen Loss Calculation in PC5 states that the most recent version of Overseer™ shall be used. As there often appears to be no correlation between changes in N loss numbers in different versions of Overseer™, it is possible that a person may comply as a restricted discretionary activity one year only to find in a newer version of Overseer™ they do not.
82. In my view the most up to date version of Overseer™ should be used if the N Loss Calculation is used as an assessment tool to compare relative changes in N loss with a proposed change in land use. However if the N loss estimate is to be used as a means to determine compliance with a N loss number in a rule or a condition on a resource consent the N loss number in the rule or condition must be tied to a version of Overseer™ to provide certainty for all parties.

Alternative Approach

83. In my view, the key component of PC5 is to get all farming activities adopting GMPs on farm by 01 July 2020. The Baseline GMP Loss Rate is simply a numeric representation of that. Given the activity is a restricted discretionary activity, there is scope for each applicant to show how they are adopting GMPs through their Farm Environment Plan. Even in the sub-regional sections where a percentage reduction in N loss above GMP is required for some activities, this can be achieved by providing estimates of N loss reductions in the resource consent application

that are anticipated from adopting the management practices set out in the Farm Environment Plan. All the Farm Portal is doing is taking that information and trying to model it.

84. Where the Portal can give an accurate Baseline GMP Loss Rate it can be used as an assessment tool for potential changes in N loss, if that adds value. This approach would also allow the Portal to be adjusted to improve its accuracy and application, without requiring a plan change. The Portal becomes a tool to aid the regulatory system; not the regulatory system.
85. I do not believe activities which cannot have an accurate Baseline GMP Loss Rate calculated in the Portal should have a harder resource consent pathway or more non-compliant status than activities which do. It is not the fault of the applicant that the regulator is using a tool which is not suited to their activity. Nor, in my view, should the onus be on the applicant to demonstrate why the Portal should not be used for their farming activity. In my view the planning authority has a duty under s32 of the RMA to be satisfied that the method chosen is the most appropriate.

Prohibited Activity Status

86. In Red, and ~~Lake~~-Sensitive Lake zones farming activities whose N Loss Calculation exceeds their N Baseline or from 01 July 2020 their Baseline GMP Loss Rate are prohibited activities (Rules 5.48A and 5.51A) . In Orange, Green and Light Blue zones they are non-complying activities.
87. I agree that any increase in N Baselines resulting from conversion of land uses from low to high N losses to water in Sensitive Lake zones and Red zones should be managed. However I have concerns if the prohibited activity status for these activities in PC5 does not allow for:
- (i) Natural fluctuations in N loss that can occur each year without any change in land use.
 - (ii) The short timeframe over which N Baseline is calculated and the N Baseline definition which makes no allowance for people who have changed land uses, developed land or otherwise increased their N losses partway through the baseline period, other than dairy conversions.
 - (iii) Issues with the appropriateness of Baseline GMP Loss Rates calculated in the Portal.
 - (iv) If a land use has very low N losses and has no land use options available to make reasonable use of the land.

88. I would suggest a non-complying activity status is more appropriate in these circumstances. I understand if the Council is hesitant to revert to non-complying status given the difficulties it experienced trying to maintain the groundwater allocation limits set in the Natural Resources Regional Plan (NRRP) in the past. In my view this situation was brought about not by the status of non-complying activity, but by the policy construct in the NRRP which explicitly referred to the allocation limits as 'interim' limits and suggested that if people could demonstrate groundwater was available above the limits it could be abstracted. To my mind this is not an appropriate policy position for a non-complying activity; it is more appropriately implemented by a discretionary activity rule. At that time there was no higher order planning documents with direction around managing to allocation limits.
89. If the Hearings Panel does not agree with this view, I am more comfortable with prohibited activity status in Rules 5.48A and 5.51A if the definitions and rules for farming activities as permitted and restricted discretionary activities are amended along the lines suggested in my evidence as these amendments address the issues raised in paragraph 87.

Farm Environment Plans – Schedule 7

90. Farming activities which are restricted discretionary activities are required to have a Farm Environment Plan prepared in accordance with Schedule 7 by 01 January 2017. These Farm Environment Plans are audited. This rule is similar to that for restricted discretionary activities in the CLWP, except PC5 amends Schedule 7. I have the following concerns with these proposed amendments.
91. The introduction material for PC5 (p1-2) includes a list of sections of the CLWRP amended by PC5 under the heading *Information for the Reader*. A new Schedule 7A and 28 are listed for Part A but no mention is made about amendments to Schedule 7. The amendments to Part B state that new provisions are inserted into Schedule 7 *(that are specific to the Upper and Lower Waitaki Sub-region)*.
92. Any person reading the introduction to PC5 may not have realized amendments were proposed to Schedule 7 Part A. Shortly after notification of PC5 I was asked by a colleague if additional material could be included in Farm Environment Plans. My response was to suggest he look at scope because based on the introduction it did not appear that Schedule 7 was part of PC5 except in the Waitaki Catchment.

93. I agree there is no statutory requirement for a council to provide a list of amendments to a plan change. The onus is on the individual to read the plan change. But where a council chooses to provide such a list, I believe there is a duty of care to ensure the list is complete.
94. I question the value of the proposed amendments to Schedule 7 Part A of PC5. Several parties including Beef and Lamb NZ, Foundation for Arable Research; Dairy NZ and some irrigation companies have prepared Farm Environment Plan templates that have been approved by Environment Canterbury as meeting the requirements of Schedule 7 of the CLWRP. As Mr Hoban outlines in his evidence (para 3.1, p.3) Beef and Lamb NZ's Land Environment Plan ~~has~~ had good uptake from farmers.
95. The requirements to have a Farm Environment Plan in the CLWRP do not have effect until 01 January 2017 so there can be no evidence yet to show Schedule 7 is not effective. There is a cost associated with changing Schedule 7; time and money spent preparing Farm Environment Plans that may no longer meet the statutory requirements. And a risk that if the Council keeps changing the rules, people will disengage. Therefore in my view changes to Schedule 7 are only really justified if they add real value to the current CLWRP provisions or deal with significant omissions.
96. On face value the changes proposed to Schedule 7 do not appear to improve it. Some of the amendments seem less clear in terms of meaning or purpose than the provisions in the CLWRP. I do not agree with the Section 42A Report that the inclusion of management area objectives and targets add value. The purpose of the Farm Environment Plan is to identify farming activities that may adversely affect water quality and to introduce appropriate mitigation measures. Schedule 7 Section 5 in the CLWRP does that. The additional nitrogen loss reporting requirements in Section 4B of Schedule 7 are not necessary, as the conditions on the rules for restricted discretionary activities will require this information to be submitted with the resource consent.
97. There is information required in the amended Schedule 7 which does not appear to relate to managing effects of farming activities on water quality and some information that does not appear to relate to the Council's functions under the RMA. For example: The Nutrient Management Objective (p6-5) '*To maximize nutrient use efficiency when minimizing nutrient losses to water.*' Efficiency is an adjective and needs to be measured against an outcome: supply-cost efficiency; energy efficiency; production efficiency etc. I am unsure which measure the Council means by 'maximizing efficient use of nutrients,' but it does not appear to be a

function of the Council under the RMA. The Council's function is to manage land uses which affect water quality not how efficiently as a farmer I convert my nitrogen inputs into commodity products.

98. Target 1 for water-use management (excluding irrigation water) is '*Actual water use is efficient for the end use.*' However the rules in the plan which require the development of a Farm Environment Plan relate to managing effects of land uses on water quality. Similarly the location of flood protection or erosion control assets (2(h)), and public access routes or access routes used to rivers, streams and drains is not information relating to effects of N, sediment/P discharges on water quality; and are not matters that are the regional council's function under the RMA.

Sediment/Phosphorous Risk Zones

99. Plan Change 5 has included High Run-Off Risk Phosphorous Zones on the planning maps. These zones do not trigger any additional resource consent requirements but the information needs to be included in Farm Environment Plans under Schedule 7 and Farm Management Plans under Schedule 7A. The Farm Environment Plan must identify mitigation measures though there does not appear to be any farm actions required in Farm Management Plans.
100. The High Run-Off Phosphorous Risk Zones appear to have been identified using 'S Map' data. Consequently the accuracy of some of the zone boundaries needs to be 'ground-truthed'. Mr Hodgen (para 8.1, p.7) has given evidence about how the High Run-Off Phosphorous Risk Zone on his farm appears to have included lower slopes and flats and excluded steeper slopes. I understand from Environment Canterbury staff that there is a similar issue with the accuracy of the mapping to identify the Sediment/Phosphorus Risk Areas in the Selwyn catchment under Plan Change 1.
101. Plan change 5 does not require any additional action in relation to permitted activities in these zones. Therefore it would seem that a more appropriate method would be to require the Farm Environment Plan to identify any likely sources of sediment/phosphorus run off risk on farm, and appropriate mitigation measures.
102. In relation to farms which are permitted activities under PC5, there are rules in the CLWRP to control earthworks and cultivation in proximity to waterways and earthworks on slopes. In

addition the Industry Agreed GMPs and industry-led GMP programmes include measures to minimise sediment loss to waterways and soil erosion. There is no advantage to any farmer to lose their soil.

103. More specific soil erosion or sediment loss issues that require catchment-specific solutions are most appropriately addressed through the sub-regional planning process, as was done in PC 6 for Wairewa.

Green and Light Blue Zones

104. My understanding is the Green Zones for water quality in the CLWRP are zones where water quality outcomes are being met. The Light Blue water quality zones in CLWRP are those zones where there is no water quality data available but are mostly coastal areas with short streams flowing directly to the sea. I understand there are no immediate plans for the Council to develop sub-regional plans for these zones.
105. Under proposed Rule 5.58A farming activities cannot increase N losses by more than a total of 5kg/ha/yr from their N baseline as a restricted discretionary activity. Any further increase is a non-complying activity under Rule 5.59A. However Policy 4.38AA also limits any increase in N losses to no more than 5kg/ha/yr. It would not be possible under s104(D) of the RMA for the consent authority to grant a resource consent for a non-complying activity to increase N losses by more than 5kg/ha/yr unless satisfied the effects on the environment are minor.
106. This to me is a great example of mixing up policies and methods. The policy position should be to maintain existing water quality. The Council may then be satisfied that a rule allowing no more than a 5kg/ha/yr increase in N losses implements that policy. In my view it is not good plan drafting to write a policy preventing an environmental outcome (ie an increase in N loss of more than 5kg/ha/yr) and then use the resource consent process to bypass the policy on the basis that effects on the environment are minor. Rather I suggest the duty is on the council in writing its plan provisions to be satisfied that the policy position achieves the purpose of the Act and discharges other statutory duties.
107. I do not agree it is necessary or appropriate to impose a quantifiable limit on N losses within the policy for Blue and Green zones. Firstly, there is no water quality issue to justify this limit in these zones. Secondly this limit takes no account of the current N losses of the farming activity

or the sensitivity of the receiving environment and therefore the potential impacts an increase in N losses will have on water quality. In my view a more appropriate policy would be one that requires the applicant to demonstrate that the proposed activity will not have an adverse effect on water quality in the receiving environment.

Sensitive Lake Zones

108. The CLWRP identifies Sensitive Lake Zones around smaller lakes principally in the high country. My understanding is that these areas are sensitive to nutrient enrichment that may occur with changes in land use. Under the CLWRP farming activities with an estimated N Baseline of less than 10kg/ha/yr are a controlled activity. Other farming activities are a restricted discretionary activity. In both cases a Farm Environment Plan prepared under Schedule 7 is required and there is no allowable increase in N loss from the N Baseline. Plan Change 5 amends the Sensitive Lake Zone rules so any farming activity is a restricted discretionary provided there is no increase in N loss above the N Baseline (Rules 5.50A). Any increase in N loss above the N Baseline or from 01 July 2020 the Baseline GMP Loss Rate is a prohibited activity under Rule 5.52A.
109. JG & LM Murchison and FFNZ Inc have asked for amendments to these provisions. The same issues which make it impossible for low N loss farmers in other zones to comply with a rule not allowing for any increase in their N baseline, no matter how low it is, also apply to farmers in the Sensitive Lake Zones.
110. FFNZ has asked for Sensitive Lake Zones to be treated like Red Zones. JG & LM Murchison suggest a series of land use rules for permitted activities similar to other zones but with tighter conditions around irrigation and winter cattle grazing. The submission also requests rules for controlled and restricted discretionary activities. A further submission by Meridian opposes this submission on the basis that these areas are vulnerable to nutrient enrichment and there should not be any intensification of farming. I received a letter from the Department of Conservation saying it supports the Murchison submission for the same reasons, though in the further submission it says 'opposed.'
111. For the same reasons as discussed in paragraphs 61 to 69 of my evidence, I believe the relief sought in either of these submissions for Sensitive Lake Zones is more appropriate than the rules in PC5. The land use rules suggested in the Murchison submission are very conservative.

AMENEMENTS TO PC5

112. The policies in PC5 are, in my view, methods-based policies; they describe the methods, in this case, the rules in the plan. They are not effects-based policies; that is policies outlining the effects of an activity that are and are not appropriate to implement the plan objectives. In my opinion effects-based policies are always more helpful in a plan because they provide guidance to the consent authority in decision-making about whether an activity has the sort ~~of for~~ effects that are appropriate. Therefore I usually recommend the use of effects-based policies in a RMA plan and particularly in PC5 as it is proposing a greater use of the resource consent process than the current rules for managing effects of farming activities on water quality in the CLWRP.
113. The submission by JKW Hoban and Others requests changes to the policy framework to reflect a series of values listed in the submission though no amended wording is provided. The Murchison submission includes amended policies that identify the water quality effects sought in each zone; and which match the amended rules suggested in the submission.
114. The S42A report has not discussed most of the amendments sought in these submissions. This is an observation only, there is no statutory duty on the Council to produce a s42A Report and no requirement as to what it can or should cover. At pp183-184 the s42A Report makes some general comments about the alternative plan provisions sought in the Murchison submission. The s42A Report dismisses these amendments as 'generally weakening the plan change' and 'removing some of the Council's key tools' including the requirement for Farm Environment Plans that are audited and registration in the Farm Portal.
115. I disagree with the s42A Report on both fact and the conclusion it draws about the impact of the proposed alternative plan provisions requested in the Murchison submission. I am concerned at the tenor behind the statement 'weakening of the plan' as though having the most stringent regulations possible is an indicator of success in environmental management. I suggest the measure of success is whether the plan provisions achieve the purpose of the Act.
116. I also suggest 'weakening the plan' is not the correct statutory test to be applying when assessing the merits of amendments requested in submissions. I have outlined the matters which I believe are the appropriate assessment matters in paragraphs 12 and 13 of my evidence. They include: whether the policies implement the objectives of the CRLWP

(s67(1)(b) of the RMA); whether the methods are the most appropriate as required under s32(1)(b) the RMA; and other relevant statutory duties including the functions of the council (s30), the duty to not render incapable reasonable use of land (s85); and the duties to give effect to higher order planning documents and to achieve the purpose of the RMA. In my view these are the correct matters for assessing the merits of the provisions in a plan; with perhaps a bit of analysis as to what constitutes good planning practice.

117. Turning to matters of fact, the Murchison submission does **not** request the removal of the requirement for restricted discretionary activities to have a Farm Environment Plan prepared and audited in accordance with Schedule 7. The submission only questions the merits of some of the changes proposed to the Farm Environment Plan requirements in Schedule 7. I have discussed this point at paragraphs 91 to 98 of my evidence.
118. Condition 1 of the amended rules for restricted discretionary activities in the Red, Orange and Sensitive Lake Sensitive zones in the Murchison submission is a requirement to have a Farm Environment Plan under Schedule 7. For the Blue and Green zones in the amended rules in the Murchison submission this condition is replaced with a condition requiring the activity to comply with the Industry Agreed GMPs; but the first matter of discretion is whether a Farm Environment Plan is required. I think this distinction is appropriate as the effects of the proposed activity on water quality in a Green or Light Blue zone may not warrant a Farm Environment Plan; eg the vintners irrigating several hundreds of hectares of grapes in the Light Blue zones in North Canterbury but with N losses in single figures.
119. The definition of farming activity in the CLWRP captures a variety of rural land uses, not just pastoral farming and PC5 regulates a variety of these activities, not just dairy and dairy support. PC5 also regulates all water quality zones, not just those with water quality issues.
120. The Murchison submission removes the requirement to register in the Farm Portal as a condition for **permitted activities**. I have discussed the merits of a rule requiring permitted activities to register in the Farm Portal in paragraphs 28 to 31 of my evidence. Given that registration in the Farm Portal does not in any way alter the effects which a permitted activity has on water quality, I do not see how it can in any way weaken the plan position; nor remove a 'key tool for the Council in managing effects of farming activities on water quality.'

121. The Murchison submission also suggests replacing this condition with a condition requiring all farming activities, including permitted activities, to operate to GMP. To my mind this is a far more effective tool for managing effects of farming activities on water quality than requiring permitted activities to register in the Farm Portal.
122. The rules in the Murchison submission do not require registration in the Farm Portal as a condition for restricted discretionary activities because it isn't needed. By applying for a resource consent those activities will automatically register with the Council.
123. I do not agree that the amendments suggested in the Murchison submission reduce the efficacy of PC5 in managing effects of farming activities on water quality. Rather I believe they improve it because the policies identify resource management outcomes rather than simply repeating what the rules do without any link as to how that implements the CRLWP objectives.
124. There are substantially fewer policies in the Murchison submission than PC5 as notified, but that is not necessarily an indicator of a reduced or weakened position. There is no repetition of the same policy as it applies to every water quality zone; and the policies which repeat the rules in each zone are replaced with one policy that describes the effects of activities on water quality which are and are not appropriate in each zone. This effects-based policy construct is more in keeping with the policies in the CLWRP.
125. The policy outcomes expressed in the Murchison submission clearly state that there is to be no further deterioration in water quality in Sensitive Lake zones, Red and Orange zones as a result of changes in land use, and that improvements in water quality will be made through GMP. The Council has already taken a policy position that improvements in water quality from requiring changes other than GMP from existing land uses will be implemented through the sub-regional planning process. However the new Policy 8 suggested in the Murchison submission explicitly states that is how those effects will be addressed. The policies in PC5 as notified are silent on this matter. Therefore I believe the policy requested in the Murchison submission better implements the CLWRP objectives and strategic policies.
126. The requested new policies 1 and 3 in the Murchison submission provide recognition of and direction towards the on-going partnership between farmers, mana whenua and the council that will be needed to address significant water quality issues long-term. I cannot agree that such policies weaken PC5 and remove key tools for the Council. I understand that the Council,

through the CWMS, is committed to collaborative planning processes. My understanding is that PC5 is intended to guide the sub-regional planning processes as seen in PC5B for the Waitaki. These plans are developed through a community collaborative planning process via the CWMS Zone Committees.

127. The new Policy 4 in the Murchison submission rewrites Policy 4.11 as the effect which needs to be managed is the effect of granting resource consents with long term durations on the efficacy of setting catchment limits and other measures in regional plans to manage freshwater. Policy 4.11 as written does not address this issue. It is not the timeframe a consent is issued before the plan is reviewed that creates the issue; it is the duration for which the consent is issued. Resource consents of 35 years duration which are issued 10 years before a plan review may have a greater impact on the efficacy of any plan review, than resource consents of 10 years duration issued two years before a plan review. The amended policy also recognizes that not all long duration resource consents are an issue; rather those for activities which have high potential impacts and may unduly compromise the ability to address freshwater issues in the plan process.
128. The amended policies for Green and Light Blue Zones are to ensure changes in land uses do not adversely affect existing water quality. Again this is an appropriate policy to implement the objectives of the CLWRP as these zones do not have water quality outcomes that are not being met. I would suggest this policy is more focused on avoiding water quality issues in these zones than the current Policy 4.38AA in PC5 which allows an increase in 5kgN/ha/yr. whether it has an effect on water quality or not.
129. The key change to the rules suggested in the Murchison and Hoban submissions are to recognize and provide for farming activities which do not meet the conditions for permitted activities but have low N losses to have the same flexibility in land use and N loss management as permitted activities. As outlined in paragraphs 61 to 69 of my evidence, this outcome has been recognized by the Council as essential to achieving the purpose of the Act in its decisions on the CLWRP and Plan Changes 1, 2 and 3 to that plan. All the evidence gathered to date indicates that allowing this flexibility has very little if any impact on overall water quality but is vital to enable people to make reasonable use of their land. This matter is not discussed in the S42A Report. The new Policy 2 requested in the Murchison submission articulates this position and in my view implements the objectives of the CLWRP, including objectives 3.5 and 3.11.

130. I believe there are some policies in PC5 as notified which should be retained or which drive rules that should be retained. In Attachment Two I have shown the changes I suggest to PC5 as a result of my assessment of PC5 as notified and the Murchison and Hoban submissions. The scope for these amendments is derived from the content of PC5 as notified and the relief requested in the Murchison or Hoban submissions.

IN CONCLUSION:

131. Mr Hodgen made a suggestion to me in reply to the comments in the s42A Report that these submissions are weakening the plan change (pp183-184). It is a great summary of a 'farmers' perspective so I thought I would quote his suggested response to me:

"You could argue though that we are improving the outcomes as the way the plan is currently written we can't afford to comply so our choices are farm illegally or go broke. I know which one I will choose."

132. I agree with Mr Hodgen that the amendments sought in these submissions are about getting the provisions in PC5 closer to a point where they will work on-farm and achieve the desired environmental outcomes. As noted in paragraph 26 PC5 has good 'bones.' However the assumption that any farming activity that does not comply with the permitted activity conditions will have a substantial N Baseline, coupled with the heavy technical reliance on Baseline GMP Loss Rates calculated through the Farm Portal have the potential to create perverse outcomes. In addition, the focus on method-based policies means PC5 does not have a clear path from the objectives in the CLWP to the rules, or a good effects-based policy framework to guide decisions on resource consents, including consents for non-complying activities in Orange, Light Blue and Green zones.

133. I believe the amendments requested in the Murchison and Hoban submissions, subject to any changes suggested in my evidence, better implement the objectives of the CLWRP and discharge the councils duties under s30, 32 and 85 of the RMA.



Lynda Weastell Murchison

26th July 2016