

IN THE MATTER

of the Resource
Management Act 1991
(RMA)

AND

IN THE MATTER

of Proposed Variation
1 to the Canterbury
Land & Water
Regional Plan

TO BE HEARD BY

Environment
Canterbury

**Statement of Evidence of Christopher Adrian Hansen on Behalf of
Ravensdown Fertiliser Co-operative Ltd**

29 August 2014

Introduction

1. My name is Christopher Adrian Hansen and I am a Director and Senior Planning Consultant with Chris Hansen Consultants Ltd. My qualifications are a Bachelor of Regional Planning (Hons) from Massey University (1980). I am a full member of the New Zealand Planning Institute and a member of the Resource Management Law Assoc. I have over 32 years' experience in planning and resource management.
2. I have particular experience in the review and assessment of regional and district plans and the preparation of submissions, attendance at hearings providing expert planning evidence, and in mediation to resolve appeals.
3. I provide the following statement of evidence in support of the submission lodged by Ravensdown Fertiliser Co-operative Ltd (Ravensdown) to proposed Variation 1 to the proposed Canterbury Land & Water Regional Plan (proposed CL&WRP). I assisted Ravensdown to review proposed Variation 1 and to prepare its submission.
4. I have read the Code of Conduct contained in the Environment Court's Practice Notes for Expert Witnesses and agree to comply with it.

Outline of Evidence

5. My approach today is to provide you with:
 - A brief overview of Ravensdown's operations and its reasons for being involved in regional and district planning matters;
 - In Part One of my evidence I outline the key planning matters raised by Ravensdown in its submission, assess whether the s.42A Report has addressed these key planning matters, and provide my views on the planning aspects of these key matters;
 - In Part Two of my evidence I cover any specific plan provisions Ravensdown submitted on that are not covered in Part One taking a similar approach as Part One above.

Ravensdowns' Interests in Regional and District Plans

6. Ravensdown owns and operates three fertiliser-manufacturing plants in Ravensbourne (Dunedin), Hornby (Christchurch) and Awatoto (Napier). Ravensdown also operates 46 bulk fertiliser stores throughout NZ, and has an interest in a further 70 consignment fertiliser stores which are operated by third parties in which Ravensdown products are stored.
7. In addition to these facilities, Ravensdown operates a number of quarries that mine and process agriculture lime in various parts of New Zealand. In the Canterbury Region, Ravensdown has 2 lime works; 8 stores and 10 consignment stores.
8. Ravensdown takes an interest in regional plans from the perspectives of how plan provisions affect its stores; fertiliser use; and the nutrient management approach adopted to meet water quality outcomes.

Ravensdown's Submission

Part One: Key Planning Matters

Adequacy of s.42A Report

9. Before I address the Key Planning Matters raised by Ravensdown in its submission, I would like to make some comments on the s.42A Report. I note the Ministry for the Environment Quality Plan Website states: *"It is good practice to have submissions analysed by resource management professionals, with the results prepared as reports with recommendations for decision-makers"* (my emphasis added).
10. While I accept that there is no requirement in Resource Management Act 1991 (RMA) for a s.42A Report to include recommendations (although s.42A (1B) implies the Report may make a recommendation), in my experience it is normal practice for a s.42A Report to provide guidance on the matters raised in submissions and make a recommendation to the hearing commissioners, and I agree with the Quality Plan Website that this is best practice. Furthermore, if the s.42A makes recommendations that include changes to the proposed plan provisions, such changes are usually shown in an amended strikeout/underlined version of the plan change (or variation) with s.42A

Report recommendations. This practice allows the submitter to have an idea of Council's view on the matter they have raised (and I appreciate the commissioners are not in any way obliged to accept any of these recommendations), and can importantly determine what approach is to be taken in evidence including what matters might need further clarification.

11. In relation to the submission point raised by Ravensdown, while they may be acknowledged, there is often no discussion on the point made and no recommendation relating to the submission point. In my view the s.42A Report prepared for Variation 1 provides little assistance to submitters in such a case, and does not help focus what the evidence should address.

Matrix of Good Management (MGM) Project

12. Ravensdown stated in its submission that it is aware of and supports Environment Canterbury (the Council) and the Primary Industry Sector undertaking the MGM Project to define nitrogen and phosphorus losses under Good Management Practice (GMP). It is understood that the results from the MGM Project will be available in mid-2015. The significance of the MGM Project results is that it will allow the farmer to assess and compare nitrogen and phosphorus losses under agreed GMP and will allow Council to have the ability to assess compliance at a farm scale and at a catchment scale.
13. With this in mind, Ravensdown questioned the timing of Variation 1 as it is understood that the achievement of the required outcomes in Selwyn Te Waihora will highly depend on farms meeting the MGM Project results and then making further reductions beyond GMP. While Ravensdown understands the intent of such an approach, particularly where water quality issues are evident, it is not considered appropriate for a farmer to adopt such an approach when the MGM Project has not been completed and there are no nitrogen and phosphorus loss rates to compare a farms performance with.
14. In this context, it would make more sense for Variation 1 to be introduced after the MGM Project results are ready to be included in the Selwyn sub-regional chapter, which would be mid-2015. If Council was to withdraw Variation 1 until the MGM Project results are available, the proposed CL&WRP provisions would apply until then. In my view, these provisions

provide adequate control of land uses in the interim, and are similar to the proposed nutrient management framework, in that a farm's nitrogen losses cannot exceed their 2009-2013 nitrogen baseline. The only difference is that (in general) the proposed CL&WRP threshold is 10kg N (I note the Ravensdown submission stated that the proposed CL&WRP has a threshold of 20kg/N/ha/yr which was a typo) and the Selwyn Te Waihora threshold is 15kg/N/ha/yr. To me this seems a sensible and practicable interim solution.

15. I note the s.42A Report discusses this matter in paragraphs 11.131 – 11.135 and while it notes that putting Variation 1 on hold does have merit from an efficiency perspective, it concludes that a “... *risk would remain that the (MGM) project does not deliver an outcome suitable for inclusion as a plan change as a relatively simple exercise, and also that will be broadly accepted by most members of the farming and non-farming communities. In any event, there is likely to be a delay before such a significant plan change is settled.*” It goes on to suggest that the risk in removing these provisions is that the direction established through the Zone Committee process will be lost, or at least not clearly signalled, and on-farm decisions may be made without a clearly defined future regulatory framework. The s.42A Report does not support the request to withdraw the substance of the nutrient provisions as it would not meet the outcomes of the CWMS or Policy A2 of the NPSFM.
16. I do not support the reasons provided in the s.42A Report for not adopting the suggestion that the variation be withdrawn or that reference to the MGM Project results and GMP loss rates be deleted. My understanding is that the MGM Project is making good progress getting agreement on the expected nitrogen losses under good management practice for the various farming sectors. As this is a critical step in the future of nutrient management in the Selwyn Te Waihora sub-region, I would have thought that a relatively short delay is warranted. The alternative proposed in Variation 1 creates uncertainty and may mean that on-farm decisions and investment are made in a vacuum, and the water quality outcomes sought by the community are not achieved. I fail to see how the Zone Committee process will be lost by such a delay, and I would have thought relying on the current proposed CL&WRP provisions would be consistent with the outcomes of the CWMS and the NPSFM which have longer timeframes.

17. In its submission Ravensdown noted that if Council is of the mind to continue with Variation 1 in the absence of the MGM Project results, a planning framework is required where the MGM Project results can be used to set conditions on nitrogen and phosphorus loss rates from 2017. Such a planning framework is anticipated in the s.32 Evaluation Report (Page 79). I would anticipate such a planning framework would signal the need for a plan change or variation that would provide for input into the appropriateness of the MGM Project results and how they will be implemented (I address the matter of implementation later in this evidence).
18. I note the s.42A Report addresses this matter in paragraph 11.128 and refers to Policy 4.11 of the proposed CL&WRP. Policy 4.11 makes a commitment that good management practice will be codified and introduced into the CL&WRP by way of a plan change on or before 30 October 2016. I accept that Policy 4.11 of the proposed CL&WRP anticipates a plan change would be the appropriate mechanism to incorporate the MGM Project results into the Selwyn Te Waihora sub-region.
19. In addition to the above request for a planning framework, Ravensdown also considered that if Council was is of the mind to continue with Variation 1 in the absence of the MGM results, it should delete reference to the GMP loss rates currently included in Policy 11.4.13, and the matter of discretion included in Rule 11.5.9. The reasons for this is that Ravensdown considered any reference to the GMP loss rates should only be made once they are available, and should be the subject of the plan change anticipated in Policy 4.11 of the proposed CL&WRP.
20. I note the s.42A Report recognises in paragraph 11.147 that committing to the post 2017 regime is difficult if the MGM Project results are not available as it introduces a degree of uncertainty, particularly as submitters are unable, at this point, to know precisely what they are being committed to. I agree with this concern. Issues surrounding how phosphorus loss will be determined is also raised in the s.42A Report which concludes: *“At this stage, there is uncertainty regarding the ability to quantify phosphorus loss, and without additional research, tools and improved practices, it is difficult to commit to a future rule regime that goes beyond the Schedule 24 actions, stock exclusion, riparian management and farm environment plans”* (paragraph 11.149). The

response of the s.42A Report is to delete the definition of GMP nitrogen and phosphorus loss rates, but to retain the reference to these loss rates in Policies 11.4.13 – 11.4.15. I am confused by this recommendation as I see no logic in deleting the definition but retaining the reference in the policies. Such a recommendation, in my view, causes more uncertainty and does not resolve the issue being raised by Ravensdown. Notwithstanding this, I consider Policies 11.4.14 and 11.4.15 can remain as notified as they apply after 2022.

21. Notwithstanding this, I note Policy 11.4.14 states in (b): “*Where a property’s nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum, make the following further percentage reduction in nitrogen loss rates, beyond those set out in Policy 11.4.13(b), to achieve the catchment target for farming activities in Table 11(i):...*” I have two points to make regarding this provision. Firstly, it is not clear to me how a farming activity would demonstrate the reductions being made are meeting the targets of Table 11(i). Ravensdown would like to understand what Council is expecting to be provided that would show the targets are being met. Secondly, I note changes are recommended to Table 11(i) in paragraph 11.87 which deletes the reference to farming activity. As ‘*farming activity*’ is not defined (addressed later in this evidence) it is unclear how Policy 11.4.13 (b) would work if the s.42A Report recommendation is adopted.
22. In addition, I have concerns regarding the categorisation of the farming activities for reductions in Policy 11.4.14 (b), and whether these will be in line with the farming activity categories that are still being developed in the MGM Project. For example, OVERSEER™ will be used to determine compliance with the reductions being proposed, and this should be straight forward for a farming activity that is entirely the farming activity listed in Policy 11.4.14(b) i.e. 100% dairy or 100% dairy support etc. However, issues may arise as the reductions do not seem to account for mixed farming systems on a single ‘*property*’. In a case where a property is a mix of dryland sheep and beef, dryland arable, dairy support and horticulture, is the reduction in nitrogen loss based on an area-weighted percentage basis to give a ‘whole farm’ average or by some other mechanism? In my opinion this is not clear. This would be another reason, in my view, to wait for the findings of the MGM Project to be

available, and to define clearly what is intended with the phrase 'farming activity'.

23. Overall I would recommend Council:

- Withdraw Variation 1 until such time as the MGM Project results are available and re-notify the Variation at that point;
- If Council is of the mind to continue with Variation 1, I consider the following amendments to Policy 11.4.13 are necessary:
 - cross-reference to Policy 4.11 of the proposed CL&WRP and the planning framework intended to remind the reader that the MGM Project results will be introduced by way of a plan change once available in mid-2015; and
 - remove reference to GMP nitrogen and phosphorus loss rates – this policy would read as follows (~~strike through~~ deleted words; underlined added words):

Policy 11.4.13

“From 1 January 2017, further reduce discharges of nitrogen, phosphorus, sediment and microbial contaminants from farming activities in the catchment by requiring farming activities to:

- (a) *Implement a Farm Environment Plan prepared in accordance with Schedule 7 Part A, where a property is greater than 50 hectares; and*
- (b) *Where a property's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum, ~~meet the Good Management Practice Nitrogen and Phosphorus Loss Rates for~~ keep at or less than the property's nitrogen baseline until the until the MGM Project results are incorporated into the plan in accordance with Policy 4.11 of the proposed Canterbury Land & Water Regional Plan-land use.”*
- Clarify how a farming activity is to demonstrate to Council how it is complying with the farming activity targets contained in Table 11(i), and clarify how Policy 11.4.13 will work should the recommendations contain in paragraph 11.87 be adopted;
- Delete the second matter of discretion included in Rule 11.5.9 that references GMP nitrogen and phosphorus loss rates.

Timeframes for Achieving GMP reductions

24. Ravensdown noted in its submission that there is variety of terms (i.e. timeframes) used in the policies regarding when GMP phosphorus and nitrogen loss rates are to be achieved. For example, Policy 11.4.13 states that

- from 1 January 2017 farming activities that leach >15kg N/ha/yr are required to meet the GMP nitrogen & phosphorus loss rates. Similarly, Policy 11.4.14 also states that the reductions from these nitrogen loss rates are required from 1 January 2022. Because a specific day is given from which rates are to be achieved, there is uncertainty regarding exactly when (after 1 January 2017 or after 1 January 2022) the GMP nitrogen or phosphorus loss rates are to be met.
25. In contrast, Policy 11.4.15 says that if a farm is unable to meet the reductions required in Policy 11.4.14(b) by 2022 then an extension will be considered by Council. In this case only a year is stated, so presumably the farmer has until 31 December 2022 to comply.
26. Ravensdown considered any timeframes stated should be consistent between policies so that the intent and when the policy has to be achieved are clear. The s.42A Report recognises in several places (such as paragraphs 11.25 and 11.162) that Ravensdown has sought clarification regarding the timeframes included in the plan provisions, but provides no commentary or recommendation to make any amendments. In the absence of any guidance from the s.42A Report, I can only assume that the Council officers either do not consider there is an issue, or that the submitter will provide evidence on their concerns at the hearing.
27. The key issue to Ravensdown is clarity regarding what happens at the key date, and how Council will implement the policy. In particular, how will Council manage the transition from meeting GMP rates after 2017 to the achievement of the reductions proposed in Policy 11.4.14 after 2022? For example, how will Council approach a resource consent made in say 2018 that might be meeting GMP rates? Will Council restrict the duration of consent or impose conditions that require changes to the farming activity so that the activity meets the proposed reductions from GMP rates beyond 2022? In my view these are important implementation questions that need to be addressed, and later in this evidence I suggest Council introduce Procedural Guidelines to provide guidance to resource users on these matters to provide clarity.

Use of Nitrogen Baseline as a ‘Backstop’ Measure

28. Ravensdown expressed concern that there seems to be a ‘disconnect’ between the nitrogen baseline; Policy 11.4.13 and Rules 11.5.9 – 11.5.12. In particular Ravensdown understood that the nitrogen baseline was established in the proposed CL&WRP for farming activities and farming enterprises so that historical nitrogen losses could be benchmarked with the goal to ensuring exceedence is avoided in the interim in nutrient over-allocated catchments such as the Selwyn Te Waihora. However, in the longer term the focus is on MGM Project results to be introduced for the different farming sectors, and that GMP is to be implemented to achieve the MGM Project results.
29. The proposed CL&WRP defines ‘nitrogen baseline’ as “... *the discharge of nitrogen below the root zone, as modelled with OVERSEERTM, or equivalent model approved by the Chief Executive of Environment Canterbury, averaged over the period of 01 July 2009 – 30 June 2013...*”.
30. Ravensdown noted Policies 11.4.13 and 11.4.14 addresses nutrient losses to first meet the GMP rates from 1 January 2017 and then to go beyond GMP from 1 January 2022. There is no mention in these policies about exceeding the nitrogen baseline (as specified in Policy 11.4.12 (a)). Presuming that the GMP nitrogen and phosphorus loss rates are included by 1 January 2017 (given Policy 11.4.13), then under Rule 11.5.9 farming activities that lose over 15 kg/N/ha/yr will require restricted discretionary resource consent.
31. In addition, Ravensdown noted that Condition 3 of Rule 11.5.9 states that the use of land for a farming activity is a restricted discretionary activity if the nitrogen loss calculation for the property does not exceed the nitrogen baseline, and the matters of discretion for this rule include the GMP nitrogen baseline. The use of land for a farming activity or farming enterprise is prohibited if the nitrogen baseline is exceeded (Rule 11.5.12). A matter Council will exercise its discretion over is whether the GMP nitrogen and phosphorus loss rates (as listed in Policy 11.4.13(b)) are being met from 1 January 2017.
32. Ravensdown considered the policies imply that the nitrogen baseline is not important from 1 January 2017 as the GMP loss rates will take over from this date, but then the rules dictate that the use of land for farming activities, even after the GMP loss rates are introduced, will have to comply with their nitrogen baseline irrespective of what GMP dictates.

33. In fact, it appears as if the nitrogen baseline is used as a ‘backstop’ in the rules, as any exceedence of the nitrogen baseline is a prohibited activity. Conceivably there could be a situation where the GMP rate (even after the reductions intended after 2022) is greater than the nitrogen baseline, but the nitrogen baseline would prevail. This seems contrary to the intention of the Policies 11.4.13 – 11.4.15 that promotes the use of GMP without any indication that the nitrogen baseline cannot be exceeded. This approach has the potential to penalise current good operators that are already achieving GMP rates and have a low nitrogen baseline, while rewarding those operators that are currently underperforming and have a high nitrogen baseline. This outcome is considered inequitable.
34. Ravensdown considers this is further complicated by the fact that Policy 11.4.12 requires farming activities to ‘*not exceed the nitrogen baseline*’ if the property leaches >15kg/N/ha/yr. Is this the over-riding nutrient management policy requirement in Variation 1, or is it only intended to apply until 1 January 2017 when the provisions in Policies 11.4.13 – 11.4.15 take over? Surely the latter has to be the case otherwise any GMP rates determined through the MGM Project would be irrelevant.
35. I note the s.42A Report records that Ravensdown seeks clarity regarding the relationship between Policy 11.4.12 and Policies 11.4.13 - 11.4.16 and, in particular, whether the requirements of Policy 11.4.12 prevail over the requirements and timeframes included in Policies 11.4.13 - 11.4.16 once they are implemented. The s.42A Report also records in paragraph 11.162 that Ravensdown seeks clarification regarding how the nitrogen baseline is applied in Policy 11.4.15.
36. Furthermore I note the s.42A Report states in paragraph 11.34 that: “*Several submitters have questioned the relationship between Policy 11.4.12 and Policies 11.4.13 to 11.4.16. There is some potential for conflict between these policies, as they apply over different time frames and have differing levels of specificity. Overall, when read as a whole, and in combination with the resulting rule regimes, the potential for conflict does not appear to be significant.*”
37. I disagree with the conclusion of the s.42A Report. In my view this is an important planning issue that is required to be resolved. As I stated earlier and

you as commissioners will be well aware, the nitrogen baseline was initially a mechanism included in the proposed CL&WRP to measure a farms performance against to ensure it is not exceeded. However, it now appears to be a ‘backstop’ measure that renders a farming activity or farming enterprise prohibited if exceeded which seems contrary to the policies and the intent of the MGM Project.

38. While I accept that the proposed CL&WRP takes the same approach and the exceedence of the nitrogen baseline is a prohibited activity, I do not believe a planning conflict is created if the sub-regional section takes a different approach in its rules. In essence I see the proposed CL&WRP setting a regime in place until the sub-regional sections are developed and water quality targets and limits are established for individual catchments. Once these targets and limits are established, it may be more than appropriate for the controls of the proposed CL&WRP to be relaxed. In my view the proposed CL&WRP anticipates this specifically stating at the beginning of the policies and rules the provisions of the sub-regional zones prevail over the more general provisions of the proposed CL&WRP, with the exception of matters relating to any recovery activity or if it is specifically stated to the contrary in the sub-regional zone.
39. Furthermore, I consider prohibited activity status is not appropriate as I consider there are possible situations where a resource user should be provided an opportunity to lodge resource consent, and where the adverse environmental effects can be managed to acceptable levels and the water quality outcomes sought in the plan can be achieved. One example I am aware of is where new technology is developed either in New Zealand or overseas to reduce nitrogen and/or phosphorus loss rates but this new technology is not captured in OVERSEERTM algorithms for a period of time until the science is well proven and the model is updated. In this scenario the farmer might be adopting these new technologies and reducing nitrogen and/or phosphorus loss rates, but the OVERSEERTM modelling is showing either status quo losses or an increase in nitrogen and/or phosphorus losses. While in time the modelling will catch up with new technologies, in the interim it is my view that a resource user should be at least given an opportunity to apply for

resource consent to demonstrate to Council that their nutrient management is meeting the plan outcomes and consent can be granted.

40. I support the following relief sought by Ravensdown:
- Clarify its intention to rely of GMP loss rate calculations as the means to achieve the water quality outcomes sought; and
 - Change the activity status that apply to the use of land for farming activities that exceed the nitrogen baseline after 1 January 2017 from Prohibited to Non-complying; and
 - Amend Policies 11.4.14 and 11.4.15 to address how the nitrogen baseline will be considered.

Phosphorus Discharge Allowances (PDA)

41. Ravensdown noted in Chapter 10.2 of the s.32 Evaluation Report (managing diffuse phosphorus from farming) Council acknowledges that due to the pathways for phosphorus contamination of waterways and lakes, managing phosphorus will require a different approach than managing nitrogen discharges (Page 99).
42. One of the options evaluated in the s.32 Evaluation Report is Phosphorus Discharge Allowances (PDA) (Option 3). The description of this Option states that a PDA would be set based on the loss rate anticipated under GMP; it will determine if the activity was a Permitted Activity or requires consent; and, like the GMP nitrogen loss rates, would be required to be met by 2017.
43. The evaluation of this Option (page 105) states that a PDA would need to cover leaching and overland flow and that *“in order to set a numeric discharge allowance, the source, the pathway, the impact in the receiving environment, and how these change with various actions would need to be able to be reasonably articulated (numerically)”*. Council acknowledged in the s.32 Evaluation Report that the phosphorus module in OVERSEER™ is not as well developed as the nitrogen module, and following that that in groundwater-dominated catchments like the Selwyn there is not yet an adequate pathway model connecting the source to the receiving environment. It also acknowledged that *“a reliable conceptual model of phosphorus movement in the catchment can therefore currently not be developed”*. Council concluded the evaluation of PDA’s by saying that there is currently

not sufficient information and/or knowledge to set a PDA in the Selwyn Catchment.

44. In its submissions Ravensdown strongly supported this evaluation, the acknowledgement that the phosphorus module in OVERSEERTM is not as well developed as the nitrogen module, and that there is not sufficient information and/or knowledge to set a PDA in the Selwyn Catchment.
45. In the s.32 Evaluation Report Council considered that managing phosphorus loss is best achieved by a combination of Codes of Practice (Option 4) and additional Farm Environment Plan (FEP) requirements (Option 2) (Overall Evaluation on page 105 of s.32 Report).
46. Notwithstanding the above, Variation 1 defines '*good management practice nitrogen and phosphorus loss rates*' as a property discharge allowance based on soil, rainfall and farm type operating at GMP. In particular Policy 11.4.13 states that from 1 January 2017, where a property loses more than 15 kg/N/ha/yr, a farm must meet the GMP nitrogen and phosphorus loss rates. This is also required under Rule 11.5.9 as a matter of discretion of the restricted discretionary consent.
47. In effect the s.32 Evaluation Report conclusions appear to be contrary to the provisions included in Variation 1. It is not clear why this apparent contradiction between the findings of the s.32 Evaluation Report and the provisions included in Variation 1 eventuated.
48. I note the s.42A Report does not appear to specifically discuss this matter, although it does acknowledge in paragraph 11.149 that there is uncertainty regarding the control of phosphorus loss and the difficulty in developing a rule regime beyond the Schedule 24 actions, stock exclusion, riparian management and farm environment plans. It also recommends deletion of the definition of GMP nitrogen and phosphorus loss. Without clear guidance from the s.42A Report it is difficult to provide my views on why Variation 1 fails to adopt the s.32 Evaluation Report conclusion that managing phosphorus loss is best achieved by a combination of Codes of Practice (Option 4) and additional Farm Environment Plan requirements (Option 2). Many of the views I have expressed above regarding waiting for the findings of the MGM Project apply, and the s.32 Evaluation Report conclusion is consistent with these view. I also note that while Ravensdown accepted in its submissions that the

development of phosphorus loss rates under GMP may be an outcome of the MGM Project, these rates should not be used for comparing against farm losses as a compliance mechanism due to OVERSEER™'s acknowledged current limitations.

49. My understanding is that these major limitations are that OVERSEER™ is a farm boundary phosphorus loss risk assessment and the model does not know how the farm is or is not connected to ground and surface water. Additionally, the majority of phosphorus lost from a farm is lost from critical source areas, not the whole farm. I also understand that the identification and mitigation of these critical source areas in a Farm Environment Plan will be more effective than an OVERSEER™ proscribed phosphorus loss value until this can be connected to hydrological models explaining surface and ground water flows.

50% Reduction in Phosphorus

50. Following on from the above point, Ravensdown expressed concern in its submission that the uncertainty around determining the quantity of phosphorus loss and the fact that the MGM Project is yet to be completed means it is not clear how 50% reduction is going to be achieved or even if it is viable to achieve through the current Variation 1 provisions. This links back to the above points regarding the relationship of Policy 11.4.12 with the other Variation 1 provisions and the need to put Variation 1 on hold.
51. Ravensdown indicated it was unclear how the Key Resulting Action (Page 4-3) will be achieved for phosphorus. While Ravensdown considered Variation 1 adopts mechanisms to manage nitrogen, it is still concerned that phosphorus is not managed to the same level, and that a 50% reduction in the catchment phosphorus load may not be achieved.
52. In particular, Ravensdown noted in Chapter 5 of the s.32 Evaluation Report that the technical assessment of the Selwyn Catchment only assesses nitrogen losses from diffuse (non-point) sources (Section 5.8, page 35), while assessing the nitrogen and phosphorus losses from point sources (Section 5.9, page 38). Phosphorus loss from diffuse sources (such as farm runoff/leaching) is not assessed. This is considered an oversight because diffuse phosphorus losses

are evaluated in Chapter 10.2 (page 99 onwards) of the s.32 Evaluation Report and are to be regulated under Policy 11.4.13 and Rules 11.5.9 to 11.5.11.

53. While overall Ravensdown supported a balanced approach to the management of nitrogen and phosphorus losses, it expressed concern that if the assessment has not been undertaken of phosphorus losses from diffuse sources, and yet regulation is being introduced, then achieving the 50% reduction in the catchment may not be realistic.
54. Ravensdown sought for Council to review its approach to the management of phosphorus to attain a 50% reduction in the catchment load, as outlined in this submission.
55. I note the s.42A Report clarifies in paragraph 9.23 that the 50% reduction in phosphorus is not included in the policies or rules, and in this case is restating ZIP Addendum. No change is recommended. While I accept that the 50% reduction is a key action of the ZIP Addendum 2013, I also note the s.42A Report discussion in paragraphs 11.31 – 11.33 the concerns raised by submitters regarding the degree to which phosphorus is managed, and in particular:
 - recognises legacy issues;
 - that tools presently available to estimate phosphorous loss, such as OVERSEER™, are considerably less well developed than they are with respect to nitrogen management;
 - that the largest gains with respect to phosphorous losses can be made through farm environment plans, by excluding stock from accessing waterways, the riparian planting of waterways and drains, and avoiding overland flow of water;
 - that FEPs can encapsulate many of these actions by assisting with the management of fertilisers, as well as stock access and avoiding runoff.
56. While overall I support the initiative to achieve a 50% reduction in phosphorus loss, and accept that Variation 1 simply reflects the desires of the Zone Committee and the concerns expressed in the s.42A Report, I am still concerned that there is no way of knowing whether achieving this outcome is viable, or what the primary industry sector may have to do to achieve this outcome. As discussed above, this uncertainty is further compounded by the

fact that the findings of the MGM Project are not yet available, and the average farmer is really unaware of what the implications of achieving a 50% reduction in phosphorus loss might mean for their farming activity. This is also a matter that relates to the need for a Procedures Manual to outline how this outcome might be achieved when implementing the provisions of the Plan.

Key Definitions – Baseline land use; farming activity

57. In its submission Ravensdown raised concerns regarding a new definition '*Baseline land use*' contained in (New Heading) 11.1A Selwyn-Waihora Sub-regional Section Definitions (Page 4-4), and sought a new definition of '*farming activity*'. The definitions of Baseline land use is:
"Baseline land use - means the land use, or uses, on a property between 1 July 2009 and 30 June 2013 used to determine a property's 'nitrogen baseline' as defined in section 2.10 of this Plan."
58. Ravensdown stated it was unclear what the definition is trying to describe, and whether the definition is required or appropriate. While the only time the term is used is in Policy 11.4.13, in this context it appears to be trying to define a term that the Ravensdown understands the MGM Project partners themselves may not have yet defined, and it describes the MGM Project results that are yet to be determined. Ravensdown considered it may be more appropriate to introduce such a definition after it has been defined by the MGM Project partners and with the MGM Project results, if it is required at that stage. Ravensdown therefore considered the term is inappropriate, unclear and unnecessary, and should be deleted.
59. Ravensdown also noted that in the s.32 Evaluation Report, the evaluation of Option 2 estimates that approx. 1900 properties leach less than 15 kg N/ha/yr and many of these are properties lifestyle blocks. However the policies and rules included in Variation 1 do not differentiate between land uses. Ravensdown considered there are practical and legal (RMA) implications for Council implementing Variation 1. Ravensdown considered a definition of the term '*farming activity*' would assist with these concerns. A suggested

definition of *'farming activity'* put forward by Ravensdown in its submission was:

"farming activity means the use of land for the production of primary products including agricultural, pastoral, horticultural and forestry products."

60. In relation to these definitions, Ravensdown sought for council to:
 - Delete the definition *'Baseline Land Use'*
 - Introduce a new definition *'Farming activity'*
61. I note the s.42A Report discusses the *'Baseline Land Use'* definition in paragraph 11.89 and records that Ravensdown (amongst other submitters) seeks the definition to be deleted. Paragraph 11.107 of the s.42A Report states: *"Overall, the various, and inter-related, definitions appear to have caused a degree of confusion as to how they operate and what was included in Variation 1. Baseline land use is fundamental to the operation of the Variation beyond 2017. On this basis, it is recommended to continue."*
62. It is not clear to me why the s.42A Report states that baseline land use is fundamental to the operation of the Variation beyond 2017. It appears to me that a focus on a baseline land use is not necessary or appropriate as it is not effects based. The focus should be, in my view, on the nitrogen and phosphorus losses from a property (i.e. the effects of the land use), rather than the land uses itself. If the land uses during the baseline period are locked, this implies any change in land use would need to be controlled, rather than the effects.
63. Should the Commissioners disagree with this view and consider a baseline land use is required, it is Ravensdown submission that this definition is yet to be determined by the parties that are heavily involved in the MGM Project, and any definition that they might develop should be adopted in the Selwyn Te Waihora sub-zone. In my view, deleting the current definition and adopting the definition developed through the MGM Project through a future plan change (consistent with Policy 4.11 of the proposed CL&WRP) is appropriate if such a definition is deemed to be required, and will avoid any uncertainty caused by the inclusion of the definition contained in Variation 1 without the understanding of how it might apply after 2017.

64. In relation to Ravensdown's request for a definition of 'farming activity', I can find no reference in the s.42A Report to a definition being sought. I note the term 'farming activity' is used regularly in the policies and rules and in my view defining this term is important to ensure clarity in interpreting the plan. I note there is no such definition in proposed CL&WRP. I have provided an example in paragraph 21 of this evidence (above) where there is an issue in not having a definition for farming activity.

Part Two: Specific Submission Points

65. In this part of my evidence I address the specific submission points raised in Ravensdown's submission that are not addressed in Part One of my evidence above. The approach I take is to identify the plan provisions and Ravensdown's submission point; identify if the s.42A Report addresses the matter raised; and provide planning comment.

66. **Plan Provision:** 11.4 Policies – Policy 11.4.1 (Page 4-5)

“11.4.1 Manage water abstraction and discharges of contaminants within the entire Selwyn Waihora catchment to avoid cumulative effects on the water quality of Te Waihora/Lake Ellesmere and flow of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere.”

67. In its submission Ravensdown supported the approach to manage discharges of contaminants at a catchment level to avoid cumulative effects on the water quality of Te Waihora/Lake Ellesmere, subject to addressing matters raised in its submission.

68. Ravensdown sought for Council to retain the intent of Policy 11.4.1, subject to addressing matters raised in its submission.

69. I note the s.42A Report records that Ravensdown sought to retain policy in full which is not quite correct. Ravensdown sought for the intent of the policy to be retained. The s.42A Report recommends some minor amendments (underlined):

“Policy 11.4.1 Manage water abstraction and discharges of contaminants within the entire Selwyn Te Waihora catchment to avoid, remedy or mitigate adverse cumulative effects on the water quality of Te Waihora/Lake Ellesmere, streams and shallow groundwater; and flow of water in springs and tributaries flowing into Te Waihora/Lake Ellesmere.”

70. Overall I am comfortable with the amendments recommended in the s.42A Report, and I consider the intent of the policy is retained as sought by Ravensdown.
71. **Plan Provision:** 11.4 Policies Managing Land Use to Improve Water Quality – Policy 11.4.6 (Page 4-6)
- “11.4.6 Limit the total nitrogen load entering Te Waihora/Lake Ellesmere by restricting the losses of nitrogen from farming activities, industrial and trade processes and community sewerage systems in accordance with the target (the limit to be met over time) and limits in Table 11(i).”*
72. In its submission Ravensdown supported the intent of the policy to limit the total nitrogen load entering Te Waihora/Lake Ellesmere by restricting the losses of nitrogen from farming activities, as discussed above Ravensdown considered it would be helpful to define ‘*farming activities*’ in order to be clear and focused on which activities will be controlled.
73. In addition, while Ravensdown understands the logic behind the 4,830 tonne/yr catchment load for nitrogen, it considered it is not clear how the MGM results that are to be developed by 2015 will work in with achieving this target.
74. Ravensdown sought for Council to:
- Adopt a definition of ‘*farming activities*’ as discussed above
 - Amend Policy 11.4.6 by replacing the term ‘*restricting*’ with the term ‘*controlling*’ to be consistent with s.30 of the RMA
75. As discussed above, I cannot find reference in the s.42A Report to Ravensdown’s request to define ‘*farming activities*’. My comments above apply. I note the s.42A Report references Ravensdown’s submission seeking ‘*controlling*’ to replace ‘*restricting*’ in paragraph 11.22. There does not appear to be any discussion or recommendation in the s.42A Report regarding this request.
76. Essentially Ravensdown’s submission seeks consistency with s.30 (1)(f) of the RMA. I agree with this request. In my view, ‘*restricting*’ has a narrow application and would be constrained to putting a limit on farming activities. Whereas ‘*controlling*’ farming activities means the ability to manage; regulate; restrain or allow things to happen. In my view the term ‘*controlling*’ better reflects the intent of the policy and is consistent with the functions of a regional council under s.30 of the RMA.

77. **Plan Provision:** 11.4 Policies Managing Land Use to Improve Water Quality – Policy 11.4.16 (Page 4-7)
“11.4.16 Despite Policy 11.4.14 and 11.4.15, from 2037 no property or farming enterprise shall leach more than 80 kg of nitrogen per hectare per annum.”
78. In its submission Ravensdown considered the 80 kg/N/ha/yr number is arbitrary and may be inconsistent with a nitrogen loss allocation in an irrigation scheme (see Policy 11.4.17 below).
79. Ravensdown sought for Council to retain the intent of the policy to provide an upper nitrogen loss limit, subject to clarification of the appropriateness of the 80 kg/N/ha/yr number.
80. I can find no acknowledgement of Ravensdown’s submission in the s.42A Report and therefore it is difficult for me to comment on this matter further. This matter is still outstanding.
81. **Plan Provision:** 11.4 Policies Managing Land Use to Improve Water Quality – Policy 11.4.17 (Page 4-7)
*“11.4.17 To achieve the farming activity water quality targets in Section 11.7.3 require all farming activities within the command area of any Irrigation Scheme listed in Table 11(j), where they are irrigated with water from the Scheme:
(a) To collectively not exceed the Irrigation Scheme Nitrogen Limits in Table 11(j); and
(b) Where properties convert from dry land to irrigated land use, the nitrogen loss rates from the outset shall be managed in accordance with Policy 11.4.14(b).”*
82. In its submission Ravensdown expressed concerned that the reductions from the MGM Project cannot be achieved immediately because the MGM results are not available for at least another 12-18 months. It is therefore not clear how a farm converting under the scenario listed in (b) will be able to comply with Policy 11.4.14(b).
83. Ravensdown sought Council to provide clarity on the implications of complying with (b) if the nitrogen loss rates referred to in Policy 11.4.14(b) are not available (for another 12 – 18 months) if a property converts under the scenario suggested in 11.4.17 before then.

84. I am unable to find any comment in the s.42A Report to Ravensdown's submission, and no recommendation made. In my view this matter is still outstanding, and clarification from Council is required.
85. **Plan Provision:** 11.5 Rules Nutrient Management, Sediment and Microbial Contaminants – Rule 11.5.6 (Page 4-12)
“11.5.6 Despite any of Rules 11.5.7 to 11.5.13, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:
1. The property is less than 5 hectares; and
2. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum.”
86. In its submission Ravensdown considered that the current wording of Rule 11.5.6 is not consistent and conflicts with proposed CL&WRP Rule 5.41 and the s.32 Evaluation Report. Ravensdown noted that the s.32 Evaluation Report states that the framework for Option 2 has exceptions – farming activities where nitrogen loss is less than 15 kg N/ha/yr or the property is less than 5 hectares (page 80). In addition it states that this is like the regional rules in the proposed CL&WRP.
87. However, Rule 11.5.6 states that, to be a permitted activity, the property needs to be less than 5 hectares and the nitrogen loss does not exceed 15 kg N /ha/yr. This is inconsistent with the proposed CLWRP Rule 5.41, and the s.32 Evaluation Report.
88. Ravensdown seeks Rule 11.5.6 to be amended as follows (~~strikeout~~ word to be deleted; underlined word to be included):
89. .. *“11.5.6 Despite any of Rules 11.5.7 to 11.5.13, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity provided the following conditions are met:*
1. The property is less than 5 hectares; ~~and~~or
2. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum.”
90. I note paragraph 11.62 of the s.42A Report states that Ravensdown seeks the word ‘and’ deleted so that only one of the conditions need to be met. There is no reference in the s.42A Report that Ravensdown sought the inclusion of ‘or’. I can find no comment or recommendation on Ravensdown's submission. Essentially Ravensdown's submission seeks consistency with the proposed CL&WRP provisions. I consider this consistency is appropriate and has planning merit.
91. **Plan Provision:** 11.5 Rules Nutrient Management, Sediment and Microbial Contaminants – Rule 11.5.8 (Page 4-12)

“11.5.8 From 1 January 2017, the use of land for a farming activity in the Selwyn Waihora catchment is a permitted activity, provided the following conditions are met:

- 1. The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; and*
- 2. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 10 hectares within the Lake Area in the Cultural Landscape/Values Management Area, and is supplied to Canterbury Regional Council on request; and*
- 3. A Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A for all properties greater than 50 hectares, and is supplied to Canterbury Regional Council on request;*
- 4. For properties less than 50 hectares but greater than 20 hectares:*
 - (a) Until 31 December 2021, the Practices in Schedule 24 are being implemented; and*
 - (b) From 1 January 2022, a Farm Environment Plan has been prepared and implemented in accordance with Schedule 7 Part A.”*

92. Similar to the discussion above in relation to Policy 11.4.13, Rule 11.5.8 says that from 1 January 2017 farms greater than 50 ha in area require a FEP (only if nitrogen loss is greater than 15 kg N/ha/yr). In its submission Ravensdown indicated that it understands that Council estimate that there are approx. 780 properties larger than 50 ha in the catchment, although some of these will be extensive farms and not leach more than 15kg N/ha/yr. Ravensdown understands this provision will add approx. 500 more farms to the FEP requirement. Ravensdown is concerned that there will still be a sizeable number of farms in the catchment requiring a FEP from 1 January 2017, and this has implications for the capacity of the industry to prepare these plans. Ravensdown is unclear what position Council might take if a farmer is proactive and tries to obtain a FEP but due to a lack of capacity within the industry to prepare the FEP has a delay that pushes the date beyond 1 January 2017. In this scenario the farmer could be considered to be non-compliant with Clause 2 or 3 of Rule 11.5.8 meaning that their farming activity is considered to be a non-complying activity under Rule 11.5.11.
93. In its submission Ravensdown sought confirmation from Council that farmers will not be penalised if the industry cannot cope with the demand to prepare FEP's or Council's ability to review and audit these plans. I am unable to find any reference to Ravensdown's submission in the s.42A Report.

94. I agree with the concerns raised by Ravensdown and while I accept that the industry will no doubt gear itself up to provide the FEPs in time, there is a possibility that the situation arises as outlined by Ravensdown in its submission. In my view this highlights the need for a Procedural Guideline to be prepared by Council to address such situations, includes those I have referred to earlier in this evidence. An example of this Procedural Guideline was adopted in Variation 6 to the Hawkes Bay Regional Resource Management Plan (POL TT5 (g)) where Council collaborates with the primary sector to prepare the guideline, and the policy outlines the matters to be addressed. I see this mechanism as an appropriate way of providing context and certainty to how Council will implement the nutrient management provisions of Variation 1.

95. **Plan Provision:** 11.7.3 Water Quality Limits and Targets – Table 11 (i) (Page 4-34)

“11.7.3 Water Quality Limits and Targets(3)

The water quality limits in Tables 11(k) 11(l) and 11(m) prevail over the region wide limits in Schedule 8. The limits and targets in Tables 11(i) and 11(j) are additional limits for the Selwyn Waihora catchment.

Table 11(i): Catchment Target and Limits for Nitrogen Losses from Farming Activities, Community Sewerage Systems and Industrial or Trade Processes

Catchment	Activity	Nitrogen Load (tonnes/year)	Limit/Target
Selwyn Waihora	Farming	4830 ⁽⁴⁾	Target to be met by no later than 2037
	Community sewerage systems	62	Limit
	Industrial or trade processes	106	Limit

96. In its submission Ravensdown supported the requirement for the target to be achieved by 2037 and sought Council to retain the intent of Table 11(i) to require the target for farming to be met by 2037.

97. I note that while the s.42A Report recommends Council stay with existing regime in paragraph 11.74, there are changes to Table 11(i) recommended in paragraph 11.87. In particular it is recommended the words ‘activity’ and ‘farming’ be deleted from second column. I also note that further amendments are recommended to Table 11(i) in paragraph 11.5.26 which deletes reference to the limits set for community sewerage systems and industrial or trade processes. From the recommended amendments it is understood Table 11(i) would read:

Catchment	Activity	Nitrogen Load (tonnes/year)	Limit/Target
Selwyn Waihora	<i>Farming</i> ¹³⁶	4830	<i>Target to be met by no later than 2037</i>

This target includes the limit for 2022 in Table 11(j)

98. While Ravensdown’s submission has been addressed and the timeframes have been retained, I am concerned that the amendments recommended may have implications on the overall nitrogen loads for the catchment, and in particular it is not clear to me whether the new load of 4830 tonnes/yr of nitrogen for all activities (which is a reduction of 168 tonnes/yr from the 4998 tonnes/yr when the community sewerage systems and industrial and trade processes activities were separate) has been tested and the implication on farming activities has been determined. It is also not clear to me from the s.42A Report whether such a reduction will have implications for the MGM Project results and the implementation of the Variation 1 provisions post 2017 and ultimately the achieving of the water quality outcomes sought by the community.
99. Furthermore, I am also unclear how it is to be determined whether activities are meeting the reduced load. While determining on-farm nutrient losses is an appropriate use of OVERSEER™, it is unclear how the nitrogen loads from community sewerage systems and industrial and trade premises will be modelled or monitored or how the contribution to the reduced load will be determined, particularly when growth in community sewerage systems is anticipated. I note the concerns expressed in paragraph 11.294 of the s.42A Report and agree with them. However, it should be noted that the S42A Report is incorrect where it states that OVERSEER™ can be used to estimate losses from industrial and community wastes (paragraph 11.302) unless they are applied to farm land and their chemical characteristics are known. It is my understanding that the Fertiliser Association of New Zealand (FANZ) will provide specific comment in their evidence regarding the use of OVERSEER™ in the amended trade waste rule (Rule 11.5.25) on page 205 of the s42A Report.
100. **Plan Provision:** (New Heading) 11.11 Schedules – Schedule 7 – Farm Environment Plan (Page 4-37/38)
“Schedules 1 to 23 apply in the Selwyn Waihora catchment. Additions apply to Schedules 7,10 and 13.
Schedule 7 – Farm Environment Plan
Within the Selwyn Waihora catchment Part B clause 2 shall include the following additional matter:
(1) The location of any known mahinga kai, wāhi tapu or wāhi taonga within any property located in the Cultural Landscape/Values Management Area.
Within the Selwyn Waihora catchment Part B clause 5(a) shall also include following:

- *Curtail the loss of phosphorus and sediment loss rate within the Phosphorus and Sediment Risk Zone.*
 - *Achieve the Good Management Practice Nitrogen and Phosphorus Loss Rates from 2017.*
 - *Further reduce nitrogen loss rate from 2022, where a property's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum."*
101. In its submission Ravensdown sought clarity regarding:
- what the term '*curtail the loss of phosphorus*' means;
 - How the GMP phosphorus loss rates are to be determined and what is the compliance mechanism.
102. Ravensdown sought Council to better define what '*curtail the loss of phosphorus*' might mean, and to either delete the reference to GMP phosphorus loss rates in the first instance, or if the reference to GMP phosphorus loss rate is retained, delete the reference to nitrogen and phosphorus loss rates altogether (as discussed in the 'General Matters' section above) until the MGM Project is completed.
103. I note Ravensdown's submission point is referenced in paragraph 11.234; and paragraph 11.236 states: "*Overall, ... the various requests from the submitters for additions, deletions or moving components between the schedules are not considered to substantially improve environmental outcomes in a cost effective way.*"
104. I am surprised the s.42A Report does not agree that the environmental outcomes would be improved in a cost effective way by the submission points raised by Ravensdown. In my view, getting clarity regarding terms and phrases used benefits the resource user when considering how the plan affects them, and the Council when implementing the plan provisions. In my view there is also planning merit in clarifying the points made in Ravensdown's submission.
105. **Plan Provision:** Schedule 24 – Farm Practices – (a) Nutrient Management (Page 5-1)
"Add a new schedule 24 – Farm Practices as follows (shown underlined):
Schedule 24 – Farm Practices
(a) Nutrient Management:
(i) A nutrient budget based on soil nutrient tests has been prepared, using OVERSEER in accordance with the OVERSEER Best Practice Data Input Standards [2013], or an equivalent model approved by the Chief Executive of Environment Canterbury and is reviewed annually.

(ii) Fertiliser is applied in accordance with the Code of Practice for Nutrient Management [2007];

and either

(a) the Spreadmark Code of Practice; or

(b) With spreading equipment that is maintained and self-calibrated to Spreadmark Code of Practice standards.

(iii) Records of soil nutrient tests, nutrient budgets and fertiliser applications are kept and provided to the Canterbury Regional Council upon request”

106. While overall Ravensdown supported the intent of the provisions included in Schedule 24 in its submission, it questioned what is meant by ‘*and reviewed annually*’? It is not clear how Council will assess compliance with an annual nutrient budget, and the plan provisions do not require a nutrient budget to be submitted annually.
107. Ravensdown sought Council to clarify what is meant by the term ‘*and reviewed annually*’, how compliance with the annual nutrient budget will be assessed, and how the annual nutrient budget is to be provided to Council.
108. I note the s.42A Report references the FANZ submission in para. 11.240 and 11.245 which also questions this matter; and Ravensdown and Ballance submissions are referenced in paragraph 11.244. Notwithstanding this, the s.42A Report does not discuss the issues raised regarding why annual reporting of nutrient budgets is required, how compliance will be determined and how the annual nutrient budget is to be provided to Council. There is no recommendation to amend Schedule 24 to address these issues.
109. My understanding is that the fertiliser industry in general opposes the annual production of Nutrient Budgets, as the OVERSEERTM model provides for long term equilibrium and average farm system outputs. It is therefore not necessary to produce annual nutrient budget, unless there has been a significant farm system change. To require annual nutrient budgets without significant farm system changes, provides little additional environmental benefit, but adds unnecessary burden on farmers, council staff and service industries. As I understand it, average annual data is sufficient in order to understand the long term overall impacts of stable and unchanging farming systems.
110. I accept that Schedule 24 requires the nutrient budget to be provided to Council on request. What is not clear is what form Council may require the

nutrient budget to be in. These matters, including auditing and compliance, could be included in the Procedures Guidelines I have recommended in paragraph 94 above.

111. One further comment relates to the referencing to the OVERSEER Best Practice Data Input Standards [2013]. This standard is continually being update, with a 2014 version now available.

Chris Hansen

29 August 2014