

IN THE MATTER **of the Resource Management Act 1991 and
The Environment Canterbury (Temporary
Commissioners and Water Management) Bill 2010**

AND

IN THE MATTER **of the Hearing of Submissions on the Proposed
Land and Water Regional Plan**

BY **Irrigation New Zealand Incorporated**

Submitter

TO **COMMISSIONERS OF THE CANTERBURY
REGIONAL COUNCIL**

Local authority

**BRIEF OF EVIDENCE OF ANDREW ROBERT CURTIS ON BEHALF OF
IRRIGATION NEW ZEALAND INCORPORATED**

Dated: 5th June 2013

INTRODUCTION

Qualifications and Experience

1. My name is Andrew Curtis. I am the Chief Executive of Irrigation New Zealand Incorporated (INZ). I hold an upper second class BSc(Hons) degree (Physical Geography and Environmental Biology) from Oxford Brookes University and a PGDip (Environmental Management) from the University of Surrey. I also hold a New Zealand National Certificate in Irrigation Evaluation, and Massey University Certificates of Completion in Sustainable Nutrient Management in New Zealand Agriculture for both Intermediate and Advanced courses.
2. My experience and knowledge of irrigation in NZ is considerable, in terms of both land uses (pastoral through horticulture and viticulture) and irrigation systems (drip-micro and spray). Whilst at INZ I have co-authored the irrigation industry code of practices and standards for design, installation and evaluation and I have also co-authored the irrigation manager and development training resources.
3. I have much recent experience of water policy development. For example, as a representative of INZ I was actively involved in the Land and Water Forum process - plenary, small group and water quality management infrastructure and water allocation working groups since 2009. The multi-stakeholder water allocation working group explored a number of topics including, the nature of rights, allocation methods, over-allocation and water accounting.
4. My previous New Zealand (NZ) work experience includes six years employment for Hawke's Bay Regional Council, initially as an extension officer with a focus on irrigation and then as Strategic Advisor – Water. In this role I helped lead the development of the Hawke's Bay regional water strategy. This had a strong non-regulatory focus (including water storage, water user groups, water metering) to complement and better enable traditional regulatory pathways.
5. Prior to my employment with Hawke's Bay Regional Council I was employed in a variety of horticultural (in NZ) and a mixed cropping/sheep and beef (United Kingdom) orchard and farm management roles.

Summary of Evidence

6. This evidence, in the main, is a review of INZ's initial and further submission in relation to the section 42A report. It relates to both hearings 1 and 2. However, INZ also supports the evidence of Mr Callander, Mr McIndoe and Mr Curtis and their subsequent suggestions and requests that changes are made to the pLWRP accordingly.

Section 1

7. INZ supports the removal of 'particularly with irrigation' from 1.2.2
8. INZ supports the additional references to sections 12-124C and 104(2A) to 1.2.6.

Definitions

9. Changed – INZ supports the evidence of Dr Roberts and Dr Emeades and also several submissions that demonstrate the genuine annual variations in farming enterprises that in reality do not constitute land-use change, but would have done under the previous definition. Farming is dynamic and more so than any other business has to respond to both climatic and market parameters. INZ now supports the Category approach put forward by Dr Roberts with a couple of additions given below. Note: INZ also notes that after six months of discussions with the primary sector policy group to derive a suitable land use change definition (a) it is an extremely complex task to define simplistically and capture all variations (b) for the sub-regional chapters writing policy with a need for a 'changed definition' should be avoided!

Category 1 land uses (expected to have relatively low N loss): Sheep, beef and deer farms, arable farms, mixed arable/livestock farms and perennial horticultural crops. Trigger value is +30% change in N loss.

Category 2 land uses (which may have relatively high N loss): Dryland and irrigated dairying and dairy support, irrigated finishing units, commercial vegetable production.

Trigger value is +10% change in N loss.

10. Advanced Mitigations – INZ questions the need for a list of advanced mitigations as overtime they will change / be added to as understanding of 'cause and effect' and

nutrient management technologies improves. Also combinations of these current mitigations may increase nutrient discharges in certain scenarios – for example reduced N fertiliser inputs may impact vegetative growth which may then impact P and sediment loss (erosion due to lack of vegetative cover in rolling downland for example). The applicability of advanced mitigations must be worked through on an individual farm basis due to the uniqueness of each enterprise. INZ suggests the list is deleted and the following definition is given ‘Advanced mitigation measures mean the adoption of multiple interventions to minimise nutrient loss from a property’.

11. High Nutrient Risk Farming Activity – This definition needs to be refined to fit with the new changed definition put forward by Dr Roberts and amended by INZ above - the Category 2 land uses.
12. Efficiency – INZ supports the evidence of Mr Curtis - Add dynamic efficiency to the efficiency definition.
13. EMS for Irrigation – INZ supports the section 42A report that the definition be deleted as it is not included in the plan.
14. Infrastructure – INZ feels that the RMA definition needs greater clarity with regard to water supply distribution systems. The pLWRP definition needs to be put in context with the Canterbury Water Management Strategy where reliability of supply, through storage, in combination with efficiency gains, through the modernisation and development of infrastructure, are two key drivers. Part e) should therefore list the key components of a reliable and efficient water supply distribution system to avoid future confusion. “A water supply distribution system, including intake structures, storage, distribution structures, channels and pipes, and application equipment”.
15. Irrigation – INZ supports the evidence of Mr Curtis for the reason given in his evidence. ‘Irrigation is the artificial application of water to land’.

Objectives

16. INZ is generally supportive of the new set of proposed objectives put forward in the section 42A report as a replacement for those in the notified plan. In summary

17. INZ is strongly supportive of new objectives 3.3, 3.5, 3.7 & 3.9. They provide for the sustainable and reliable abstraction, supply and use of the water resource alongside recognising the importance of maintaining a dynamic environment for land use. The latter point is extremely important. NZ does not subsidise its land users, instead it relies upon the ability of its land users to adapt to market conditions/requirements to remain profitable. However, if the dynamicity of the current system is severely compromised it undermines this, and thus the future resilience of the NZ market based approach to agriculture.
18. INZ still finds the new objective 3.4 confusing and suggests the objective is split – ‘Water is available for abstraction and use, within the allocation limits and management regimes set out in this plan, to support social and economic activities. “The social and economic benefits of water are maximised through its efficient storage and use”’.
19. INZ finds the use of ‘base flow’ in objective 3.6 confusing and questions whether minimum flow is a more appropriate terminology for use, given minimum flows are commonly referred to in the limits and water allocation sections of this plan?
20. In objective 3.8 the word ‘efficiently’ should be replaced with ‘justified’. Efficiency has a range of definitions depending on the temporal and spatial parameters used and also the slant of the analysis taken – technical, economic or dynamic perspective and subsets within these. INZ instead uses the word ‘justified’ when talking about ‘efficient’ use. Was there a justifiable reason to take and use the water and is this able to be demonstrated and stand up to scrutiny.
21. In objective 3.12 the word ‘restored’ should be replaced by ‘improved’. In reality it will not be possible to restore some of Canterbury’s outstanding fresh water bodies and *hapua* due to the extreme level of human impact upon them. They are no longer a natural system and thus are not able to be restored. Te Waihora would be one example of this. The vast wetlands that once surrounded the lake (the whole lower plain) have been drained, the water level is subject to major human influence - controlled by lake openings to prevent flooding, the inflows are greatly changed due to abstraction and more importantly upper catchment drainage for examples. INZ feels objectives should be achievable and realistic and the use of the word ‘restored’ in this instance would be setting up the community to fail.

22. In objective 3.15 it should be more specifically recognised that a range of scales and methods, including infrastructure, collective and individual based approaches will be needed to achieve community outcomes through setting and managing within limits. “Community outcomes for water quality and quantity are met through setting, and managing within limits. This will require a range of different approaches so that optimal outcomes are achieved for each community”.
23. An additional objective should be included that recognises the importance of food, fibre and beverage production and processing to both the Canterbury region and national economy. Canterbury, including Christchurch, is a rural based economy whose community well-being relies on its rural production base and subsequent processing facilities there is much economic evidence that underpins this statement, some of which is contained in INZ’s general submission. “The significant contribution that food, fibre and beverage production and its subsequent processing make to the economic and social well-being of the Canterbury region and nationally are recognised”.

Policies

24. New policy 4.1 states that water bodies will meet the outcomes set in sections 6-15 within the specified timeframes and if no outcomes are set they will meet the outcomes in table 1 by 2023. INZ supports the addition of a timeframe to policy 4.1 as this is consistent with the RPS.
25. However the numeric values contained in table 1 are fraught with issues. Table 1 origins are aspirational, they are therefore likely unachievable for certain environments as a ‘must not be breached limit’. As noted in the evidence of Ms Haywood with regard to Table 1:
 - a. They were set for the long term (they were aspirational).
 - b. The cost and consequences of achieving them has not been analysed.
 - c. Water quality indicators are inherently variable (both spatial and temporal) as a result of natural and human factors.
 - d. They are now being applied in a different regulatory context.
26. Whilst INZ originally requested the deletion of table 1 we now realise there needs to be some parameters within the plan to create an interim holding position for the

region. Without this the future management situation may become more problematic for some zones prior to the sub-regional chapters being established. Table 1 should therefore be referred to as interim freshwater objectives, to be replaced by outcomes from the Zone Committee collaborative processes. Indicative timeframes should also be included for the completion of these. Importantly it should be made clear that table 1 is not a starting point for the collaborative process.

27. In terms of the issues created by their use as 'not to be breached' limits the adoption of an averaging approach, as recommended by Ms Haywood would be a suitable approach to overcome this. Lastly the urban rural divide needs addressing in table 1. It should be an equitable playing field for all lowland plains streams and not a lower threshold for one.
28. Policy 4.4 – The RMA and NPS Freshwater Management both require all values to be balanced. The CWMS is a parallel development concept that through collaborative decision making balanced the needs of communities. The priority approach taken by the pLWRP is unhelpful and is not reflective the above.
29. Water is managed through the setting of freshwater objectives and managing within limits. In doing this the maintenance of the life supporting capacity of ecosystems, customary uses, provision of community and stock water, water for irrigation, food, fibre and beverage production, hydro-electricity generation and other economic activities, and the maintenance river flows and lake levels for recreational needs should all be considered.
30. Policy 4.6 – INZ is supportive in part of the amendment made in the section 42A report – the recognition that this policy does not apply to consent renewals. This is also consistent with the Canterbury RPS. INZ suggests the following wording ...sections 6-15, new resource consents¹, will generally not be granted... ¹excludes consent renewals.
31. Additional Policy – The section 42A report makes no reference to the INZ submission requesting a strategic policy be added as to the approach to be taken to finding management solutions to over-allocation. From experiences to date, INZ feels it is important to give the collaborative community process greater direction. Firstly and most importantly the cause and effect needs to be established (where

and from whom the issue originating), then all impacted parties need to be engaged to develop and implement the solution package (everybody that is having an affect needs to understand the issue and do their bit in finding and implementing the solution - no matter how small their impact). This engagement needs to consider what is achievable and the timeframes within which this can be achieved. INZ therefore suggests the following policy is added. 'Where there is an over-allocation of water quantity or quality, an approach that focuses upon cause and effect and engages all impacted parties to find viable solutions within achievable timeframes will be adopted for its resolution'.

32. Policy 4.26 – INZ supports the section 42A report changes as this excludes water races from the definition
33. Notified Policies 4.28 – 4.38 INZ is not supportive of the implementation of nutrient discharge allowances. The evidence of Mr Curtis & Dr Davoren demonstrate the current major issues with using OVERSEER for producing a discharge allowance on a per property basis for irrigated agriculture. Although INZ does note that in the medium to long-term such an approach may become feasible.
34. INZ does however, support the section 42A report and its new approach to nutrient management
35. New policies 4.28, 4.30, 4.34, 4.38, 4.38(A) & 4.38(B) are strongly supported by INZ as they underpin the implementation of GMP and ASM. This practical based approach is essential if changes on the ground are to occur.
36. INZ supports the general intent of policy 4.29, however the prioritisation should be in relation to the sensitivity of the receiving environment and also the category of activity as per Dr Roberts definition of changed.
37. INZ supports the intent of policies 4.31 & 4.32, however defining the top 10% will create challenges. INZ therefore suggests a top quartile approach is taken for both policies. It is also unclear if the policies apply only to nitrate losses or whether they also include other factors such as sediment, P and microbial losses, riparian and wetland protection? All should be included if the focus is upon overall nutrient management. An upper threshold should also be considered for red zones to ensure any 'change' is 'appropriate'. INZ accepts that certain land management activities in being allowed in sensitive environments, even if allowed to continue at

the top quartile of performance, will cause greater issues in the long run and thus should be avoided.

38. INZ is strongly supportive of policy 4.35 as it introduces the GMP concept to urban discharges.
39. INZ opposes the nutrient discharge allowance terminology used in 4.36 & 4.37 for the reasons stated in INZ's original submission and the evidence given by Mr Curtis and Dr Davoren.
40. INZ supports 4.38A providing point 3 is removed as it is nonsensical.
41. Policy 4.46 – INZ supports the provision of community water supplies not requiring compliance with flow regimes, subject to continuous improvement in water use efficiency and restrictions being imposed at times of restriction (a water supply strategy). The section 42A report dismisses the need for the reference to be included in this policy, stating it is covered elsewhere. INZ has only been able to find a reference to a water supply strategy in rule 5.88 and none in other policies? INZ therefore suggests the reference is also included in the policy.
42. Policy 4.47 (a) – INZ is accepting of the need to provide for 'future reasonable need' for community and drinking water supplies. However, the impacts upon existing consent holders must also be considered in this. Therefore, additional takes for water and stock supply should be subject to a water supply strategy that addresses water use efficiency and management restrictions in times of restriction (as per policy 4.46 above).
INZ suggests the following changes to the section 42A report –
 - (a) any abstraction necessary to meet community drinking and stockwater requirements subject to a water supply strategy being in place
43. Policy 4.48 – INZ is supportive of the section 42A report recommendations.
44. Policy 4.50 (a), (c) and (d), 4.60, 4.63 & 4.66 – There is no need for a seasonal or annual allocation limit on a take to storage and the reasons for this are given in the evidence of Mr Callendar and Mr Curtis. Also for policy 4.50, if the storage is not full it should be allowed to be filled within the bounds of the catchment plans flow regime and the resource consent site specific take conditions. Points (c) and (d) should instead be replaced with a reference to the resource consent being made consistent with the corresponding flow regime, as set out in the catchment plan.

45. Policy 4.51 – INZ supports the Section 42A report recommendations – now we understand the logic behind the 30 l/s threshold.
46. Policy 4.64 – INZ supports the Section 42A report recommendation.
47. Policy 4.67 (b) – INZ is not supportive of defining an irrigation season within a policy. Irrigation should be able to be applied at any time providing it is justified (there is a soil water deficit and the soil temperature allows for plant growth). There are also reasons to apply irrigation for other beneficial uses, for example, frost protection, activating herbicides and these should be allowed for. For example, for the recent 2012-13 drought event in Hawke’s Bay irrigation was justified through to mid-May. INZ requests the date restrictions are therefore removed.
48. Policy 4.70 – INZ supports the Section 42A report recommendation.
49. Policy 4.71 and 4.72 – INZ supports the Section 42A report recommendation.
50. Policy 4.73 – INZ refers to the evidence of Mr McIndoe, Mr Callander, Mr Butcher and Mr Curtis with regard to the transfer and arbitrary surrender policy.
 - The limits currently contained in sections 6-15 are only informed by incomplete science - first or second order methodologies.
 - The economic disincentive for the efficient use of water.
 - Over-allocation, as a first principle, should be dealt with through a catchment specific, inclusive approach. In many catchments the solution will include the creation of ‘new water’ through water use efficiency gains and infrastructure development. Confusing over-allocation policies and with those for transfer of permits will create unintended outcomes for the CWMS targets and must be avoided
 - From the tabled evidence of Dr Davoren the number of water transfers is not huge (approx. 1% of zone limit and even less of allocated volume) and thus the effectiveness of using transfers as an ‘over-allocation clawback mechanism’ is very much questioned.

INZ therefore recommends that the policy is deleted.

51. Policy 4.76 – INZ opposes the time duration imposed on this policy. The reasons for this are supported in the evidence of Mr Curtis and Mr Callander. The policy should therefore be deleted.

Rules

52. For rules 5.39 – 5.51 – INZ is generally supportive of the new rule framework contained in the section 42A report.
53. Rule 5.39 – INZ supports this new rule providing the high nutrient risk farming activity definition is changed as per INZ evidence above.
54. Rule 5.40, 5.41, 5.42, 5.44, 5.46 & 5.47 – INZ supports these new rules providing the appropriate changes are made to schedule 7 as per INZ evidence below.
55. Rule 5.43 – INZ supports this new rule providing the high nutrient risk farming activity definition is changed as per INZ evidence above, and the appropriate changes are made to schedule 7 as per INZ evidence below.
56. Rule 5.96, 5.99 and 5.101 – Limited notification (to affected parties only) should be added to these rules. There is no need for public notification as the planning process (setting the limit) has already reflected the community outcomes. This amendment will also help put the focus squarely on the plan process and move away from the consent led process of old. INZ finds the section 42A response to the above reasoning intriguing – on one hand the plan is taking the limits as having been robustly set, applying default policies to manage over allocation through transfer surrender and giving prohibited activity status, whereas on the other hand it is stating the limits are not robust and thus limited notification status cannot be applied as a default. INZ requests changes are made to the pLWRP accordingly to ensure all policies and rules are consistent.
57. 5.98 & 5.104 – INZ refers to the evidence of Mr Calander, Mr McIndoe and the tabled evidence of Dr Davoren. A default of prohibited activity status is not applicable until limits have been set through a robust community process. Even then it is doubtful that prohibited activity status is applicable due to the evolving nature of the science and knowledge around water quantity limits and allocations. Prohibited activity status could also create issues for future ‘adaptive management’

options should they be implemented. INZ therefore suggests non-complying activity status is more appropriate for these rules.

- 58. 5.107 (5) – refer to policy 4.73 (paragraph 52.) and remove point 5.
- 59. Rules 5.109, 110 & 111 – INZ supports the Section 42A report recommendation

Schedules

- 60. Schedule 2 – INZ supports the recommendations made in the section42A report.
- 61. Schedule 7 – INZ supports the evidence of Ms Mulcock in relation to the Schedules amendment. It is important farm plans are focused upon water quality and quantity outcomes and do not become side tracked with other factors. This is both from a transaction cost and land user buy-in perspective.
- 62. Schedule 8 – INZ supports the amended schedule 8 - that it should articulate good management practice in general and not solely in relation to nitrogen leaching rates. Importantly this will include both narrative practices and numerical values and relate to N, P, sediment, microbial, riparian and wetland management in the context of profitable and viable farms.
- 63. Schedule 10 – INZ refers to the evidence of Mr McIndoe and agrees that instead of methodologies being contained within the plan a list of suitable criteria is instead provided – refer to Appendix B in Mr McIndoe’s evidence.
- 64. Schedule 16 – INZ is supportive of the inclusion of this schedule, but it needs to be recognised this map is a snapshot in time and that it will date rapidly, particularly once ground truthed feasibility information becomes available. INZ notes the map includes no Tekapo to South Canterbury option for movement of water across zones, this should be added. If the option for Rangitata water moving south is shown to be unfeasible, the water from Tekapo to South Canterbury option will then have to be further investigated. INZ requests the map is amended with the addition of the Tekapo to South Canterbury option

INZ Submission Ends