

BEFORE THE Canterbury Regional
Council
IN THE MATTER OF the Environment
Canterbury (Temporary
Commissioners and
Improved Water
Management) Act 2010

AND

IN THE MATTER OF Submission and Further
Submission on Proposed
Plan Change 3 to the
Canterbury Land and
Water Regional Plan

**STATEMENT OF EVIDENCE OF ANDREW CURTIS ON BEHALF OF THE SOUTH
CANTERBURY PROVINCE OF FEDERATED FARMERS OF NEW ZEALAND**

Dated 25 September 2015

South Canterbury Federated Farmers Inc
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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. I have experience and knowledge of irrigation in New Zealand, 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 the irrigation manager and development training resources. I was lead author on the OVERSEER irrigation input standards. I have also published a number of papers on the history, current extent and future development of irrigation in NZ. I was also the owner operator of a vineyard whilst in Hawke's Bay and successfully managed both a frost protection and drip irrigation system for eight years.
3. I am active in the area of water policy development. For example, as a representative of INZ I am involved in the Land and Water Forum process - plenary, small group and in this current iteration core elements and nature of rights and implementation of water allocation flexi-groups. These multi-stakeholder expert groups will explore a number of topics including, exploration of potential reforms to the current rights regime, allocation methods, options for resolving over-allocation and water accounting.
4. My previous New Zealand work experience includes six years employment with 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.
6. Irrigation NZ is a membership funded national industry body that promotes excellence in irrigation. It represents the interests of over 3600 irrigators totalling over 360,000ha of irrigated land. I acknowledge that part of my role with INZ includes advocating for the irrigation industry.
7. However, in providing this statement of evidence, I have nevertheless confined my comments to addressing matters directly relevant to my professional expertise, or my involvement in the Variation 3 Process. I appreciate that in providing expert evidence, I am required to be impartial and unbiased in the professional opinions expressed.
8. I confirm that I have not omitted to consider materials or facts known to me that might alter or detract from the opinions I have expressed.

SCOPE OF EVIDENCE

9. My evidence will cover the following matters:
 - a) *The impacts of OVERSEER version 6.2 on irrigation drainage and nutrient modelling*

OVERSEER & IRRIGATION

10. Until the release of the latest version of OVERSEER (6.2), the tool has not been able to robustly account for the differences in drainage, and thus nutrient losses, from differing irrigation application practices. Earlier versions of Overseer – as used in the preparation of Variation 3, did not robustly account for either irrigation system constraints or differences in management practices. As a result, there will be differences, in both drainage and modelled nutrient loss outcomes, for the Good Management Practice Irrigation rules being developed under the Matrix of Good Management (MGM) project (using OVERSEER version 6.2) and the load and farm limits in variation 3 which used earlier versions of Overseer.

11. On the ECan website, under variation 3, there is a webpage that contains information as a result of a 'Request from several parties for OVERSEER input files and related assumptions used for re-modelling with OVERSEER version 6.2'. Under 1a there is a reference to a personal communication from myself regarding the irrigation modelling rules for the MGM project. It should be noted that the rules referred to in this communication had not been agreed by the MGM modelling team and will likely now change as a result of further discussions within the team on the 18th September 2015.
12. The expected impact of this for the MGM irrigation modelling rules are -
 - (a) For very light and light soil types there will be an increase in drainage and thus an increase in nutrient loss that will be related to the land use type
 - (b) for extra light, medium and heavy soil types there will no change
13. This needs to be considered when reading the Technical Memoranda from Ned Norton on the 31st August 2015, 'Updating Nitrogen Loss Numbers for OVERSEER version 6.2 in Plan Change 3 (South Canterbury Coastal Streams).'
14. Once the MGM rules for irrigation have been agreed upon, an assessment of their impacts on the variation 3 limits will be available. It is expected that this will be able to be provided to the Variation 3 hearing Commissioners at, or before the hearing of Variation 3 submissions.

Andrew Curtis

25 September 2015