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SUBMISSION: Plan Change 5 to the Canterbury Land and Water Regional Plan

Date:	11/03/16
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(Andrew Curtis, CEO IrrigationNZ)

Irrigation New Zealand wishes to be heard in support of its submission.

OVERVIEW

1. IrrigationNZ (INZ) is a national body that promotes excellence in irrigation. INZ represents the interests of over 3,600 irrigators (irrigation schemes and individual irrigators - the majority of these being in Canterbury) totaling over 360,000ha of irrigation (over 50% of NZ's irrigated area). It also represents the interests of the majority of irrigation service providers (over 150 manufacturers, distributors, design and install companies and consultancies).

2. An irrigators business is founded on certainty. This includes access to a reliable water supply for irrigation and the ability to farm their land with a degree of flexibility. It is this certainty that enables investment and continuous improvement in resource use efficiency. Without certainty they and the considerable flow-on benefits to the regional economy are severely impacted. The national economy would also be impacted upon given NZ is an agricultural export based economy.

General Comment

3. INZ finds PC 5 Part A extremely confusing to read, with particular regard to how the policies and rules interact with each other and the resulting expectations for property owners, farming enterprises and irrigation schemes in the various coloured zones. INZ strongly encourages caucusing takes place prior to the hearings, firstly to provide a clear map of the plans expectations to all involved and subsequently to identify any issues or simplifications for the implementation of Good Management Practices in Canterbury, including the use of the farm portal.

Submission

Reference	Issue	Relief Sought
PART A		
Definitions		
Baseline GMP Loss Rate & GMP Loss Rate	The portal is first generation. As a result, there are unresolved issues with the fertiliser and irrigation modelling rules for the production of a properties Baseline GMP Loss Rate or GMP Loss Rate. A property could have adopted the industry agreed GMP's for water quality and applied these to their nitrogen loss calculation, but its Baseline GMP Loss Rate or GMP Loss Rate generated by the portal may be less than this due to the modelling rules used. See schedule 28 in this submission for more information on the irrigation issues. The purpose of the MGM project and subsequently Part A of Plan Change 5 was to agree and implement Good Management Practices (actions happening on-farm). This needs to be recognised. Changing the Baseline GMP Loss Rate and GMP Loss Rate definitions, as opposed to making numerous changes within policies and rules themselves, may provide a simpler option to allow for the above concerns to be accounted for. Options for both have been provided in this submission,	*Baseline GMP Loss Rate* *means the average nitrogen loss rate below the root zone as estimated by the Farm Portal <u>or a nitrogen loss calculation that demonstrates implementation of Good Management Practices</u>, for the farming activity over the baseline period; and where a Baseline GMP can't be generated by the portal it means the nitrogen baseline.* *GMP Loss Rate* *means the average nitrogen loss rate below the root zone as estimated by the Farm Portal <u>or a nitrogen loss calculation that demonstrates implementation of Good Management Practice's</u> over the most recent four-year period, if operated at good management practice.*
Winter Grazing	This definition unnecessarily captures a number of farming scenarios that pose minimal risk.	*INZ supports the DairyNZ submission*

Policies		
4.11	INZ supports this policy as it provides some certainty for consent holders whilst ensuring an equitable catchment approach to water quality can be implemented	*Support*
4.34	In (a) and (c) the word 'modelled' should be removed as it forecloses future options such as actual measurements. In (b) the reference should be to Good Management Practices	*(a) …record-keeping of ~~modelled~~ nutrient losses* *(b) Delete and replace with* *the implementation of Good Management Practices* *(c) requiring the provision of ~~modelled~~ nutrient loss from irrigation schemes, farming enterprises and farming activities to enable better decision making*
4.36	Policies need to take into account the portal is first generation and contains issues with two of the modelling rules… see Baseline GMP Loss Rate & GMP Loss Rate section	*(a) …through the implementation of good management practices* *(b) Delete* *(b)(b) …managing their nitrogen loss in accordance with Baseline Good Management Loss Rates, or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period, and being subject to a resource consent process; and*
4.37	Red, Lake and Orange zones should have the same rule framework. Policies need to take into account the portal is first generation and contains issues with two of the modelling rules… see Baseline GMP Loss Rate & GMP Loss Rate section (b) (ii) The purpose of the region wide rules is to equitably move farmers to GMP. INZ has interpreted this policy as going beyond this and therefore creating an inequitable N-loss claw-back mechanism, particularly for cropping farmers (crop rotations) and cyclical commodity prices that influence stock ratios and rates. An irrigator should have to operate within their Baseline GMP Loss Rate, but any further reductions upon this should be left to the sub-regional planning process to determine.	*4.37 Freshwater quality is improved within the Red, Lake and Orange zones by:* *(a) avoiding the granting of any resource consent that will allow nitrogen losses from a farming activity to exceed the Baseline GMP Loss Rate or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period, except where Policy 4.38A applies by:* *(b) including on any resource consent granted for the use of land for a farming activity conditions that:*

		(i) limit the nitrogen loss calculation for the farming activity the Baseline GMP Loss rate <u>or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period; and *(ii) delete and replace with* *<u>require farming activities to operate at or below their Baseline GMP Loss rate or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period</u>*
4.38	This policy is replaced with the above	*Delete*
4.38AA	It is unnecessary for a property in the Green and Light Blue allocation zones to be restricted to an increase of +5kg/N/ha. There is still headroom in these zones and land use change to more intensive activities should be enabled through a consented pathway.	*(a) Delete and replace with* *<u>Requiring a resource consent for a farming activity that increases its Baseline GMP Loss Rate or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period</u>,* *(b) Delete* *(c) Delete*
4.38AB	This policy is not consistent with section 102 (2) of the Act and should therefore be deleted	*Delete*
4.38A	The Green and Light Blue Zones should be excluded from this policy for the reason given in 4.38AA, and the Lake zone included	*Within the Red, Lake <u>Green, Light Blue</u> and Orange zones…*
4.38B	This policy is supported in principle however: - It is unclear what is meant by 'intensity'? - Irrigation schemes and farming enterprises with consents should not have to enter property specific information into the portal. These entities already have Environmental Management Systems that detail the reporting requirements to be followed (Policy 4.41D).	*…are monitored through requiring property owners, <u>excluding those that belong to a consented irrigation scheme or farming enterprise</u>, to submit information <u>relating to</u> ~~regarding their type and intensity of~~ <u>nutrient losses</u> from their farming activity to the Farm Portal;…*

4.38C & 4.38D	These are realistic time period for farming activities to achieve Good Management Practices, providing: - The Lake zone requirement is pushed back to 1 January 2017 - an alternate nitrogen loss calculation pathway is provided for farmers to demonstrate they are implementing Good Management Practices - the portal modelling rules that generate the Baseline GMP Loss Rate are updated to reflect the concerns highlighted in the Schedule 28 section of this submission.	*Conditional Support for both policies* *4.38D* *(a) 1 July 2017 for any land where…*
4.38E		*Support*
4.41A	A Controlled activity pathway should be available for any activity that meets the Baseline GMP Loss Rate or an alternative nitrogen loss calculation that demonstrates the implementation of Good Management Practices. Policy 4.41A (b) provides a pathway for Accredited Farm Consultants to be recognised.	*(c) Delete*
4.41B	The purpose of the MGM project and subsequently Part A of Plan Change 5 was to agree and implement Good Management Practices (actions happening on-farm). This needs to be recognised. OVERSEER is not an annual 'what happened' compliance tool, its outputs are long-term annual averages and are best used to look at relative change between farming systems. Data inputs need to reflect this, particularly where they relate to activities driven by seasonal climatic variations.	*(a) … targets and actions in the Farm Environment Plan and Good Management Practices, ~~and Good Management Practices Loss Rate~~ and;* *(e) requiring the nitrogen loss calculation to be ~~prepared using annual input data~~ reviewed in circumstances where:*
4.41C	There is headroom in the Green and Light Blue zones to allow for land use change to more intensive activities.	*Maintain water quality in Red, Orange ~~Green and Light Blue~~ and Lake zones ~~and improve water quality in Red Nutrient Allocation zones and Lake Zones~~ by requiring;* *(b) (ii) delete*

New Policy	This new policy provides for irrigation schemes in Green and Light Blue zones and recognises the risk to water quality is minimal in these areas	*Maintain water quality in Green and Light Blue zones by requiring;* *(a) Any application for resource consent for the discharge of nutrients submitted by an irrigation scheme or principal water supplier to describe the methods that will be used to implement the good management practices on any land that will be supplied with water from the scheme or water supplier*
4.41D		*Support*
New Policy	Irrigation Good Management Practice expectations for water quality should be consistent with those for water quantity. Policy 4.68 states that water used for irrigation is applied with good practice that achieves an irrigation application efficiency of not less than 80%. There needs to be an equivalent policy for water quality that reflects this or policy 4.68 refined accordingly.	*Irrigation Good Management Practice for water quality achieves an irrigation efficiency of not less than 80%*

Rules		
5.41A		*Support*
5.42A		*Support*
5.43A	Red, Lake and Orange zones should have the same rule framework. All permitted activities should achieve the Industry Agreed Good Management Practices (Industry GMP). This gives Environment Canterbury a mechanism to deal with small block issues.	*Within the Red, Lake and Orange zones the… …are a permitted activity provided the following conditions are met:* *1. The property has adopted the relevant industry Good Management Practices*
5.44A	Red, Lake and Orange zones should have the same rule framework. The property information should be reviewed and updated by the property owner or their agent every 60 months (5 years). Properties that fall under the triggers >10 ha but under 50 ha irrigation or 20 ha winter feed are low risk and need to be treated as such. The irrigated land threshold should be 50 ha regardless this will avoid an unnecessarily complicated rule framework (+10 ha post 2016). The Management Plan condition should be deleted as it over complicates the water quality management framework, instead all permitted activities should achieve Industry GMP.	*Within the Red, Lake and Orange zones…* *1. … every 60 months thereafter* *3. Delete* *5. Delete* *6. The property has adopted the relevant industry Good Management Practices*
5.44B	Red, Lake and Orange zones should have the same rule framework. The Farm Environment Plan being prepared by an Accredited Farm Consultant should be a matter for control. If it is not prepared by one greater scrutiny can be applied during the consent application phase.	*Within the Red, Lake and Orange zones…* 3. Delete …reserves control over the following matters: 10. The quality of the Farm Environment Plan, including whether it has been prepared or reviewed by an Accredited Farm Consultant
5.45A	Red, Lake and Orange zones should have the same rule framework.	*Within the Red, Lake and Orange zones…*

	Rules need to take into account the portal is first generation and contains issues with two of the modelling rules… see Baseline GMP Loss Rate & GMP Loss Rate section.	*3. Until 30 June 2020, the nitrogen loss calculation for the part of the property in the red, lake or orange zones does not exceed the nitrogen baseline, and from 1 July 2020 does not exceed the Baseline GMP Loss Rate a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period.*
5.46A	Red, Lake and Orange zones should have the same rule framework. Rules need to take into account the portal is first generation and contains issues with two of the modelling rules… see Baseline GMP Loss Rate & GMP Loss Rate section.	*Within the Red, Lake and Orange zones…* *2. Until 30 June 2020, the nitrogen loss calculation for the farming enterprise in the red, lake or orange zones does not exceed the nitrogen baseline, and from 1 July 2020 does not exceed the Baseline GMP Loss Rate a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period.*
5.47A	The non-complying rule needs to be in place for properties that are not achieving their Baseline GMP Loss Rate and their relevant industry GMP's.	*…, or condition 1, 2 or 3 of Rule 5.45A…* *… conditions 1, 2, 3 or 4 of Rule 5.46A…*
5.48A	This rule needs to be deleted as prohibited activity status is not appropriate given the uncertainties currently involved in modelled Baseline GMP Loss Rates.	*Delete*
5.49A – 5.56AB	These rules are now covered through the above rule framework	*Delete*
New policy	In green and light blue zones a Good Management Practice pathway should be made available for irrigation schemes	*In addition to rule 5.41A, the use of land for a farming activity in a Green or Light Blue zone where:* *1. The land is subject to a water permit that authorises the use of water for irrigation and:* *a. The permit is subject to conditions that require the implementation of Good Management Practices*

		b. <u>The permit is subject to conditions which require the preparation and implementation of a plan to mitigate the effects of the loss of nutrients to water</u> *<u>Is a permitted activity.</u>*
5.57A, 5.57B, 5.57C & 5.58B		Rules 5.57A, 5.57B, 5.57C & 5.58B should be adjusted as per the changes to rules 5.43A, 5.44A & 5.44B & 5.46A in this submission respectively For 5.57B 1. the date should be changed to 1 January 2018
5.58A	There is headroom in the Green and Light Blue zones to allow for land use change to more intensive activities providing a resource consent pathway is followed	*<u>Within the Green or Light Blue zones the use of land for a farming activity that does not comply with rules 5.57C is a restricted discretionary activity</u>.* *The exercise of discretion is limited to the following matters:* *5. Delete* *6. Delete* *9. Delete*
5.59A	This rule is not needed for Green and Light Blue zones due to changes to the rule above	*Delete*

Schedules		
Schedule 7	The requirements of 4B (a) and (b) need refining. There is no benefit to and considerable cost in producing a baseline nutrient budget, a baseline GMP nutrient budget and a GMP Loss Rate nutrient budget. Instead the minimum requirement for FEP content should be a nutrient budget that shows the nitrogen baseline nutrient budget pre 30 June 2020 and a baseline GMP Loss Rate for the property post 1 July 2020 Irrigation Management Targets The targets are not technically sound and the case of (4) set highly unrealistic expectations. They have been re-worded to address these concerns.	*4B (a) Pre 30 June 2020 a nutrient budget that shows the Nitrogen Baseline and post 1 July 2020 a Baseline GMP Loss Rate or a nitrogen loss calculation that demonstrates implementation of Good Management Practices for the farming activity over the baseline period, at the dates specified below:* - *Red, Orange and Lake 1 July 2017* - *Green and Blue Zone 1 January 2018* *Delete (b)* *Management Area: Irrigation Management* *(1) New irrigation systems are designed and installed ~~and operated~~ in accordance with industry ~~best practice~~ codes of practice and standards* *(2) Existing irrigation systems have an annual performance assessment and are maintained so as they apply irrigation at their optimal efficiency.* *(3) All applications of irrigation are justified through soil moisture monitoring or soil water budgets* (4) The timing and depth of irrigation applied takes account of crop requirements and soil plant available water.
Schedule 7A	This schedule is no longer required under the rule framework above. If this schedule is not to be deleted it needs to be re-written. It is not technically sound to mix-up irrigation, effluent and fertiliser Good Management Practice expectations.	*Delete*

Schedule 28 – Irrigation & Fertiliser Rules	INZ supports the farm portal approach however there are issues that need to be resolved before there is confidence in its use. INZ supports DairyNZ's submission on the fertiliser modelling rules. INZ was extremely frustrated by the process used to set the irrigation and water use modelling rules. It was not collaborative and ECan's modelling team only engaged at the eleventh hour despite numerous requests from INZ prior to this. An agreement was made between INZ and ECan at a meeting on the 18/09/2015 that a travelling irrigator (rotary boom) should be used for the GMP modelling rule (the exception to this being soils with a PAW_{60} <40mm). This agreement has not been correctly implemented. A 50% irrigation trigger point is used to overwrite the imported OVERSEER file to create the Baseline GMP & GMP Loss Rate, however the irrigation depth remains as per the imported OVERSEER file. It should instead be overwritten by a 40-55mm irrigation depth (soil dependent). For a centre pivot scenario applying 10-20mm per application this results in a beyond best practice scenario rather than good management practice. The issue of irrigation application efficiency was also raised at this meeting. How the modelling rules related to policy 4.68 within the LWRP, '*water used for irrigation is applied with good practice that achieves an irrigation application efficiency of not less than 80%'*, where irrigation application efficiency means '*the volume of water stored in the plant root zone following irrigation, as the percentage of the total water applied*'. The question came about because of the underlying modelling assumption that was being adopted 'no drainage losses could be directly created through an irrigation event' and the resulting reluctance to run with a travelling irrigator scenario that created direct drainage. We think this is because it was assumed OVERSEER applied an irrigation application efficiency loss to drainage based on the irrigation system type selected. For the OVERSEER 6.2.1 irrigation module this is no longer the case. A detailed understanding of how the OVERSEER 6.2.1 irrigation module works can be	*INZ supports DairyNZ's submission on the fertiliser modelling rules.* *Irrigation and Water Use* *There are two options to address the issues with the irrigation modelling rules:* • *Develop a new 80% irrigation application efficiency modelling rule. Of the 95% of each irrigation application that makes it to the soil (this accounts for 5% delivery system and evaporative losses), 20% is lost to drainage and 80% available for plant use.* • *Refine the current irrigation modelling rule so it truly reflects a travelling irrigator scenario.* *Note: the second option would also need to be related to the 'no less than 80% efficiency irrigation application efficiency' policy.* *Both options will be worked through and evidence given at the hearing. The intention being to provide a solution to the current issue with the irrigation modelling rules.* *INZ would be happy to work with an ECan representative to achieve this.*

	gained by reading Technical note 7: Irrigation Upgrade, and the Hydrology and Climate technical manuals. In summary, for each irrigation event a 3-5% efficiency loss (a combination of delivery system and evaporation losses) is applied by the model. This is not attributed to drainage (the losses are before the irrigation water reaches the soil) and is therefore outside the definition. To account for irrigation application efficiency the user-defined irrigation inputs (trigger points and depth applied) are now used. The reason OVERSEER has adopted this approach is to allow for the wide range of operational performance within each irrigation system type. The operation of the irrigation system is the main driver of performance not the irrigation system itself. Based on the above, the proposed modelling rules are not sound. When these rules are applied within OVERSEER in many instances it results in 100% irrigation application efficiency. This is an unrealistic expectation – it is beyond best management practice. The irrigation modelling rules therefore need to be refined so they create realistic expectations of irrigators.	
Part B		
Part B		*INZ is in full support of the Waitaki Irrigators Collective submission*