

**IN THE MATTER OF** The Resource Management Act  
1991

**AND**

**IN THE MATTER OF** Proposed Canterbury Land and  
Water Regional Plan

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**STATEMENT OF ELLESMERE IRRIGATION SOCIETY INCORPORATED**

19 March 2013

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## **1. INTRODUCTION**

- 1.1 This statement is provided in support of submissions and further submissions lodged on the Proposed Canterbury Land and Water Regional Plan (hereafter referred to as 'the Plan') Sections 1 to 5, Schedules and Maps by the Ellesmere Irrigation Society Incorporated (hereafter referred to as 'the Society').
- 1.2 The Society will be available to answer questions during its time allocation period at the hearing and provide some supporting information relating to this statement. The statement has been set out in a way that indicates to the Hearing Commissioners what the Society's concerns are in relation to the various parts of the Plan via its submissions and its opinion on the recommendations made in the Section 42A Officer's Report.

## **2. BACKGROUND OF THE SUBMITTER**

- 2.1 The Society is made up of approximately 120 consent holders of water take and use permits located between the Rakaia and Selwyn Rivers and east of State Highway 1 to the east coast. This area is located within the existing Rakaia Selwyn Groundwater Allocation Zone, Selwyn-Waihora Nutrient Allocation Zone and Little Rakaia Nutrient Allocation Zone under the provisions of the Plan. It encompasses the rural areas known as Irwell, Doyleston, Leeston, Lakeside, Sedgemere, Southbridge, Killinchy and Little Rakaia, which are commonly referred to collectively as 'Ellesmere'.
- 2.2 The Society was formed in 2009 in order to provide a collective representation on water related issues, predominantly in respect to irrigation and the protection and maintenance of the water resource, both ground and surface water, within the Ellesmere area of the Canterbury Region. The Society also encapsulates the area of consent holders Environment Canterbury (hereafter referred to as 'ECan') determined to be within the Cluster 2, 4 and 5 Groups as part of the Rakaia Selwyn Groundwater Allocation Zone Resource Consent Review.
- 2.3 Members of the Society are predominantly 'family farmers'. Family farmers are farmers who have owned and managed the same property for several generations and have a natural affinity to the land, its use and its protection. Traditionally these types of farmers have engaged in long-term farming practices that utilise environmentally sustainable farming systems. They perceive farming as a long-term plan to retain their heritage and livelihood so that it can be progressed through future generations. A key characteristic of the family farmer is operating in an efficient and caring manner with strong environmental ethics and stewardship. Family farms are predominantly financed through production from the farm itself and are not subject to many off-farm shareholders or corporate investment. Therefore finance and production is very carefully managed. Inefficient use of fertiliser or water is considered costly to these types of farmers and therefore used sparingly under stringent management and application systems. Historically, the family farmer cares greatly for their farm, its produce, livestock and surrounding environs. They have high level expertise and acquired local knowledge which is often vastly more comprehensive than the small amount of "scientific" data that has been collected over a relatively short time frame. The farm is seen as not only an asset to the owner but also to the community and its immediate physical and social environment; all of which it aims to protect and maintain to its highest quality.

### The Society Committee

2.4 The Society presently consists of nine elected Committee Members:

<b>Mr Simon Osborne</b>	<b>Chairman</b> , also member of the Leeston Drainage Committee and arable farmer at Leeston;
<b>Mr John Sunckell</b>	<b>Vice-Chairperson</b> , also member of the Selwyn Waihora Zone Committee, Chairman of the Leeston Drainage Committee and dairy farmer at Brookside;
<b>Mr David Birkett</b>	<b>Treasurer</b> , also Chairman of the Board of Directors of the Foundation for Arable Research (FAR), Vice Chairman of the Herbage Seed Section of Federated Farmers NZ, Member of the Seed Quality Management Authority Board, and arable farmer at Leeston;
<b>Mrs Carey Barnett</b>	<b>Secretary</b> , previously had professional experience as an Environmental Planner for the Selwyn District Council (4 years – Team Leader Consents), Senior Planner and Principal of Boffa Miskell Limited (9 years), member of the Harts Creek Restoration Committee, part of arable farming partnership at Lakeside;
<b>Mr Geoff Heslop</b>	<b>Committee Member</b> , Vice Chairman of Blackcurrants New Zealand, President of the Ellesmere Agricultural and Pastoral Association, arable and blackcurrant farmer at Brookside;
<b>Mr Craig Croft</b>	<b>Committee Member and Communications</b> , arable farmer at Lakeside and Assistant Principal of Shirley Boys High School;
<b>Mr Stuart McPherson</b>	<b>Committee Member</b> , arable farmer at Sedgemere;
<b>Mr Stuart Stephens</b>	<b>Committee Member</b> , Director of Blackcurrants New Zealand, arable and blackcurrant farmer at Irwell;
<b>Mrs Jo Benny</b>	<b>Committee Member</b> , previously Communications Manager at Merino Inc, previously Media Coordinator at PGG Wrightson Seeds, arable farmer at Southbridge.

Some of the above Society Committee will be present and available at the hearing to provide further information and/or answer questions from the Hearing Commissioners.

### Overriding Concerns

2.5 The Society has a significant interest in the management of the social, economic and physical environment at the local, regional and national level. In this regard it has been an active entity in recent years being involved in many different focus groups, consultation and submitting on the numerous documents that aim to regulate and deal with the issues of fresh water quantity and quality.

- 2.6 The over-riding critical issue for the Society is ensuring that the Plan encapsulates and reflects the intentions of the Canterbury Water Management Strategy (CWMS) and provides a robust, practical and appropriate framework in which to not only protect all facets of the environment – including social, economic and physical, but at the same time actually work in practice. The Society considers that the strategies within the CWMS reflect a sound way forward for the future sustainable management of fresh water for all entities, including the physical, social and economic environment.
- 2.7 One of the key facets of the CWMS is enabling a 90 to 95 percent reliability of irrigation water supply to agricultural users. Without this reliability there would be serious reductions in agricultural production in the Canterbury region. The production in the region contributes substantially to the overall production, and as a consequence the economic viability, of the country as a whole. The Ellesmere area includes a variety of agricultural land uses such as arable (wheat, barley, ryegrass, clover, small seed such as radish, carrot, kale), vegetables for market and dairy. All of these uses require certainty of water supply. Therefore the need to ensure a very high level of reliability is critical across the board. This need is reflected in the CWMS and must also be recognised and provided for in the PLWRP.
- 2.8 What has been evident in the past, and another key concern of the Society, is the large disparity between how farming activities operate on the ground and the application of the rules that regulate any significantly adverse environmental effects. In other words, the implementation of regulations that do not 'marry up' easily with what actually happens in the physical and farming environment. The rules tend to regulate in a way that makes it difficult to operate and implement 'on the ground'. From what is contained within the PLWRP it appears that this will happen again. It is doubtful also that 90 to 95 percent irrigation reliability would be achieved under the rules as they are written now in the PLWRP.

### 3. SUBMISSIONS AND COMMENTS ON OFFICER RECOMMENDATIONS - PROPOSED CANTERBURY REGIONAL POLICY STATEMENT

3.1 The following table shows the submissions the Society made in respect to specific provisions set out in the Proposed Canterbury Land and Water Regional Plan. Stated in blue is the recommendation made by the Officer reporting on behalf of ECan and alongside, also in blue, a response to that recommendation as stated by the Ellesmere Irrigation Society Inc.

Section	Page Number	Paragraph	Support/Oppose	Decision Requested	Reason	Officer Recommendation	EISI Comments on Officer Recommendation
<b>Section 1 – Introduction, Issues &amp; Major Responses</b>							
<b>1.2.1 Competing demands for water</b>	1-3	Ninth	Oppose	Re-word last sentence in paragraph as follows:  “The cumulative effects of abstraction of groundwater can reduce groundwater levels, in turn affecting the reliability of supply in shallower bores and flows in spring fed streams”	In the Ellesmere area the shallow bores are more reliable and very rarely have a problem with water being not adequately available. There is no problem with the reliability of supply to the shallow bores. The Society has presented this information to ECan on several occasions but continues to be ignored. This is actually what happens though. There is however, a cumulative impact on the flow of the streams from all takes in the entire Rakaia Selwyn Groundwater Allocation Zone.	Officer has not mentioned the Society’s submission here.	The Society considers, with respect, that the Officer has a limited understanding of the reliability of shallow bores in the region. The Rakaia Selwyn Groundwater Allocation Zone, is one of the zones that the regional council has considerable information about in regard to the relationship between the groundwater system, water use and flows in streams. As this zone is considered by ECan to be one of the ‘over-allocated’ zones it is therefore a zone which has much attention drawn to it and it probably best illustrates how cumulative effects can cause impacts on groundwater systems. However, in this zone, aquifer testing and local knowledge illustrates that there is little to no issue in the reliability of supply in shallow bores. Among the Society members there are very few shallow bores (less than 35m in depth) that have struggled to maintain an abundance of water supply in the shallow bores. In the Southbridge area there are no known wells that are having reliability problems. Therefore the Society has requested that the reference to “reliability of supply in shallower bores” be removed.
<b>1.2.2 Issues arising from interconnected water and land resources</b>	1-3	Second	Oppose	Delete paragraph or re-word to make it only relate to cumulative connections/effects.	The information provided in this paragraph is too simplified and misleading. In some areas the connection between surface water and groundwater is complex and the level of connection is very slight. The Society recently proved through the consent review process that unless shallow bores are located very close to surface water bodies then their physical connection can only be considered in a cumulative way and not in a way that could be considered ‘directly’ connected. This paragraph flies in the face of some of the detailed work that has been done recently.	Officer recommends the addition of wording relating to localised variations to recognise situations where there is variation in the groundwater system.	The Society considers that the Officer’s additional wording still does not recognise the reality. While there is some connection of the ground and surface water systems, they cannot be generalised in the way that this paragraph now reads in the Section 42A Report. The Society proposes the following wording: (Note: the wording in red/bold/underlined is the wording proposed by the Officer. Wording in blue/bold/underlined is further wording changes proposed by the Society).  “Canterbury’s hydrogeology <u>is characterised by means that surface and groundwater systems which have differing degrees of interconnectivity across the region, consequently giving rise to different levels of surface water is strongly connected to groundwater, both for water quality and quantity. Lowland spring-fed streams and many wetlands are fed from groundwater. The flow and water quality in spring-fed streams directly reflects groundwater levels and groundwater quality, such that high nitrate levels in groundwater mean high nitrate levels in these streams. Braided rivers lose <u>some</u> surface flow to, and gain <u>some</u> surface flow from, groundwater along their reaches. As a result, the abstraction of groundwater <del>can</del> <u>may</u> reduce the flows and levels of water in rivers, streams and wetlands, and the abstraction of surface water <u>may</u> <del>can</del> also reduce groundwater recharge. Managing the seasonal and long-term cumulative effects of groundwater abstraction on surface water flows in lowland streams and inland basins is challenging because the effects from any single abstraction <u>within a groundwater zone</u> are sometimes not fast or significant enough to show any immediate effects on surface flow <u>and localised variation in effects can occur.</u>”</u>
<b>1.2.3 Issues relating to soil conservation, gravel resources and biodiversity</b>	1-4	First paragraph under ‘Conservation of soils’	Oppose	Re-word first sentence in paragraph as follows:  “Cultivating soil and	Remove the term ‘arable’ from this sentence. The term arable relates to the growing of crops and does not relate to pasture growth. All growth of vegetation either for cropping or	Officer supports the Society’s proposed wording changes and	The Society supports the Officer Recommendation R1.0 in relation to this point.

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<b>Conservation of Soils</b>	1-4	heading		modifying vegetation cover on both <del>arable</del> <b>plains</b> land and hill and high country are important activities in providing for the social, cultural and economic well-being of people and communities.”	dairying or other uses has cultivation and modification activities associated with them too.	recommends accepting the proposed changes.	
		Second paragraph	Oppose	Re-word paragraph as follows:  “Maintaining a vegetation cover that is effective at preventing induced erosion is the most cost-effective form of management whether in the hill and high country or on <del>arable</del> <b>the plains</b> land. For example, deep-rooting vegetation binds soils on slopes, and shelter belts reduce the susceptibility of soil to wind erosion on <del>arable</del> <b>the plains</b> ”.	Remove reference to ‘arable’. Paragraph needs to relate to all farming types not just arable.	Officer supports the Society’s proposed wording changes and recommends accepting the proposed changes.	The Society supports the Officer Recommendation R1.0 in relation to this point.
<b>1.2.6 Managing New and Existing Activities</b>	1-6	First paragraph, fourth sentence	Oppose	Re-word sentence as follows:  ‘Where abstractions or discharges are <b>proven to be</b> over allocated, alternative management techniques are needed.	Insert the words ‘proven to be’ because ECan has very little physical and actual data at present to substantiate this claim. Irrigators are only now starting to meter their water use and it will take some time for ECan to use this data to fully understand the nature of allocation in many areas. To date water allocation figures and water quality limits could not possibly be understood, revised or determined without at least a substantial period of recording and evaluating.	Officer recommendation rejects the Society’s proposed amendment.	The Society stands by its reasons for the proposed word changes. One of the key areas of the Plan revolves around allocation limits in zones that are really just a modelled number. Actual metering of water use over several years is the only way to determine to what degree or amount water is under, at, or potentially over allocated. It is therefore inappropriate to impose alternative management techniques on users when it is still unknown in the physical environment if a zone is actually over allocated in practice. The Society still seeks the change to wording as stated in this submission.
<b>1.3 Key Management Responses for Land and Water</b>  <b>1.3.1 Key Partnerships</b>	1-6 to 1-11	All this section	Oppose	Amend entire section to reflect a balanced partnership for all parties. Suggest Ngai Tahu information is separated out into an appendix as it is too detailed for this section.	This chapter now takes on a prolonged description of Ngai Tahu rights and activities and has almost no reference to the many other parties that are involved in partnerships with the various authorities. No reference is made to some very important stakeholders that are central in going forward for this region. There appears to be a major emphasis on what Ngai Tahu wishes and no recognition at all of any other parties. Stakeholders are given ‘lip-service’ at the start of this section and then ignored for the rest of it.	Officer recommendation rejects the Society’s proposed amendment.	Like other submitters the Society has concerns over a lack of emphasis that the Plan has in regard to fostering and maintaining key partnerships with other stakeholders, in particular other resource users. While the Society recognises the need for a key partnership with Ngai Tahu, this should not over-ride or out-weigh partnerships with other key stakeholders. Economic and social wellbeing form a key part of the Resource Management Act and key partnerships with other stakeholders is fundamental to good environmental management and achieving quality environmental outcomes for all parties. As an example, no information is provided about the importance that generations of farmers have contributed to the local economy and social entities, not to mention the constant environmental protection programmes that they have been involved with over decades and centuries. These need to be addressed and provided for in the Plan.

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<b>Section 2 – How the Plan Works &amp; Definitions</b>							
<b>2.4 Regional and Sub-regional Sections</b>	2-2	Second	Oppose	Amend this section so that it explains precisely when a rule in one part of the plan takes precedent over a rule in another part of the plan and make any consequential amendments.	There is a need to avoid confusion in the consideration of which rules apply to a particular activity and eliminating the application of potentially conflicting rules. Writing a plan in this way has the potential for uncertainty to occur, and can end up with the need to require resource consents for certain activities, just because the rules are not clear and the regulatory authority is forced to err on the side of caution and require resource consent applications. Real caution needs to be taken in clearly specifying which rules apply in which instances.	Officer recommendation rejects the Society's proposed amendment.	The Society reiterates the reasons stated here for its concern about how the Sub-regional Plan rules and policies will be applied in conjunction with the PLWRP. In practice having both plans operating together causes confusion and an unnecessary level of regulation. The Society's preference would be for the Sub-regional Plan to contain all the relevant rules and policies for that sub-region and then only have the objectives of the PLWRP being applicable. While this might result in the replication of some rules, at least there would be certainty and the need to only address specific parts of each Plan rather than having to address all parts of each.
<b>2.10 Definitions, Translations and Abbreviations</b>	2-4	Definition of 'Artificial Watercourse'	Oppose	Re-word second sentence of definition as follows:  'It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage <del>canal</del> <b>ditch</b> .'  And make any consequential amendments.	The term 'canal' in relation to 'farm drainage' should be removed and replaced with 'ditch'. The Oxford Dictionary defines a 'canal' as "an artificial waterway allowing the passage of boats inland or conveying water for irrigation". Therefore the term 'canal' insinuates a rather large scale facility inappropriate for the description of a farm drain. 'Ditch' is a better description here. Farm drains would be very unlikely to be able to facilitate boat movement. The Oxford Dictionary defines a 'ditch' as meaning "a narrow channel dug to hold or carry water". This is the exact description of what is known as a farm drain. 'Channel' is also not an appropriate term for a farm drain as it is also considered to be able to carry a boat (see also 'Channel' definition in Oxford Dictionary.)	Officer recommendation proposes amendment to:  <i>'... and farm drainage <del>canal</del> <b>channel</b>'.</i>	The Society agrees with the Officer that there needs to be uniformity in the definitions of an 'artificial watercourse' and 'Drain'. However, the Society still believes the term 'ditch' is the best description to use as it best describes the narrowness of farm drainage systems. Both the Oxford Dictionary definitions of 'canal' and 'channel' allude to wide and/or significantly large vessels in which liquid flows. Farm drains are and will remain 'narrow'. Farmers know these entities as either a 'drain' or 'ditch'. While the word 'ditch' may have a less pleasant sound to it for some people, it is none-the-less what these entities are known as. They are never referred to in title by farmers as either a channel or a canal.
	2-7	Definition of 'Drain'	Oppose	Re-word definition as follows:  "includes any artificial watercourse that has been constructed for the purpose of land drainage of surface or subsurface water and can be a farm drainage <del>channel</del> <b>ditch</b> , an open race or subsurface pipe, tile or mole drain."  And make any consequential amendments.	The term 'channel' in relation to 'farm drainage' should be removed and replaced with 'ditch'. The Oxford Dictionary defines a 'channel' as <i>Noun</i> "a navigable passage in a stretch of water otherwise unsafe for vessels", or <i>Biology</i> 'a tubular passage or duct for liquid'. Therefore the term 'channel' insinuates a facility inappropriate in the description of a farm drain. 'Ditch' is a better description here. Farm drains would be very unlikely to be able to facilitate boat movement and are not realistically a duct. The Oxford Dictionary defines a 'ditch' as meaning "a narrow channel dug to hold or carry water". This is the exact description of what is known as a farm drain. The description of a drain also needs to be consistent in all the definitions which it is not in the current proposed plan wording.	Officer recommendation rejects the Society's proposed amendment.	The Society disagrees with the Officer recommendation for the same reasons stated directly above.
	2-9	Definition of 'Interference effects'	Oppose	Delete definition.	Real tested data used during the Rakaia Selwyn Groundwater consent review and real data used when determining the drawdown effects of	Officer recommendation rejects the	The Officer considers that the definition should not be deleted as it relates to Schedule 12 and is a key tool in assessing effects of new water takes on existing bores. The key problem with Schedule 12 and the

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	2-13	Definition of 'Riparian margin'	Oppose	<p>And make any necessary consequential amendments.</p> <p>Delete point 2 of definition.</p> <p>And make any necessary consequential amendments.</p>	<p>wells adjacent to one another have shown that the estimates provided by ECan overstate this effect in some areas to in excess of 500%. This results in the need to obtain written approvals from parties that will not actually be affected in reality. ECan needs to seriously look at the information it uses in these assessments as recent well data monitoring in the Southbridge area has shown that the assessments done by ECan have vastly over-estimated such effects.</p> <p>An arbitrary measurement of 10m has been attributed to each riparian margin which is inappropriate in most areas. The margins need to be investigated properly for each water body. ECan has been advised this constantly over the last 20 years and yet has still failed to do the right 'homework' again. Riparian margins need to be looked at per water body as each one along its respective edge has different characteristics. To just have an arbitrary width will result in excessive expenditure by those affected by inappropriate rules.</p>	<p>Society's proposed amendment.</p> <p>Officer recommends changing the 10m riparian margin to 5m.</p>	<p>definition is that they are used by ECan to dramatically over estimate the level of interference. The Society shows later in this evidence the problem with the application of the definition and the Schedule.</p> <p>The Society recognises that the Officer has recommended a reduced margin limit (5m instead of 10m) for land that is not Hill and High Country or High Soil Erosion Risk as shown on the planning maps. The definition of a riparian margin has an impact on the rules that relate to it. Because of the wide variety of characteristics of waterways it is not appropriate to install any arbitrary measure of distance for margins. The Focus Group meetings held in relation to the development of the Selwyn Waihora Sub-regional Plan have discussed at length the difficulties around arbitrary limits for riparian margins. At present many stakeholders, including farmers, work well with the regional and district councils in undertaking riparian planting and protection. These works would actually be hindered by imposing arbitrary distances that serve no practical purpose. Also, it became obvious at the Focus Group meetings that arbitrary distances were difficult to enforce in practice.</p>
	2-13	Definition of 'Water users group'	Oppose	<p>Re-word definition as follows:</p> <p>Means a group of users with existing authorisations to take water, voluntarily grouped together to collectively manage <b><i>and/or address issues relating to</i></b> the water resource allocated to them, <del>primarily during times of restriction.</del></p> <p>And make any necessary consequential amendments.</p>	<p>Water users groups deal with a number of matters relating to water issues and not just in relation to managing water allocation. They also undertake a much broader area of activity than just managing water in times of restriction. To date no groundwater users in the Rakaia Selwyn Groundwater zone have any water management responsibilities in a regulatory context outside of managing water permitted by each member's own personal water take consent.</p>	<p>Officer recommendation rejects the Society's proposed amendment.</p>	<p>The Society does not accept the reasoning provided by the Officer as to why no amendment is required. The PLWRP has no rules, objectives or policies that include reference to water users groups. Therefore there is no reason why the definition should not truly replicate exactly what a water users group is.</p> <p>The Ellesmere Irrigation Society Inc. is a well-established water users group and our primary tasks do not relate to management of the water resource directly and do not focus on restriction matters primarily. One of the long held problems between what is contained and regulated in Canterbury's regional plan relating to water and its implementation has been its inability to deal practically with what happens in practice on the land. The rules have tended to be written and applied in a way that just simply does not work in practice. The Officer recommendation here is an example of how reality should be ignored in favour of creating something that does not exist. Water users groups are a group of people that have grouped together in order to share ideas, address issues and work together on matters relating to water resources in their chosen area.</p>
<b>Section 3 - Objectives</b>							
<b>Objectives</b>	3-1	Objective 3.12	Oppose	<p>Re-word objective as follows:</p> <p>'Groundwater continues to provide a sustainable</p>	<p>The Society considers the word 'high' as potentially unachievable and subjective. The description of the quality of water here needs to be realistic and of a standard that is calculable rather than an unattainable wish beyond what</p>	<p>Officer recommendation rejects the Society's proposed</p>	<p>There is no indication in the Officer Report as to their thoughts on this amendment, only a revised wording of the objective. The re-wording proposed by the Officer in the report is preferable. However, the Society still has concerns over the use of the term 'high quality' as there is no indication of what 'high quality' means. It is very subjective and</p>



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	3-1	Objective 3.14	Oppose	<p>source of <del>high</del><b>adequate standard</b> quality water for flows and ecosystem health in surface water bodies and for abstraction.</p> <p>And make any necessary consequential amendments.</p> <p>Re-word objective as follows:</p> <p><b>High Adequate</b> quality fresh water is available to meet actual and reasonably foreseeable needs for community drinking.'</p> <p>And make any necessary consequential amendments.</p>	<p>would actually be achievable and feasible.</p> <p>As above, the word used to describe the water quality that is trying to be achieved needs to be realistic and not subjective. The description of the quality of water here needs to be realistic and of a standard that is calculable rather than an unattainable wish beyond what would actually be achievable and feasible.</p>	<p>amendment.</p> <p>Officer recommendation rejects the Society's proposed amendment.</p>	<p>indicates a standard that may potentially never be reached even in the best situation. The following wording is now suggested based on the re-worded objective in the Officer Report:</p> <p><i>"3.6 Groundwater resources remain a sustainable source of <del>high</del> quality water which is available for abstraction while supporting base flows or levels in surface water bodies, springs and wetlands and avoiding salt-water intrusion."</i></p> <p>Given that the word 'sustainable' is already provided in the objective and the re-wording which now includes 'while supporting base flows or levels' the result should be good quality water so the reference to 'high quality' becomes redundant and makes the objective far less subjective.</p> <p>There is no indication in the Officer Report as to their thoughts on this amendment, only a revised wording of the objective. It is assumed that the new Objective 3.8, as proposed in the report, is the objective that now deals with fresh water supplies for human consumption.</p>
	3-2	Objective 3.21	Support	<p>Accept the wording of this objective.</p>	<p>The objective supports land use change and development which is critical to the socio-economic wellbeing of the Canterbury region.</p>	<p>Officer recommends accepting submission.</p>	<p>The Society supports the retention of the new Objective 3.5 as shown in the Officer Report which has the same wording as the original Objective 3.21.</p>
	3-2	Objective 3.22	Oppose	<p>Delete objective.</p>	<p>This objective does not add anything to the outcomes sought by the Plan. The wording of it is clumsy and open to various interpretations. It should be relating to the meeting of desired outcomes for water quality and quantity by using best practice and regulatory techniques within the appropriate limits provided for in the Plan. This is when these limits are fully understood and set at levels that become acceptable throughout the planning process. Deleting the objective would not result in any loss of community outcomes being achieved. Community outcomes will not be achieved just through management limits – they are just one mechanism.</p>	<p>Officer recommendation rejects the Society's submission.</p>	<p>The Society retains its reason for opposing the wording of this Objective. If the Objective is proposed to be retained then the Society supports the amendments suggested by HWPL, The Fertiliser Association, Ravensdown, Horticulture NZ, Irrigation NZ, CPWL and the Dunsandel Groundwater Users Group who proposed the following alternative wording:</p> <p><i>"Community outcomes for water quality and quantity are met through <u>a range of regulatory and non-regulatory management tools managing limits</u>".</i></p> <p>The above wording is far more relevant and what actually happens in practice and should be reflected as such in the Objective.</p>
	3-2	Objective 3.23	Support	<p>Accept the wording of this objective.</p>	<p>Best practice and better is what all parties should be doing in order to maintain and improve water quantity and quality.</p>	<p>Officer recommends accepting submission.</p>	<p>The Society agrees with the Officer's recommended re-wording of this Objective now numbered 3.16 in the Officer report.</p>

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<b>Section 4 - Policies</b>							
<b>Strategic Policies</b>	4-1	Policy 4.5	Oppose	Delete policy until Sections 6-15 are completed.	You cannot have policies stated in a Plan where they relate to parts of the Plan that have not been written or notified yet.	Officer recommendation rejects the Society's submission.	There is no indication here in the Officer Report as to their thoughts on this amendment, only a revised wording of the objective. No consideration has been given to existing water take consents in this policy, or how it may directly conflict with policies that will be developed in the sub-regional sections of the Plan. The Society seeks that this policy either be deleted or re-worded to recognise existing consent water uses in high naturalness water bodies and also how this policy may not apply when new provisions are developed in the sub-regional sections.
	4-1	Policy 4.6	Oppose	Delete policy until Sections 6-15 are completed.	You cannot have policies stated in a Plan where they relate to parts of the Plan that have not been written or notified yet.  Wording is also too 'loose' in that it says 'will generally'. The wording needs to be more certain than this i.e. if the activity would result in more over allocation then it should effectively be a prohibited activity. Circumstances where consents may be granted need to be recognised in the wording of the policy.	Officer recommendation amends the wording of the policy.	The Officer recommends adding the words " <i>New consents replacing expiring consents may be granted, but will likely be subject to additional restrictions</i> ". While this wording provides some indication around how existing consents might be treated it is inappropriate to assume that it means imposing further restrictions, particularly given that the sub-regional sections are still being consulted on and the wording of rules for these sections may not require imposing restrictions. Again, the Society reiterates how it would be inappropriate to have this policy when these sections are yet to be written. Also, as sub-regional sections have not been written in some cases yet, this actually makes the policy redundant as it refers to Sections that may not exist. The relevant policy is best placed in the sub-regional section.
	4-2	Table 1a	Oppose	Delete Table 1a	Information contained in Table 1a is far too generalised and does not serve any valuable purpose. Quality of waterways should be dealt with on a case-by-case basis as the characteristics of each waterway are extremely different and cannot be generalised into a table like this.	Officer recommendation rejects the Society's submission.	There is no indication here in the Officer Report as to their thoughts on the specifics of the information provided in Tables 1a, 1b and 1c. While these tables do provide some information it is their all-encompassing nature and generalisation of information that makes them inappropriate to apply.  The nature of the various surface water bodies and the differences in the aquifers across the region are considerable and to simplify their natures and desired outcomes in these tables is inappropriate. This information is better dealt with in the specific sub-regional sections.
	4-3	Table 1b	Oppose	Delete Table 1b	Information contained in Table 1b is far too generalised and does not serve any valuable purpose. Quality of lakes should be dealt with on a case-by-case basis as the characteristics of each one will be extremely different and cannot be generalised into a table like this.	Officer recommendation rejects the Society's submission.	As per above comments.
	4-4	Table 1c	Oppose	Delete Table 1c	Information contained in Table 1c is far too generalised and does not serve any valuable purpose. Aquifer information should be dealt with on a case-by-case basis as the characteristics of each one will be extremely different and cannot be generalised into a table like this, in particular the values stated.	Officer recommendation rejects the Society's submission.	As per above comments.
<b>Abstraction of Water</b>	4-10	Policy 4.46	Oppose	Delete policy and make any necessary consequential amendments.	The Society recognises the need to allow drinking water supplies. However, the development of such supplies being allowed in areas where there are significant restrictions on	Officer recommendation rejects the Society's	The development of water supplies for drinking water in areas that are over allocated or at full allocation should not result in already consented takes being restricted or unable to be used. Considerably high costs are associated with irrigation uses, in some cases in excess of a \$1M per

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					other users may result in major adverse effects on those existing consented users. For example, a new community water supply being allowed in an area where minimum flow conditions have been applied to groundwater take consents could quite easily result in consented uses no longer being able to be used. Water takes serving more than one household should be required to meet the same rules and not be permitted. There is little point regulating other uses if you are blatantly going to allow what could be more detrimental practices to occur. This could well happen where there is now pressure to develop land further into rural areas because of earthquake associated re-development.	submission.	property for infrastructure alone. To allow, without realistic consideration, further use of water for domestic purposes would be irresponsible. Irrigation use for the production of food for local, national and international consumption is of considerable importance and if water use is further restricted through development in over-allocated or full allocation areas then urban development should be encouraged elsewhere.  The policy should be re-worded to recognise protection of existing consented uses.
<b>Abstraction of Water</b>	4-11	Policy 4.47	Oppose	Delete policy and make any necessary consequential amendments.	This policy should be deleted in so far as it affects the extended Little Rakaia Zone. Note that this area should extend its boundary out further to along the north western edge of Harts Creek until it reaches Lake Ellesmere. The eastern edge of this sub-zone should also extend further out and include the Ellesmere Golf Club land and other areas between that land and the Rakaia River. The wording of this policy at present without Sections 6-15 being completed illustrates the problem of having this part of the Plan notified before the rest of it is completed.	Officer recommendation rejects the Society's submission.	The extended Little Rakaia Zone is not considered to be over allocated. The large majority of the farms in this area have been irrigated with water take consents for the last 20 years, with irrigation commencing here in the 1950's. While efficiencies have increased, the total amount of water used has likely stayed the same or reduced and there has never been a problem with water supply from either the shallow wells or the more recent deeper ones. The irrigation season here is well managed and generally shorter than other parts of the plains due to its good water holding capacity soils and the abundance of water over much of the year. It is therefore reasonable to consider that this area will have significantly different policies relating to it under the sub-regional sections of the Plan. As a consequence this policy should not relate to this area.
	4-11	Policy 4.58	Oppose	Amend policy to recognise what is actually meant by the terminology 'direct cumulative interference effect' and to determine a more relevant distance radius that is right for the respective groundwater area.	The 2km radius distance is excessive in the lower plains area. Tests have proven that in the Ellesmere area that the drawdown effects on nearby wells is not noticeable within very short distances i.e. less than 500m. This policy needs to set relevant data and distances to each specific water sub-zone area and should not be located in this section of the Plan. The drawdown needs to be relevant to the specific area as well.	Officer recommendation rejects the Society's submission.	The Officer has not recognised the practical and actual physical information that is provided on ECan's resource consent files which show in the Ellesmere area that interference effects do not extend out to 2km. In this area it over estimates the level of effect and results in consent applicants having to gain written approvals from numerous well owners who will not be affected. Data on this matter will be provided later in this submission, but it indicates that in the Ellesmere area these effects would be more rightly only relevant to within a 500m radius with that distance still providing a protective buffer. This reduced radius needs to be provided for in this policy.
	4-12	Policy 4.60	Oppose	Delete policy in relation to stream depleting groundwater takes in the Ellesmere area. Part (c) of policy should also not just relate to 'cease' but also reduce take when there are times of low flow. Part (g) should also be deleted in relation to groundwater takes. And make any necessary consequential	Aquifer tests in the Ellesmere area have shown that only a minor number of wells have any noticeable effect on streams. It is estimated that unless wells are located within very close proximity i.e. less than 300m from a stream then they will have no significant effects on stream flows. Until such time as ECan does appropriate and actual aquifer testing to ensure true aquifer values are inserted in models used to assess stream depletion, then no rules or policies should be applied. This is a major area of work that has still not been undertaken. It is not appropriate to apply rules to users where there	Officer recommendation rejects the Society's submission but uses it to make an amendment.	The Society retains its position in relation to this policy and provides further detail about this submission later in this statement.

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	4-12	Policy 4.61	Oppose	amendments.  Amend and/or delete policy so that it is clear that the policy only relates to surface water abstractors. And make any necessary consequential amendments.	is as yet no proof that these effects actually exist to the extent that applies now.  It is unclear from the policy whether it relates specifically to only surface water abstractors or all abstractors in a catchment. It should not relate to groundwater abstractors.	Officer recommendation rejects the Society's submission.	The Officer may be unaware that the regional council has previously considered making groundwater abstractions that have connections to surface water bodies to be considered within surface water regimes. However, this has been opposed significantly by groundwater users given that there is such limited actual tested data to prove such connections. Hence the request here to determine that the policy only relates to those who take water directly out of a surface water body and not via a groundwater bore. The following amendment is requested:  <i>"4.61 To prevent the flow falling below a minimum flow for the catchment, due to <u>surface water</u> abstraction, partial restriction regimes for surface water shall:...."</i>
	4-12	Policy 4.62	Oppose	Delete part (e) and make any necessary consequential amendments.	This part of the policy should be deleted as it is an inappropriate way to manage the water resource. Ceasing use for some users when levels drop would result in failure of farming systems. The resource should be allocated properly in the first instance to ensure conditions of this type on consents could well result in the consent being unable to be used which is contrary to the Resource Management Act.	Officer recommendation rejects the Society's submission.	The Society retains its position here based on the reasons stated and in addition that Sections 6 – 15 of the Plan may well result in policies that conflict with this policy.
<b>Efficient Use of Water</b>	4-13	Policy 4.66	Oppose	Delete policy and make any necessary consequential amendments.	The amount of water allocated per consent holder should be uniform regardless of land use type.	Officer recommendation rejects the Society's submission.	The policy suggests a continuation of the regime of allocating water based on a reasonable need for the intended use. This is precisely what has caused the over allocation of water in the Rakaia Selwyn Groundwater Zone. Excessive amounts of water have to be allocated to highly intensive land uses on land that is unsuitable environmentally for the desired use. The results have caused the depletion of flows in lowland streams and increased risk of nitrate and phosphorus levels in the water system. It is has allowed the over intensification of poor quality land at the expense of all over users.
	4-13	Policy 4.67	Oppose	Amend policy part (b); irrigation season should be September through to end of April and make any necessary consequential amendments.	Some irrigators start irrigating in September on lighter soils.	Officer recommendation accepts the Society's submission and irrigation season is amended to be from 1 September to 30 April.	The Society agrees with Officer recommendation.
	4-13	Policy 4.68	Oppose	Delete policy	The intention of the policy is unclear. The policy is also redundant in practice. Once a consent expires then a new consent can be issued with appropriate conditions. There is no need for this policy.	Officer recommendation amends the policy.	The Society considers that the wording proposed by the Officer is still confusing. Also, it gives the impression that if the water is not 'used' for twelve months then the water will be removed from the consent. This is a major concern for farmers who have to deal with different water requirements each year. One year may require all the water allocated, while other years it will be much less. Secondly, the Society is unaware of any water take consents being issued without an abstraction period. If this policy was to be applied to a review of a consent, it would be extremely contentious and potentially highly damaging to the operation

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	4-13	Policies 4.69 and 4.70	Oppose	Clarify policies in explanation of rules and methods and make any necessary consequential amendments.	Efficiency should not be measured in the age of the irrigating mechanism. In some areas it is not possible physically to use pivot or linear irrigators due to topography, the heaviness of the soil or the capital investment required. Therefore any determination of efficiency should relate to the amount of water used rather than solely the mechanism distributing the water. Older mechanisms with the right application and maintenance, in conjunction with low water use on high water holding capacity soils is one of the main characteristics of efficiency. It is not all about modern technology.	Officer recommendation rejects the Society's submission.	of a farming enterprise.  The Society's comments above in relation to Policy 4.66 are also relevant here. As an alternative wording the policy could be amended as follows:  <i>"4.69 Water used for irrigation is <b>should be</b> applied using good-practice that achieves an irrigation application efficiency of not less than 80%".</i>
<b>Transfer of Water Permits</b>	4-13	Policy 4.73	Oppose	The policy needs to specify the amount of water that would be surrendered.  And make any necessary consequential amendments.	In some areas there should be no need to surrender a proportion of the allocated amount during a transfer as it may in fact result in positive effects on the environment. The problem in the Rakaia Selwyn Groundwater Zone is that too much water has been allocated in the upper plains area and this has caused the problems in the lowlands. Reducing allocations in the lowland area will achieve nothing. Better understanding of the zones and their catchments is the main issue that this Plan needs to deal with and then come up with rules that relate specifically to those issues, namely getting catchment locations right and then working from there. With the introduction of the Central Plains Water Enhancement Scheme there will be no need to 'claw' back allocation in this zone, which therefore makes transfer rules and policies such as this redundant. The Plan should contain maps that better deal with transfers in each relevant catchment. These should be included in Sections 6-15 of the Plan.	Officer recommendation rejects the Society's submission.	The Society considers that transfers should only occur within the same water catchment and not to other areas that are some considerable distance apart. The Society still considers the reasons stated in the submission to be valid.
<b>Consent Duration, Lapse Periods and Giving Effect to Water Permits</b>	4-13	Policy 4.75	Oppose	Amend wording of policy as follows:  'Resource consents to abstract water shall be given effect to within <del>two</del> <b>five</b> years unless a longer lapse period.....' And make any necessary consequential amendments.	It is not possible to undertake a development of a new abstraction within two years. Five years is the appropriate time frame as this allows time for planning and flexibility which can only be achieved on the ground once a consent has been approved.	Officer recommendation rejects the Society's submission.	Members of the Society have all undertaken new irrigation development at some point of their farming lives. None have been achieved in a two year time frame. This is not a result of poor management but simply because it just takes some considerable time to undertake irrigation development. Therefore the reasoning from the Officer lacks a practical knowledge of what is actually achievable. Why set a timeframe that is not achievable? Five years is not only achievable but realistic and not known by farmers in the Society's area to result in water-banking. The period needs to be amended to five years.
	4-13	Policy 4.76	Oppose	Amend policy so that duration is for 35 years and not 5, and make any necessary consequential	A five year period for the duration of a consent is inappropriate. No-one can undertake a major investment in agriculture based on a consent that is only 5 years in length. Most commonly		See comments above.

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				amendments.	consents contain conditions that allow the review of the consent if it is considered that the activity is causing significant adverse environmental effects. These conditions are sufficient to allow dealing with a consented activity that is having effects beyond those anticipated in the application. A 35 year period would be more appropriate. Importantly though ECan needs to understand the exact nature of the issue around non-point discharges of nutrients. There is not enough information at present to be implementing rules that will unnecessarily restrict farming activities.		
<b>Section 5 – Region-wide Rules</b>							
<b>General Rules</b>	5-2	Rules 5.1 and 5.2	Conditional Opposition	Make entire Section 6-15 part of Plan have its own stand-alone rules that require no need to refer back to Section 5 Rules. And make any necessary consequential amendments.	The wording of these rules is not clear and it needs to be explicitly clear in Sections 6-15 which rules are and are not applicable.		The Society's opposition and reasoning on these rules still stands.
	5-3	Rule 5.3	Oppose	Delete rule and make any necessary consequential amendments.	The wording of this rule is not a rule. It is information that should be provided in the explanation and reasons for rules in a Plan and methods of implementation stated in the Plan.		
	5-3	Rule 5.4	Oppose	Delete words at beginning of rule:  'For the avoidance of doubt, ...	These words are unnecessary at the start of the rule.		
<b>Bores</b>	5-19	Rule 5.78	Oppose	Delete point 4 of this rule and make any necessary consequential amendments.	Point 4 of this rule does not have any relevance and it is not understood what this point means. This part of the rule should be excluded.	Officer recommendation rejects the Society's submission.	The Society does not agree with the Officer recommendation of retaining Point 4. It refers to rules that are yet to be developed and reads more like a policy than a rule. The Society recommends deleting Part 4 of the rule and having the specific rule for each sub-regional section of the plan being the only rule that relates to interference effects. The wording at present relates to 'minimum water levels' for a zone. Does this mean for groundwater or surface water or which aquifers and based on what information? There are major uncertainties around the use of this wording in practice and is much better applied in the sub-regional sections.
<b>Small and Community Water Takes</b>	5-20	Rule 5.84	Oppose	Point 3 should be worded as follows:  'Where the take or diversion is from a water body with a minimum flow that is set in Sections 6-15, the take or diversion of water for other than an	Developments or uses of any type should be subject to the same need to cease use of the water body regardless of what that use is for.	Officer makes no reference to the Society's submission.	The Officer has not assessed this submission, therefore the Society has no understanding of what the Officer considers in relation to this submission. To allow more surface water takes that do not require consents on water bodies that reach minimum flow levels will just give rise to further lower flows and significantly hamper existing uses that rely on surface water for their existing operations. The Society maintains its position in relation to this submission.

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				individual's reasonable domestic and stock water use ceases when the flow is at or below the minimum flow for that water body, as published on the CRC website; and make any necessary consequential amendments.			
<b>Take and Use Surface Water</b>	5-23	Rule 5.96	Oppose	Delete Point 2 of this rule and replace with a specified water flow level at which surface water takes cease.  Delete Point 3 of this rule.	This rule is unclear and it is more practical just to work with a minimum flow level at which a consent holder simply stops taking water when that limit is reached.  It may take some time before Sections 6-15 are completed and therefore this rule becomes flawed in that this Point 3 becomes redundant or difficult to apply.	Officer recommendation rejects the Society's submission	The Officer considers that Points 2 and 3 of this rule are required as a holding pattern while the sub-regional sections of the Plan are being devised. The Society is concerned that after all this time there are still rivers/streams etc. that do not have minimum flow limits on them. ECan simply just needs to do the fundamental homework on such streams in consultation with the water users to set a limit based on scientific and local knowledge.
<b>Take and Use Groundwater</b>	5-24	Rule 5.101	Oppose	Delete entire rule and/or in particular delete points 2 and 4 of this rule. Delete matters of discretion – in particular matters 5 and 6. And make any necessary consequential amendments.	The Society does not agree to this rule in its current state as there are no requirements as yet set out in Section 6. In addition the regional authority needs to undertake aquifer testing to determine what are actual stream depleting takes and not rely on models and inappropriate values inserted in these models to determine levels of stream depletion. The regional authority already has proof from aquifer testing undertaken in the Southbridge area that proves only very few wells in this area are likely to be having any significant stream depleting characteristics. The authority needs to address this immediately and set about doing the appropriate aquifer testing instead of continuing to make the same ill-informed errors it has made for many years on this topic. Bore interference effects also need to be readdressed and assessed using actual aquifer testing results not relying totally on desk top assessments using inappropriate values. Major work needs to be done in this area before such rules are inserted in the plan in order to avoid the mistakes that are contained in the existing operative regional plan.	Officer recommendation rejects the Society's submission	The Officer has failed to consider the background of this submission and its reasoning, none of which are mentioned in the report. This is an exceptionally important matter in relation to water allocation, take and use. In addition it was at the forefront of the consent review undertaken in the Rakaia Selwyn Groundwater Allocation Zone. The Society expands upon this submission later in this statement in relation to Schedule 9.
	5-24	Rule 5.103	Oppose	Amend rule so that the status is a discretionary activity if any of conditions 1, 2 and 4 are not met.  And make any necessary	The main area of concern in an over-allocated groundwater allocation zone is that there is not more water allocated. Stream depletion is a far lesser concern given that there is now proof that there is little effect of individual wells on stream flows. Therefore failure to meet conditions 1, 2 and 4 should only result in a consent being	Officer recommendation rejects the Society's submission	Officer has not taken into account the recent scientific evidence that has been provided and agreed with by ECan. The Society disagrees with the Officer recommendation and considers that at least failure to meet condition 2 of the rule only requires a consent for a discretionary activity.

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	5-25	Rule 5.104	Oppose	<p>consequential amendments.</p> <p>Amend rule to read as follows:</p> <p>'The taking and use of groundwater that does not meet one or more of conditions 2 and 3 in rule 5.101 is a prohibited activity.'</p> <p>And make any necessary consequential amendments.</p>	<p>required for a discretionary activity.</p> <p>As per the reasons above, only the potential to cause further over-allocation should be considered a prohibited activity.</p>	Officer recommendation rejects the Society's submission	See reasons above.
<b>Transfer of Water Permits</b>	5.25	Rule 5.107	Oppose	Delete rule as it reads presently, in particular, but not limited to, conditions 4 and 5 of the rule.	The conditions of this rule are too generalised. For example if this rule was applied in the Rakaia Selwyn Allocation Zone, then it would result in further adverse effects on lowland stream levels. This is because any transfer of water from the down plains to upper plains will further reduce flows in the lowland streams and potentially increase nutrient loss in the zone. The catchment boundaries shown in the planning maps for the Rakaia Selwyn Groundwater Allocation zone also need amending as they are not correct. In this zone there is unlikely to be any surface water transfer from down plains to up plains other than in relation to the Rakaia River surface takes.	Officer recommendation rejects the Society's submission	The Officer report does not provide any reasoning around the environmental impacts associated with water transfers beyond reducing allocation levels. Shifting the location of water allocation can make substantial changes to the environment both positively and negatively. Take for example the part of the rule under point 4 (c)(viii) which states... <i>"the stream depletion effect is no greater in the transferred location than in the original location"</i> . At present ECan determines stream depletion only in relation to those individual wells located immediately adjacent to streams. There is no taking into account the impact of cumulative takes in an entire zone on stream depletion. So in the instance of say a number of water takes being transferred to upper plains from the lower plains then this would give rise to increased stream depletion effects in reality but these would not be dealt with in this transfer process and would result in increased effects on the streams.
<b>Earthworks and Vegetation Clearance in Riparian Areas</b>	5-33	Rules 5.148 to and 5.151	Oppose	Delete rules and make any necessary consequential amendments.	There are large areas of land located near to Lake Ellesmere that are proposed to be zoned LH2 and LH1 and therefore restricted markedly by these rules. A considerable area of this land is farmed to a high quality level and has never experienced soil erosion. To require a resource consent for cultivation in these areas is significantly inappropriate. A more appropriate distance would need to be negotiated on a case-by-case basis. Cultivation machinery on farms these days has such precision that you can easily work within close proximity to water bodies without causing any disturbance to vegetation or soils.	Officer recommends minor changes to Rules 5.148 and 5.149.	<p>The Society still has concerns over the wording and intent of Rules 5.148 and 5.149. The main concern is in relation to Rule 5.148(b) which requires a 5m setback on major areas of the region's land for earthworks and cultivation and a number of conditions to be met. Conditions 1(a) and 1(b) specify that if work is done within this setback it shall not exceed 500m<sup>2</sup> or 10% of the area, whichever is the lesser. From a practical perspective the Society does not consider that this could be adequately enforced and nor is it required in respect to cultivation. Cultivation is done carefully on farms and farmers would not cultivate within close proximity of beds of rivers etc. because it is just not practical from an operational machinery perspective i.e. you would not take a vehicle this close to riverbed for cultivation and you would not grow crop or pasture there due to problems in retaining good growth. Therefore the Society considers that Rules 5.148 and 5.149 should have reference to 'cultivation' removed from them where the rules relate to land that is not within the High Soil Erosion Risk area or is defined as Hill and High Country.</p> <p>The Society supports the Officer recommendation and the removal of High Soil Erosion Risk map layers applying to land on the Plains and in the vicinity of Lake Ellesmere.</p>
						For rules 5.150 and 5.151 the Officer recommendation	



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						supports the deletion of the LH1 and LH2 zones and the inclusion of a new map showing the "High Soil Erosion Risk" areas.	
<b>Sub-Regional Section</b>							
<b>Sub-regional Sections</b>	vii	Paragraphs 2 and 3	Oppose	Amend wording so that there is a clear distinction in the plan as to which rules apply in which circumstances. And make any necessary consequential amendments.	The Plan needs to be written in a way that makes it quite clear which rules apply to an activity. There should not be rules that contradict one another which then result in unnecessary resource consent applications.		Society stands by its request and reasoning as stated here.
<b>Section 11 – Selwyn - Waihora</b>	11-1	Second paragraph bullet points	Amend	Add additional outcome: 95 to 100% reliability of irrigation water supply.	It is imperative to the economy and social well-being of the local, regional and national economies that the Canterbury region is supplied with highly reliable irrigation water.		Society stands by its request and reasoning as stated here.
<b>Schedules</b>							
<b>Schedule 9 – Assessment of Stream Depletion Effect</b>	16-15	Entire Schedule	Oppose	Delete Schedule as it relates to the Ellesmere Irrigation Society Inc. area shown in attached map.  And make any necessary consequential amendments.	The Society opposes the application of this Schedule to the area in which the Society operates. Aquifer testing done in a considerable part of this area has shown that wells here do not have any significant adverse effect on streams. The recent review of groundwater consents in this area has left less than 30 consent holders with minimum flow conditions on groundwater take consents that give them the opportunity to undertake aquifer testing to prove these wells are not having any significant effects. Aquifer testing on one property proved that the information being used to determine stream depletion effects by ECan was significantly over estimating the level of effect.  Table 9.1 should not be applied in the Ellesmere area because irrigation has been developed here for many decades and there are very few properties that are not already irrigated. Those that are using shallow bores either are not deemed by ECan to be having an effect on streams greater than the 5 L/s threshold, or they were deemed by ECan to be having a greater effect already and have minimum flow conditions on their consents. To require further restrictions on them would not result in any	Officer recommendation rejects the Society's submission.	The Officer has not provided any assessment of the information provided in this submission. More information is provided on this subject later in this statement.

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					<p>change in effects on the streams and would effectively shut down irrigation in this area. Flows in the lowland streams were good until water was over-allocated in the upper plains area where large quantities of water is used on high drainage land for intensive farming uses of which they are not naturally suited.</p> <p>The information provided in Table 9.1 is not explained and will be open to interpretation as there is no explanation or reasons for rules contained in this Plan or methods of implementation.</p> <p>ECan needs to do aquifer testing in relation to stream depletion effects before imposing such rules.</p>		
<b>Schedule 10 – Reasonable Use Test</b>	16-16	Entire Schedule	Oppose	Irrigation volumes should be equal among all users regardless of use types. Schedule should be re-written to recognise this.	Annual allocation limits based on current use restricts the future potential of land. There should be an allocated amount per area of land. What is happening currently is that large quantities of allocation is being attributed to land based on high intensity uses where the land is naturally unsuitable for the use. This results in high water application on soils that are free draining causing higher nutrient loss and higher water use. The system proposed in the Plan creates significant inequalities, particularly in relation to zones that are already over-allocated.	Officer recommendation rejects the Society's submission.	The Society does not agree with the Officer's assessment here. The simple matter that is missed in the Schedule is based around farming types. There is no listing of what types of land use are allowed what amounts of water. However, Table 10.1 lists the Soil PAW class and the total seasonal demand that is required on that soil. Essentially on poorer quality land and on high drainage soils more water will be allocated to the specific land use. On the Canterbury Upper Plains this has resulted in the high intensity dairy industry locating on low quality soils that quickly drain, thus causing major adverse environmental effects down plains through lowering the pressure of the water table in the deeper aquifers, causing the spring fed streams to have lower flows and higher nutrient levels in the water system. If ECan continues to use this type of system for water allocation then it is unlikely to ever alleviate the problems of nutrient levels and stream flows. This allocation system is exactly what has caused the problem in the Rakaia Selwyn Groundwater Allocation Zone.
<b>Schedule 11 – Aquifer Testing</b>	16-19	Entire Schedule	Oppose	Delete Schedule and re-write to insert more appropriate testing using information from actual testing	Aquifer testing parameters need to have specific guidelines set down to eliminate any problems when consent holders undertake testing as per such schedules and then have them discounted by ECan based on not meeting some requirement that sits outside the Plan.	Officer recommendation rejects the Society's submission.	<p>The Society's concerns relate largely to the assessment of data once it is derived from an aquifer test. The Council does have aquifer testing guidelines and these should be made a standard which is imposed through the plan and referenced in the Schedule. Wording in the Schedule should be made more certain so as not to leave any discrepancies, for example after point 7 under the heading "Aquifer testing minimum requirements – Constant rate, the following wording appears:</p> <p><i>"It is strongly recommended that prior to testing that a step drawdown test is conducted....."</i></p> <p>The Schedule needs to state clearly if the step test is required or not. This should not be left to a judgement call made by, say, a customer services person or a reporting officer. The instructions and requirements need to be absolutely clear as aquifer tests are expensive to undertake and there should be no areas of question either before or after the test is done.</p>
<b>Schedule 12 – Well Interference Effects</b>	16-20	Entire Schedule	Oppose	Delete Schedule and re-write to insert more	The methods proposed for determining the level of well interference effects are inappropriate in	Officer recommendation	See information below regarding this topic. Society stands by its original submission and its reasoning.

Section	Page Number	Paragraph	Support/Oppose	Decision Requested	Reason	Officer Recommendation	EISI Comments on Officer Recommendation
				appropriate analysis using information from actual testing.	the Ellesmere area. For example requiring assessment of wells within a 2km radius is excessive when tests have proven that there are no effects on wells at this distance or a much reduced distance. Actual test data needs to be used to determine a more accurate way of considering well interference effects. ECan needs to undertake this testing.	rejects the Society's submission.	
<b>Schedule 13 – Requirements for implementation of water allocation regimes</b>	16-21	Entire Schedule	Oppose	Delete Schedule. Schedule should be re-written and any necessary consequential amendments.	Stream depletion effects from any groundwater abstraction should not be included in allocation regimes. Surface water allocation and groundwater allocations should be kept entirely separate.	Officer recommendation rejects the Society's submission.	Stream depletion effect should only be taken into account for surface water allocations where aquifer tests have been undertaken showing more than a 5 l/s depletion effect is occurring. Otherwise any depletion effects are being based on modelled information which is entirely incorrect. Amend Officer's recommended wording as follows:  <i>“Surface water allocation regimes</i> 1. <i>The amount of water allocated within an allocation block is the sum of:</i> <i>(a) The maximum rate of abstraction of each surface water take and</i> <i>(b) The stream depletion effect <u>in excess of 5 l/s as determined from aquifer testing</u> of each groundwater take that is calculated in accordance with Schedule 9;”</i>

#### **4. FURTHER SUPPORTING INFORMATION IN RELATION TO SUBMISSIONS ON RULES**

- 4.1 The following provides further supporting information regarding the submissions and comments provided in the table above.

#### **SUBMISSIONS ON SCHEDULES**

##### **Schedule 9 – Assessment of Stream Depletion Effect**

- 4.2 This Schedule is intended to instruct the determination of the degree of impact that a groundwater abstraction has on streams. Several consent holders that are members of the Society had their existing groundwater take consents reviewed by ECan recently (2007 to 2010). Twenty six consents resulted in having some or all of their bores restricted by stream depletion conditions based on desktop assessments undertaken by ECan staff. These assessments were undertaken using modelled information that included data which was not taken from relevant or recent aquifer testing in the areas in which the bores existed. ECan did not do any aquifer testing of its own to determine whether the information being put into the various assessment models was appropriate. Because of this the results did not realistically reflect what was actually happening physically in the various locations where the subject bores were. What resulted was the assessment of stream depletion effects that over-estimated the degree of effect by some considerable proportion. Consequently a large number of consents were proposed to have very restrictive stream depletion conditions attached to them, for example that a bore cease being used when the flow in the nearest stream fell below its minimum flow level. In some cases this meant before the irrigation season commenced in the area the farmer was already unable to use their irrigation system. This was because the stream had already fallen below its minimum flow level before the irrigation season had started here. Quite obviously the problem with the stream flow was being caused by the cumulative effects of the large water users upstream (upper plains) on the lighter soils with the highly intensive land uses; their actual irrigation season starting approximately six weeks prior to the season in the Ellesmere area (down plains).
- 4.3 The consent holders appealed the decision of ECan on the reviewed consents. During the negotiations throughout the appeal one consent holder provided information from actual aquifer tests on their property relating to all of their fourteen wells. All these wells were considered to be stream depleting to either a direct, high or moderate degree. However, when actual aquifer test results were provided by the consent holder it was found that 11 of the wells that were considered 'stream depleting' by ECan were not having an effect beyond the threshold for which any conditions of irrigation restriction were required. In simple terms this meant that the modelled desktop data used by ECan was vastly different to what was actually happening in reality. The table below illustrates the difference between what was modelled using estimated and untested information as used by ECan and actual information when derived from 'real' tested aquifer information:

<b>Stream Depletion/Spring Depression Analyses relating to Spring M37/0425</b>		
	<b>ECan's Estimated Value of Stream Depletion/Spring Depression</b>	<b>Actual Value of Stream Depletion/Spring Depression based on Aquifer Testing using Bowden Environmental Assessment</b>
	Assumed T= 10 000 m <sup>2</sup> /d Storativity = 0.0001 No Leakage Analysis: Theis	Assumed T= 15 000 m <sup>2</sup> /d Storativity = 0.0005 Leakage = 700m Analysis: Hantush, and Hunt as these models were more appropriate to use for the assessment.
<b>Well M37/0293, distance to spring 88.2m</b>		
Q7 pumping rate (l/s)	63	60.4
Q150 pumping rate (l/s)	32	32
Q7 add (m)	0.529	0.122 – 0.16
Q150 add (m)	0.336	0.065 – 0.12
<b>Well M37/0468, distance to spring 95m</b>		
Q7 pumping rate (l/s)	50	50
Q150 pumping rate (l/s)	25	25
Q7 add (m)	0.415	0.049 – 0.13
Q150 add (m)	0.26	0.098 – 0.10
<b>Well M37/0326, distance to spring 298.5m</b>		
Q7 pumping rate (l/s)	41.5	39.8
Q150 pumping rate (l/s)	21	21
Q7 add (m)	0.279	0.039 – 0.06
Q150 add (m)	0.185	0.020 – 0.06
<b>Well M37/0327, distance to spring 451.8m</b>		
Q7 pumping rate (l/s)	41.5	39.8
Q150 pumping rate (l/s)	21	21
Q7 add (m)	0.255	0.026 – 0.05
Q150 add (m)	0.173	0.014 – 0.05
<b>Well M37/0477, distance to spring 496m</b>		
Q7 pumping rate (l/s)	50	50
Q150 pumping rate (l/s)	25	25
Q7 add (m)	0.301	0.030 – 0.05
Q150 add (m)	0.203	0.015 – 0.02
<b>Well M37/0467, distance to spring 898m</b>		
Q7 pumping rate (l/s)	71	71
Q150 pumping rate (l/s)	37	37
Q7 add (m)	0.37	0.019 – 0.04
Q150 add (m)	0.271	0.010 – 0.02
<b>Well M37/0466, distance to spring 1348m</b>		
Q7 pumping rate (l/s)	50	50
Q150 pumping rate (l/s)	25	25
Q7 add (m)	0.233	0.003 – 0.02
Q150 add (m)	0.169	0.006 – 0.04
<b>Well M37/0476, distance to spring 1490m</b>		
Q7 pumping rate (l/s)	50	50
Q150 pumping rate (l/s)	25	25
Q7 add (m)	0.226	0.004 – 0.02
Q150 add (m)	0.165	0.002 – 0.03
<b>Well M37/0475, distance to spring 1710m</b>		
Q7 pumping rate (l/s)	50	50
Q150 pumping rate (l/s)	25	25
Q7 add (m)	0.216	0.002 – 0.01
Q7 add (m)	0.161	0.003 – 0.03

- 4.4 It is clear from the above example that the values produced by ECan grossly over estimate stream depletion effects. The discrepancies shown are:
- The use of the Theis distance and drawdown curves as used by ECan was not appropriate and totally over-estimated the head depression (drawdown effect on springs);
  - The data obtained from aquifer testing and then analysed showed that these wells were well under the 0.1m cut-off threshold which was chosen by ECan as indicating 'significant' or more than minor effect on stream flows;
  - The use of desktop modelling without 'real' and accurate data caused massive over estimation of stream depletion effects.<sup>1</sup>

This illustrates the problems associated with Schedule 9 in that the way in which these effects are assessed is subject to the insertion of values within a model that are not explained or even addressed here. Throughout the review and appeal process ECan staff constantly changed their minds and methods of stream depletion effects assessment which gave no certainty to anyone and resulted in a complete loss of confidence in work done by staff and the accuracy of their processing of data, and ultimately the need to impose severe restriction conditions.

- 4.5 It is the Society's view that until real tested knowledge is available about the groundwater systems in the various catchments, it is entirely inappropriate to contemplate the imposition of conditions of consent that relate to stream depletion effects. To impose conditions on consents that effectively make the consent unusable is contrary to the provisions of the Resource Management Act and comes at a significant financial and economic cost to the consent holder. This is particularly the case when such conditions are imposed on existing consents.
- 4.6 If a bore's use is modelled using incorrect data, it can result in a farmer having to stop irrigating all together when the stream that the bore is considered to have a hydraulic connection to drops below the minimum flow level. As an example, in the case of farmer's in the Lakeside area that were close to Harts Creek, this meant that they were prevented from irrigating when the Creek went below its 1000 l/s minimum flow limit. In average to dry years this creek may start flowing below the 1000 l/s before irrigation has commenced in this area i.e. November. Therefore any impact on the lowering of the stream flow has already been caused by either natural physical events or the over allocation of water in the upper plains. To penalise the farmers adjacent to the stream when the adverse effect has occurred as a result of over allocation by the consent authority is inappropriately shifting the blame. There is little evidence in the Ellesmere area that shows that any reduction in flows of the streams is caused by the adjacent farmers, particularly given that aquifer testing has proven that there are very few wells in the area that are likely to be actually be having any significant effect on these stream flows. The example above is derived from one of the largest land holdings in the Ellesmere area and it is shown to be only having a minor impact over only three of its wells.
- 4.7 The Schedule also makes reference to bore fields being dealt with across a 'property'. This method penalises those with a larger property and potentially skews the calculations of the stream depletion effect. The effect should relate to each well regardless of how the land is actually owned or contained within a consent. The method of ownership is irrelevant to the material effect generated by any bore use. The wording and interpretation of bore field

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<sup>1</sup> 'Constant Discharge Aquifer Test M37/0326, Mr & Mrs LG & VM McMillan June 2010', Bowden Environmental

assessment is confusing and proved to be highly contentious and open to interpretation in the review process. Not to mention, the application of several different assessment models depending on which one experts chose to apply. Therefore there should be no reference to bore fields or its assessment in the Schedule and the Society also seeks its removal.

- 4.8 What became obvious throughout the process was that there were so many different ways to interpret the assessment of stream depletion effects that it left you wondering how it was possible to impose such restrictive conditions when there was little agreement between those assessing the data. Where such differences in assessment apply it would seem inappropriate to apply conditions of consent until such time that more accurate knowledge was available in relation to these types of effects and the nature of the specific catchments. We understand that still no further aquifer testing has been undertaken by ECan since this review and yet the Plan includes the same provisions that it did previously.
- 4.9 In relation to Table 9.1 of the Schedule, the Society submits that it would be inappropriate to implement such allocation combining surface and groundwater based on the dubious nature of the stream depletion effect assessments. In addition, we understand that the Zone Committee does not support this method in the Selwyn Waihora zone. This is because this would again burden those close to the streams that are more than likely not the parties causing any significant reduced flows in them.
- 4.10 The Society submits that this Schedule should be deleted until such time as there is more scientific agreement over how to determine actual stream depletion effects and when ECan has undertaken adequate aquifer testing.

#### **Schedule 12 – Well Interference Effects**

- 4.11 The Society shares similar concerns about Schedule 12 as to those relating to Schedule 9. This is because the level of drawdown impact is usually based on desk top analysis using information and modelled values that are not appropriate; again over estimating the level of effect. Where these effects are over estimated they result in not only an exaggeration of the drawdown impact, but also they trigger the need to seek written approvals from a large number of ‘potentially’ affected parties when a new water take or change of conditions to an existing consent is being applied for.
- 4.12 The distance of a 2km influence zone is also considered overstated in the Ellesmere area. Under this distance and in-conjunction with the over-estimation of the effects of the drawdown, applicants are being asked to seek written approvals from potentially adversely affected parties that are not only considerable in number but also who are not likely to experience any adverse effect at all from the proposed activity.
- 4.13 The table below illustrates actual drawdown information and what is produced using real tested data. It is clear from this table that there is a considerable over estimation of the impact using ECan desktop modelled data that suggests that there are impacts over 0.1m at a distance up to 2km from a well. The table shows that the 0.1m drawdown impact was not reached at distances beyond 450m.

Drawdown Calculated from Pump Tests					
Aquifer Test Bores	Average Pumping Rate (L/s)	Drawdown at 500m (m)	Drawdown at 500m (m)	Drawdown at 500m (m)	Distance at which drawdown = 0.1m (0.1m being the threshold as specified in point 2. of Schedule 12)
M37/0242	80	0.08	0.03	0.01	365
M37/0076	140	0.05	0.02	0.004	230
M37/0277	140	0.05	0.02	0.002	260
M37/0342	55	0.035	0.015	0.003	95
M37/0031	55	0.030	0.009	0.001	125
M37/0616	55	0.096	0.065	0.037	450

4.13 Given the above the Society opposes the implementation of Schedule 12 until such time as ECan has available the appropriate aquifer testing data that can be applied when doing drawdown assessments.

Ellesmere Irrigation Society Incorporated

19 March 2013

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<sup>2</sup> McMillan Drilling Services Data, 2013