

From: [Kingsbury, Peter](#)
To: [Mailroom Mailbox](#)
Subject: Submission on PC7 LWRP
Date: Friday, 13 September 2019 2:08:23 PM
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[Submission on LWRP PC7 as lodged with ECan.pdf](#)

Hi

Please find attached the CCC's submission on PC7 LWRP.

Regards
Peter Kingsbury

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13 September 2019

To: Canterbury Regional Council

Submitter: Christchurch City Council

This is a submission on **Environment Canterbury's Proposed Plan Change 7 to the Land & Water Regional Plan and Proposed Plan Change 2 to the Waimakariri River Regional Plan**

I cannot gain an advantage in trade competition through this submission.
The specific provisions of the proposal that my submission relates to are:

As attached.

My submission is:

As attached.

I seek the following decisions from Environment Canterbury:

As attached.

I wish to be heard in support of my submission.

Signature of submitter:



Mayor Lianne Dalziel

Date: 13.9.19

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Attachment A: Council's submission on Environment Canterbury's PC7 LWRP and PC2 WRRP

1. Introduction

The Christchurch aquifer system is a significant drinking water resource for Christchurch. Maintaining this high quality resource is a high priority for the Christchurch City Council (the Council) and is the main focus of this submission. However, the Council is also concerned that freshwater outcomes are maintained for social, cultural, and environmental/ecological values as well and supports the introduction of additional protections for indigenous freshwater species. The Council has, therefore, considerable interest in Plan Change 7 to the Canterbury Land & Water Regional Plan (LWRP) and Plan Change 2 to the Waimakariri River Regional Plan (WRRP).

2. Nutrient management and freshwater outcomes

The management of nitrate nitrogen levels in groundwater is the key issue for the Council in Plan Change 7 (PC7).

The Council is seeking to maintain low concentrations of nitrate nitrogen in the deep aquifer bores supplying Christchurch, and in shallow groundwater that feeds spring-fed streams. Emerging studies about the chronic effects of low concentrations of nitrate nitrogen in drinking water is cause for concern and does not appear to have been adequately considered by Environment Canterbury in setting targets in PC7. There is also creditable research and information to demonstrate that nitrate levels above 0.44 mg/L can begin to have impacts on aquatic ecosystems and receiving coastal environments. Managing water quality within the catchment is part of a multi-barrier approach to managing drinking water supplies and surface water quality. The primary "treatment" barrier is the raw water source itself, particularly where a water supplier is relying on low risk secure bore water. Some of the deep groundwater is over 175 years old and once it is in the aquifer system is too late to do anything about it other than treat it at abstraction.

Maintaining a supply of high quality groundwater for drinking water supplies without treatment for nitrates is of paramount importance to Christchurch and the Council. At this time, given the importance of the high quality of groundwater to Christchurch, and our understanding of the plan change documents and technical reports, a nitrate threshold of less than 1 mg/L is the Council's preferred option (this being a maximum not an average value). To achieve this, appropriate changes to PC7 are sought in this submission. While some specific changes to provisions and tables are requested in this submission, the Council acknowledges it is a complex plan change. The Council also acknowledges that a range of options that will support the overall objective of maintaining a high quality groundwater supply for Christchurch need to be considered and may result in alternative relief to the actual relief sought being acceptable.

This submission therefore seeks further, alternative or consequential relief to the changes sought in this submission so as to achieve similar relief.

The Council has concern for the low nitrate reduction targets and the length of time until PC7 requires the targets to be met. Environment Canterbury has selected the nitrate management targets based on 50th percentile model predictions and not the more conservative 95th percentile predictions. The confidence intervals presented in the modelling estimates represent uncertainty within the particular model structure, which could change if a different model was used. Also, there is the potential that considerably faster transmission of nitrate could occur into deep aquifers in Christchurch. The Council seeks that the reduction targets are increased (such as those provided in Table 8-9) and are brought forward such that nitrate nitrogen concentrations predicted to enter the Christchurch aquifer system are abated over shorter timeframes and nutrient loads are attenuated more quickly. In addition, it is submitted that the targets and timeframes contained in the tables in Section 8 are not adequately connected to the plan change policy and rule provisions such that the consequences of them not being met are not clear. The Council seeks

amendments to these policies and rules, particularly the policies and rules under the heading nutrient management in Sections 8.4 and 8.5.

The Waimakariri River is the primary recharge source to the Christchurch aquifer system. The Council seeks to protect the quality of river water which enters the aquifer system as recharge, as part of a multi-barrier approach to maintaining a high quality water supply and spring-fed stream quality. This submission seeks additional protection for the Waimakariri River through adding a nitrate nitrogen water quality target for the Waimakariri River of 0.1 mg/L (annual median) to Table 8-7. It also seeks that this target of 0.1 mg/L (annual median) form the basis of a new nitrate priority area (buffer area) to be added to the planning maps and Table 8-9. This proposed new nitrate priority area, located along the north bank of the river, will protect and maintain river water quality at the threshold requested above. The submission seeks that this new nitrate priority area will capture all those extents of the Waimakariri Zone covered by PC7 from where groundwater migrates into the river. It is accepted that further work is required to define the zone, which could be done using the model created by Environment Canterbury, and set appropriate reduction targets using a precautionary approach.

Overall, the Council considers that PC7, in its notified form, while better than maintaining the status quo in respect to nutrient management, will not achieve the objectives of the Land & Water Regional Plan, particularly Objectives 3.8 and 3.8A, 3.11 and 3.14, and may not give effect to the higher planning documents including the Canterbury Regional Policy Statement and the National Policy Statement for Freshwater Management. This is because the limits and targets in PC7 are not sufficiently conservative and reductions are over too long a period such that the need for treatment of water from the Christchurch aquifers becomes more likely.

3. LWRP PART B Orari-Temuka-Opihi-Pareora Sub Region

The Council has no specific comments to make on Part B of the plan change but seeks any consequential amendments to provisions in this section where it is required to give better effect to the Council's submission for the purpose of consistency in plan provisions.

4. WRRP - Proposed Plan Change 2

The Council supports the inclusion of the Waimakariri Sub Region within the jurisdiction of the Land & Water Regional Plan.

5. Section 32

In the time available it has been difficult to review all the Section 32 analysis and the supporting technical documents. However, the Council notes that the economic and social impact analysis is not robust and does not look sufficiently at the alternatives or justify the options chosen in PC7. For example, neither the Harris report nor the s32 report make any mention of health costs. This is because the authors of those reports seem to assume that the nitrate nitrogen levels for drinking water under proposed PC7 will not rise to levels which require treatment, or impose any health costs, or be of concern to the public. The costs of removing nitrate from the water supply needs to be assessed, and an assessment needs to be provided on an alternative scenario in which nitrate nitrogen levels are kept considerably lower. That scenario may be justified on the basis of lower health costs or avoiding drinking water treatment costs, better environmental outcomes and public demand for the Council to adopt a more precautionary approach.

6. Other Issues

The Council notes that the effects of climate change do not appear to feature in the current Land & Water Regional Plan and that the proposed PC7 does not appear to have taken climate change into account. It is considered appropriate and necessary that Environment Canterbury review PC7 in line with projected climate change effects, these including lower river levels, higher sea levels and increased groundwater levels, and

make appropriate changes to the objectives, policies and rules.

The Council further notes its disappointment that no changes to Section 9 of the Land & Water Regional Plan were made in PC7 despite strongly recommending during Schedule 1 consultation that policies and rules are included in PC7 to take into account the inter-zone nitrate issue in the Christchurch-West Melton sub-regional chapter. Given the inter-zone nitrate issue, the Council remains very concerned about this omission and consider PC7 is not as comprehensive as it should be with respect to nutrient management. The Section 32 report indicates that another plan change process will be initiated in 2023 to address inter-zone nitrate issues in the Christchurch-West Melton sub-regional chapter which may result in review of some of the provisions in PC7. This further illustrates that PC7, in respect to nutrient management for the Christchurch aquifer system, is incomplete and the Council will be required to be involved in this process again in the near future.

The provision(s) of Proposed Plan Change 7 to the Canterbury LWRP Omnibus (Part A)			Christchurch City Council Submission		
Page number	Section of plan	Specific clause	Oppose or support (in part or in full)	Reasons	Relief sought
Section 2 Definitions					
11	Defence against water		Support	Definition broadens the definition to include activities other than those previously included under the definition, but which can have the same impacts.	Retain as notified.
11	Indigenous freshwater species habitat		Support in part	This definition is supported but further areas may need to be included.	Include areas where community composition has relatively high proportion of indigenous 'at risk' species e.g. longfin eels, inanga.
11	Highest groundwater level		Support	<p>The Council supports the addition of the term 'Highest groundwater level' and its definition and the subsequent deletion of the term 'Seasonal High Water Table'.</p> <p>This change:</p> <ul style="list-style-type: none"> Is supported by evidence presented to the Christchurch District Plan Review rural hearing which concluded that 'seasonal high water table level' was less appropriate. Rightly affords a greater degree of protection to groundwater recognising 	Retain as notified.

				<p>that maximum groundwater levels have historically occurred outside of the 'seasonal period' of July to August.</p> <ul style="list-style-type: none"> Provides consistency with the term used in the Christchurch District Plan quarrying provisions. 	
11	Managed aquifer recharge		Support	The Council supports the addition of a definition for managed aquifer recharge (MAR).	Support definition as notified.
11	Section 2 - Definitions		Oppose	<p>A definition of "non-consumptive" is not provided in the LWRP. A definition would assist in guiding resource consent decisions about which takes, or part thereof, are subject to allocation limits. Takes which transfer water within the hydrological cycle such as from groundwater to surface water or vice versa can have benefits to the environment e.g. Managed Aquifer Recharge, Targeted Stream Augmentation. There are many examples of hydrological water transfers which provide much needed flow in waterbodies across Canterbury.</p>	<p>Add a new definition for "non-consumptive" use as follows (or similar intent):</p> <p><u>Non-consumptive use means the taking or use of water that results in a neutral water balance within the wider hydrological system and/or aquifer.</u></p>
11/12	Section 2 - Definitions		Oppose	<p>There is no definition of "targeted stream augmentation" for the LWRP as a whole.</p> <p>Targeted stream augmentation can provide much needed flow to water bodies. The allocation of freshwater that is hydrologically neutral or non-consumptive should be considered based on the environmental benefits that can be realised from the use of</p>	Add a new definition for "targeted stream augmentation" as per the definition in Section 8.

				water for maintaining and/or enhancing flows in water bodies.	
Section 4 Region-wide Policies					
15	Table 1a - Freshwater Outcomes for Canterbury Rivers		Oppose in part	<p>The Council request changes to the table for better water quality outcomes. If the Quantitative Macroinvertebrate Community Index (QMCI) is less than 4 it is considered poor indicating 'probable severe pollution'.</p> <p>For E. coli levels for urban waterways and Banks Peninsula the level of 1200 puts the 95th percentile value in the 'D' category of the National Policy Statement for Freshwater Management.</p>	<p>i. Amend the target QMCI for hill-fed lower waterways and spring-fed plains waterways to 5 (good - doubtful quality or possible mild pollution);</p> <p>ii. For E. coli levels for urban waterways and Banks Peninsula, the 95th percentile levels are reduced from 1000 rather than 1200.</p>
17	4.31 Livestock exclusion from Water Bodies	Excluding stock from indigenous freshwater species habitat	Support		Retain as notified.
18	4.61A Abstraction of Water	Preserve indigenous biological diversity within freshwater bodies ... by requiring assessment of effects	Support		Retain as notified.
19	4.99 - 4.100 Managed aquifer recharge		Oppose in part	Amend this policy similar to 11.4.22 or 13.4.18 to region wide policies enabling both targeted stream augmentation (TSA) and MAR, and make provision for non-consumptive use of water for augmentation of water bodies.	Amend the policy to include provision for both TSA and MAR and make provision for takes which are non-consumptive.

				Takes that are non-consumptive provide environmental benefits.	
19	4.101 Habitat of Indigenous freshwater species	Avoid loss or damage of habitat associated with sediment discharges, vegetation clearance, excavation and deposition...	Support		Retain as notified.
20	4.102 Habitat of Indigenous freshwater species	Structures enable safe passage of indigenous fish...	Support in part	Legal requirement to not impede fish passage and support clause as it aligns with fish passage guidelines that were recently released. Minor correction required to wording.	Amend 4.102 b. as follows: b. The modification, reconstruction or removed removal of existing in-stream structures.
20	4.103 Submission of water quality data	Submit water quality data to CRC	Support in part	A repository of water quality data is supported. However, it is noted that this provision is not a policy, and would be better located in the rules/ methods section or reworded if retained in the policies section.	Reword as a policy; alternatively relocate to the rules section.
Section 5 Region-wide Rules					
21-	5.9 – 5.180	New matter for discretion concerning effects on wāhi tapu or wāhi taonga and Ngāi Tahu values.	Support	These provisions are consistent with the policies and objectives of this Plan and are also consistent with the Christchurch District Plan.	Retain as notified.
32	5.71 Stock exclusion	Use and disturbance of bed or banks by farmed animals is	Support	This is an important and necessary provision for maintaining and enhancing water quality. However, there may be other areas not	Retain the rule as notified.

		prohibited in specified areas		identified where it is inappropriate to allow stock.	
40-43	5.136 - 5.141 Structures	The installation, or removal of pipes, ducts, cables or wires, including the associated drilling, tunnelling, or disturbance in or under the bed of a lake or river	Support	Any drilling, tunnelling or disturbance that is not for installing or removing pipes, ducts, cables or wires is a full discretionary activity under this proposed amendment and the Council supports this clarification of the limits of the permitted rule.	Retain as notified.
49-50	5.175 - 5.178 Earthworks over aquifers	Use of land to deposit material onto land which is excavated >5m	Support	This provision is amended by the plan change consistent with the addition of a new definition of highest groundwater level.	Retain as notified.
51-53	5.191 – 5.193 Managed aquifer recharge		Support in part	<p>Rule provision for managed aquifer recharge is supported, but the wording is too restrictive. It only allows for the use of surface water for managed aquifer recharge, not any other type of water (e.g. groundwater from a different aquifer).</p> <p>Provision also needs to be made to include targeted steam augmentation.</p>	<p>i. Amend the rule consistent with the definition of MAR to provide for other freshwater to be used.</p> <p>Amend Rules 5.191 to 5.193 to provide for targeted stream augmentation in a similar manner as proposed by PC7 to Rules 8.5.18, 8.5.19 and 8.5.20.</p>

The provision(s) of Proposed Plan Change 7 to the Canterbury LWRP Waimakariri (Part C)			Christchurch City Council Submission		
Page number	Section of plan (include section title & number)	Specific clause (if appropriate)	Oppose or support (in part or in full)	Reasons	Relief sought
Section 8 – Waimakariri Sub-regional Policies					
61	Section 8.1A - Definitions	Targeted Stream Augmentation	Oppose in part	<p>The definition of Targeted Stream Augmentation (TSA) should clarify and enable the non-consumptive taking of groundwater.</p> <p>This definition should also be located in Section 2 because TSA activities are not limited to only sub-areas and occur across the region. There are several streams in Christchurch that rely on TSA water for maintaining and enhancing flow.</p>	<p>i. Amend definition of Targeted Stream Augmentation to enable Targeted Stream Augmentation to be considered non-consumptive in terms of groundwater allocation limits.</p> <p>ii. Relocate the definition to section 2 of the LWRP.</p>
65	8.4.19 Targeted Stream Augmentation	Targeted Stream Augmentation	Support in part	<p>The Nitrate Options Report and SW Allocation Report identifies MAR and TSA as part of the solutions package for restoring flow and water quality. Policy 8.4.19 a. restricts taking groundwater for TSA to the allocation limits set in Tables 8-1, 8-2, 8-3. TSA from groundwater should be considered a non-consumptive take, or there should be provision made in the groundwater allocation tables for TSA.</p>	<p>Provide for TSA as a non-consumptive take or add provision for TSA to the groundwater allocation tables.</p>

65	8.4.20 Targeted Stream Augmentation	Ecological benefits	Support	The Council supports TSA for ecological benefits.	Retain as notified.
66	8.4.22 Efficient use of water	Efficient use of water	Support	The Council considers that those matters in the policy are appropriate.	Retain as notified.
66	Policy 8.4.25 Nutrient management	Achieving nitrate-nitrogen limits	Support in part	Support the intent for reductions in nitrate concentrations in groundwater, except noting that Table 8-9 is sought to be altered by other parts of this submission.	Retain the policy generally as notified.
66	Policy 8.4.26 Nutrient management	Waimakariri sub-region only	Support in part	The Council supports the intent of this policy to reduce nitrate nitrogen loss in the Waimakariri sub-region and manage the Nitrate Priority Area through the reductions required by Table 8-9, but the Council is requesting amendments to Table 8-9.	Retain the policy generally as notified provided that the changes sought to Table 8-9 (set out later in this submission) are made. Note that alternative relief with a similar outcome may be acceptable.
	Policy 8.4.27 Nutrient Management		Oppose	Policy 8.4.27 allows for approval of a consent application through granting an extension of time to meet the target dates for nitrogen reductions in Table 8-9. This consent pathway is available provided “regard” is given to matters a-e. The Council is concerned about how these matters and the extension of time will be implemented in determining whether to grant consent, and how such consents will be enforced and monitored once consent is granted (see clause d).	Amend Policy 8.4.27 to provide more restricted circumstances and clearer direction on where and why consent will be granted where the nitrogen loss reductions in Table 8-9 cannot be met within the Nitrate Policy Area. Delete “progress to be made towards” from (e).

				<p>In addition “matter” e. requires progress to be made to achieving the nitrate-nitrogen limits and targets in Tables 8-5 (‘Water Quality Limits and Targets for Waimakariri Rivers’), 8-6 (‘Water Quality Limits and Targets for Waimakariri Lakes’), 8-7 (‘Waimakariri Nitrate-nitrogen Limits for Drinking Water Supplies from Groundwater’) and 8-8 (‘Waimakariri Water Quality Limits and Targets for Groundwater’). The use of the words “progress to be made” is very permissive.</p> <p>Any allowance for proposed activities that will not meet the nitrogen reduction target dates should only be allowed for where there are clear sets of requirements in the Plan. As currently written this policy is vague, appears to allow for little improvement and provides no measurable means by which to demonstrate how ‘progress is being made’.</p> <p>As currently drafted this policy seriously undermines the intent of PC7.</p>	
66, 67, 69	Policies 8.25, 8.4.26, 8.27, and Tables 8-5, 8-6, 8-7, 8-8 and 8-9 Nutrient management		Oppose	<p>In this suite of policies and related tables on nutrient management there is no indication about the frequency and method used to determine whether the limits/targets are being met.</p> <p>There are statements at the bottom of the tables that indicate that the targets in table 8-5 and 8.8 are to be implemented by 2080,</p>	<p>i. Specify the method(s) by which nitrate levels will be monitored and the frequency with which monitoring will be undertaken in order to determine progress towards meeting limits/targets in Tables 8-5 to 8-8.</p>

				<p>which is considered by the Council as being too long a time frame.</p> <p>It is also considered that on an individual basis per resource consent the Tables 8-5 to 8-8 will be difficult to implement.</p> <p>There is also no link in the policies to Tables 8-5, 8-6, 8-7, and 8-8 except for clause 8.4.27 (e) which states: <i>“e. Progress made towards achieving nitrate-nitrogen limits and targets in Tables 8-5, 8-6, 8-7 and 8-8”</i> and our comments with respect to Policy 8.4.27 above apply.</p> <p>Overall, there appears to be a disconnect between the tables with targets and the rules and policies meaning it is difficult to understand under the proposed regime what the consequences of not reaching targets set in the tables will be.</p>	<p>ii. Specify/clarify how the targets in Table 8-5, 8-6, 8-7 and 8-8 will apply to a resource consent application on an individual basis.</p> <p>iii. Provide greater policy support for the targets identified in Tables 8-5, 8-6, 8-7, and 8-8, (similar to the last part of 8.4.28A) including a requirement to minimise the loss or discharge of contaminants to achieve the outcomes sought in the tables.</p> <p>iv. See also changes sought to Tables 8-5 to 8-9 below.</p>
69	8.4.35 Current information, monitoring and review		Oppose in part	<p>This policy or a separate policy 8.4.35A should reference the intention to address the nutrient management in Christchurch - West Melton as per page 3 of the section 32 Report.</p>	<p>Amend this policy or provide a new policy 8.4.35A to clarify the scope and timing of the plan change to Section 9 Christchurch - West Melton.</p>

Page number	Section of plan (include section title & number)	Specific clause (if appropriate)	Oppose or support (in part or in full)	Reasons	Relief sought
93	Table 8-5	Water Quality Limits and Targets for Waimakariri Rivers	Oppose	<p>No limit or target is included for the Waimakariri River.</p> <p>In addition, the nitrate-nitrogen limits proposed in this table for the northern Waimakariri tributaries are too high to protect human or ecosystem health. Refer to the discussion below on Table 8-7 in respect to recent studies indicating that levels as low as 0.87mg/L have been found to pose an increased risk of colorectal cancer and the findings of the panel on the Water Conservation Order for the Te Waikoropupū Springs. Advice to the Council from its ecologists in terms of the available literature indicate that levels as low as 0.44mg/L can have impacts on aquatic ecosystems.</p>	<ul style="list-style-type: none"> i. Amend Table 8-5 to include a limit for the Waimakariri River at both the Gorge and SH1 Bridge of Nitrate 0.1 ppm. ii. Reduce the limits for the northern Waimakariri tributaries in line with up to date research on effects of nitrate nitrogen on human health and aquatic ecosystems.
94	Table 8-7	Waimakariri nitrate-nitrogen limits for drinking water supplies from groundwater	Oppose	<p>There is no limit in Table 8-7 for the Christchurch City Council deep aquifer bores. A limit should be added to Table 8-7 of less than 1 mg/L nitrate-nitrogen.</p> <p>In addition, the nitrate-nitrogen limits proposed in this table are too high to protect human or ecosystem health. Nitrate nitrogen levels as low as 0.87 mg/L in human drinking water have been found to pose an increased risk of colorectal cancer.</p>	<ul style="list-style-type: none"> i. Amend Table 8-7 to include the the Council deep aquifer bores with a limit of 1 mg/L Nitrate-Nitrogen. Add a table footnote as follows: ³ <i>The limit for Christchurch City Council Deep Aquifer bores is the median value for all samples collected from all actively used bores or as determined by Christchurch City Council.</i>

				<p>Nitrate nitrogen levels in groundwater at between 0.4 and 1.1 mg/L had been recommended as the trigger level during the hearings on the Water Conservation Order for the Te Waikoropupū Springs in order to protect stygofauna.</p> <p>The Council is aware of more studies emerging that suggest links between nitrate ingestion by humans and serious health effects such as atherosclerosis and liver disease.</p> <p>While the Council supports the intent for reductions in nitrate concentrations in groundwater as a result of this plan change, it does not go far enough to ensure that nitrate levels in the Council drinking water aquifer do not raise dramatically from where they currently are.</p>	<ul style="list-style-type: none"> ii. Reduce the limit for individual Waimakariri District Council community supply wells from 5.65 mg/L (maximum) to less than 1 mg/L for consistency with Christchurch and account for recent research on effects of nitrate nitrogen on human health and ecosystems. iii. Reduce the limit for Private water supply wells from 5.65 mg/L (median) to less than 1 mg/L for consistency with Christchurch and account for recent research on effects of nitrate nitrogen on human health and ecosystems. iv. Recommend that Environment Canterbury investigate further the links between increased health risks from nitrate nitrogen levels in groundwater, including colorectal cancer and revise the limits and targets accordingly.
95	Table 8-8	Waimakariri water quality limits and targets for groundwater	Oppose	<p>This table does not include a limit for Christchurch's deep aquifers. Reduction targets should meet a lesser nitrate threshold of less than 1 ppm for deep groundwater in Christchurch.</p> <p>As for Tables 8-5 and 8-7 the nitrate-nitrogen limits proposed in this table for the Northern Waimakariri Tributaries are too high to</p>	<ul style="list-style-type: none"> i. Amend Table 8-8 to add a groundwater allocation zone for deep groundwater in Christchurch with a nitrate threshold of less than 1ppm. ii. Reduce the limits for the Northern Waimakariri Tributaries in line with up to date research on effects of nitrate nitrogen on human health and ecosystems.

				<p>protect human or ecosystem health for the reasons already given above.</p> <p>The Council is concerned that levels proposed in Table 8-8 are even higher than what the Council had opposed in the draft Waimakariri Zone Implementation Programme Addendum (ZIPA).</p>	
95	Table 8-9 Nitrate Priority Area staged reductions in nitrogen loss		Oppose in part	<p>The timeframes proposed for nitrate reductions are far too long, and Christchurch aquifers will have increasing nitrate levels, with associated negative health effects, as a result. The reporting provided to the zone committee only advised on the economic impacts to farmers, not to Christchurch and its drinking water supply. The cost to Christchurch of having to treat to remove nitrate from its water supply would be in the 100's of \$millions, plus the unknown but significant cost of impaired health of the public.</p> <p>The cost of an alternative supply of potable water also needs to be investigated and considered.</p> <p>The Council is also concerned about the division of the Nitrate Priority Area into five sub-areas. Groundwater modelling by its nature is highly uncertain, and groundwater will move between these sub-areas, so it is considered that these finer boundaries are not justified.</p>	<p>The Council seeks:</p> <ul style="list-style-type: none"> i. Amend Table 8-9 as shown below; including tighter timeframes for achieving the required nitrogen loss reductions. ii. Amend Table 8-9 (as shown below) to meet lower nitrate water quality limits and thresholds, shorten the timeframes and amalgamate zones as appropriate. iii. Environment Canterbury undertaking a proper alternatives evaluation in its Section 32, given the economic, social, recreational, and environmental value of the Christchurch aquifers as a drinking water supply for Christchurch and its contribution to maintaining ecological values in spring-fed rivers. iv. Amalgamate the five sub areas into one nitrate priority area.

Table 8-8: Waimakariri Water Quality Limits and Targets for Groundwater

Freshwater Management Unit	Groundwater Allocation Zone	Nitrate Nitrogen Limit or Target		<i>E.Coli</i> 95% of samples	Other contaminants ² Any sample
		Annual average concentration (mg/L) ¹	Maximum Concentration (mg/L)		
Ashley River/Rakahuri	Ashley	0.25	11.3	< 1 organism / 100 millilitres	<50% MAV ³
	Kowai	0.25			
	Loburn Fan	4.4			
	Lees Valley	0.2			
Northern Waimakariri Tributaries	Cust	5.65 (target)			
	Eyre	4.1			

¹ The annual average nitrate concentration is the average of all samples collected within the Groundwater Allocation Zone over the preceding five year period. Where no groundwater samples are available for Lees Valley the nitrate-nitrogen concentrations in the Ashley River/Rakahuri at the Gorge under low flow conditions are used as a proxy.

² Other contaminants of health significance as listed in NZ Drinking-water Standards.

³ Maximum Acceptable Value (as listed in 2 above).

A target is a limit which must be met at a defined time in the future, meaning it only applies in the context of over-allocation. For groundwater zones with a water quality (target) against them, the objective is to improve water quality to meet this target over time. Actions to achieve the nitrate targets in Table 8-8 will be implemented by 1 January 2080.

Table 8-9: Nitrate Priority Area Staged Reductions in Nitrogen Loss for Farming Activities, Farming Enterprises and Irrigation Schemes

Nitrate Priority Sub-area (see Planning Maps)	Farming type	Cumulative percentage reductions in nitrogen loss and dates by which these are to be achieved					
		By 1 January 2030	By 1 January 2040	By 1 January 2050	By 1 January 2060	By 1 January 2070	By 1 January 2080
Sub-area A	Dairy	45% 40%	30% 60%	80%	-	-	-
	All other	5% 20%	10% 30%	40%	-	-	-
Sub-area B	Dairy	15%	30%	45%	-	-	-
	All other	5%	10%	15%	-	-	-
Sub-area C	Dairy	15%	30%	45%	60%	-	-
	All other	5%	10%	15%	20%	-	-
Sub-area D	Dairy	15%	30%	45%	60%	75%	-
	All other	5%	10%	15%	20%	25%	-
Sub-area E	Dairy	15%	30%	45%	60%	75%	90%
	All other	5%	10%	15%	20%	25%	30%

¹ The starting point for applying each percentage reduction in nitrogen loss in Table 8-9 is generally the Baseline GMP Loss Rate except as otherwise provided for in Policy 8.4.26 for individual farming activities and farming enterprises, and in Policy 8.4.29 for irrigation schemes.

² For the purposes of applying the nitrogen reductions in Table 8-9, 'Dairy' farming does not include 'Dairy Support' activities. 'Dairy Support' is classified under 'All other' farming activities.

³ The percentage reductions required by Table 8-9 are only to be applied to farming activities that require resource consent for farming land use and only where the required reduction for each stage is greater than 3 kg nitrogen per hectare for dairy, and 1kg per hectare for all other farming activities.

Page number	Section of plan (include section title & number)	Specific clause (if appropriate)	Oppose or support (in part or in full)	Reasons	Relief sought
Section 8 – Waimakariri Rules					
80	8.5.18 and 8.5.19 and 8.5.20	Taking and use of ground or surface water for TSA	Oppose in part	<p>TSA and MAR are likely to be part of the solution to reducing nitrate and improving water quality in groundwater and surface water i.e. the recharge to Christchurch's aquifer system and the water flowing into the Waimakariri River.</p> <p>Therefore, there should be sufficient water available to provide for TSA and/or MAR to meet the water quality objectives of the plan. There appears to be no water allocation available for TSA or MAR unless a consent is applied for as a non-complying activity. This means water availability assessment is required and could be a fairly high hurdle and prevent water being used for TSA and/or MAR. This will act as a disincentive for TSA and MAR as a tool for reducing nitrate concentrations and improving water quality</p>	<p>i. Amend Rule 8.5.18 to read as follows:</p> <p>8.5.18 The taking and use of groundwater or surface water for targeted stream augmentation and the subsequent discharge of that water into a surface water body is a restricted discretionary activity provided the following conditions are met:</p> <ol style="list-style-type: none"> 1. The take, in conjunction with all other existing consented takes, does not result in an exceedance of any allocation limit in Tables 8-1, 8-2, 8-3 and 8-4; and 2. ... <p>ii. Amend rule 8.5.18 appropriately, or provide an alternative so that it is clear that targeted stream augmentation is non-consumptive and not subject to the allocation limits in Tables 8-1, 8-2, 8-3 and 8-4.</p> <p>iii. Amend rules 8.5.19 and 8.5.20 to give effect to the above</p>

					<p>amendments and provide consistency.</p> <p>iv. Make any other consequential changes necessary to give effect to the submission, including altering any district - wide rule in Section 5 that would otherwise prevail.</p>
	Map of Nitrate Priority Area		Oppose in part	<p>The Nitrate Priority Area map covers a lesser extent than the groundwater source area for Christchurch aquifers shown in the groundwater modelling report. This means that activities affecting Christchurch groundwater beyond those shown in the map will not be controlled effectively.</p>	<p>Amend the Nitrate Priority Area map so that it covers the full extent of the area that is the groundwater source for Christchurch aquifers.</p>
200	Schedule 8 Region Wide Water Quality Limits	Tables for: Rivers, Lakes, Groundwater	Oppose	<p>The water quality targets set in the Rivers, Lakes and Groundwater tables are too high.</p> <p>The nitrate nitrogen targets cross referenced to Table 1a for water bodies is not clear and difficult to implement.</p> <p>A footnote in the Rivers table also states that no further deterioration of attribute state will occur below that established in 2018. 2018 is already past so the word “at” should be used rather than “in” and a more specific date. The attribute state determined at 2018 could be too high to meet the outcomes required for healthy drinking water and ecosystems. It is not clear how an established attribute state will be determined and by whom. No equivalent footnote is contained in the Lakes and Groundwater tables. This footnote also</p>	<p>(i) Amend Schedule 8 to add lower thresholds in line with up to date research on effects of water quality attributes on human health and ecosystems, NPS limits and relevant ANZECC 2000 Guideline values, and outcomes sought by the community.</p> <p>(ii) Alter footnote in Rivers table and add it to the other tables in Schedule 8: “Where a particular waterbody currently meets a higher (better) attribute state than indicated in this table, that water body shall not deteriorate below its existing attribute state as established at 2018 by Environment Canterbury”.</p>

				<p>seems to be inconsistent with other parts of the plan.</p> <p>The integration of Schedule 8 limits and targets into PC7 and implementation within the Land and Water Regional Plan is not clear.</p>	(iii) Provide a link from Schedule 8 to the provisions in PC7.
Planning Maps	Nutrient Allocation Zones	<p>Plan Change 7 Maps</p> <p>LWRP Maps A-C01, A-C02, A-C03, A-C04 A-028, A-029, A-035, A-036, A-042, A-043, A-049, A-050, A-051, A-058,</p>	Oppose in part	<p>It is understood that the red and orange nutrient allocation zones identified in the operative LWRP maps for the Waimakariri sub-region have been removed and by <u>implication</u>, the Rules in Section 5 no longer apply. However, this is not clear in the Plan Change. The policies and rules for nutrient management for Section 8 and the Nitrate Priority Area now appear to be “replicated” through Rules 8.5.24, 8.5.25, and 8.5.26 (and are effectively a more robust red zone) and work alongside the new maps in Plan Change 7.</p> <p>In addition, there appears to be gaps in the two areas where the boundaries do not match.</p>	<p>i. Make a clear statement in the plan under the heading for Nutrient Management (at page 80 of the Plan change documents) or provide a table that clearly explains that the rules in Section 5 for nutrient management do not apply to the Waimakariri sub-region and the Nitrate Policy Area.</p> <p>ii. Provide clear policies and rules with maps covering the full extent of the Nitrate Policy Area and PC7 extent.</p> <p>iii. Align the boundaries to remove gaps.</p>