

**BEFORE THE CANTERBURY REGIONAL COUNCIL  
AT CHRISTCHURCH**

**IN THE MATTER** of the Resource Management Act  
1991

**SUBMITTER** **COMMUNITY AND PUBLIC  
HEALTH A DIVISION OF THE  
CANTERBURY DISTRICT  
HEALTH BOARD**

**SUBJECT** **HEARING GROUP 1 FOR THE  
PROPOSED LAND AND  
WATER REGIONAL PLAN**

**SUBMITTER NO. 093**

**STATEMENT OF EVIDENCE OF STEWART FLETCHER**

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## 1. INTRODUCTION

### Qualifications and experience

- 1.1 My name is Stewart William Fletcher. I live in St Albans, Christchurch. I am a qualified planner with approximately fifteen years experience in planning.
- 1.2 I hold the qualification of Bachelor of Resource Studies from Lincoln University and I am also a full member of the New Zealand Planning Institute.
- 1.3 I have extensive experience in planning including notified resource consents, policy hearings and the provision of expert evidence for the assistance of the Environment Court.

### Scope of evidence

- 1.4 This evidence relates to the submission of Community and Public Health a Division of the Canterbury District Health Board (CDHB) on the Proposed Canterbury Land & Water Regional Plan (LWRP). The submission is number 093 and various comments and recommendations are made as part of the submission.
- 1.5 My evidence is structured as follows:
  - a. Background;
  - b. Key Recommendations;
  - c. Other Matters; and
  - d. Conclusion.

## 2. BACKGROUND

- 2.1 The Community and Public Health Division of the Canterbury District Health Board (CDHB) provides public health services to those people living in the Canterbury, South Canterbury and West Coast regions. Goals of CDHB include:

- Improve the health and wellbeing of our region, especially for children and young adults
- Reduce health inequalities especially for those of relative socio-economic deprivation
- Improve Māori and Pacific health outcomes
- Prevent illness and hospitalisation
- Work in partnership to achieve lasting change

2.2 Areas that CDHB work within, and provide assistance with, include among other things:

- Drinking water
- Environmental Health Issues
- Health Information
- Recreational Water
- Waste Management
- Communicable Disease Control

2.3 Specifically in relation to drinking water the role of CDHB working on behalf of the Ministry of Health is to facilitate improvement in the quality of community drinking water supplies throughout the district. Staff ensure water quality by undertaking the following actions:

- Administering the requirements of the Health (Drinking Water) Amendment Act 2007
- Assessing water suppliers compliance with the Drinking Water Standards for New Zealand
- Assessing water supplies and assigning a 'Public Health Grade'
- Assessing water supplier's public health risk management plans
- Assisting small water supplies via the Drinking Water Assistance Programme

- 2.4 On the basis of the role CDHB provides they have a strong interest in those public provisions relating to water quality. Accordingly CDHB have been actively involved providing comment on the Draft Land and Water Regional Plan (Version for First Schedule Consultation – June 2012) and the Draft Land and Water Regional Plan (May 2012) and continue to maintain an interest in the development of the LWRP.
- 2.5 CDHB have submitted on the LWRP to maintain and raise an awareness of a number of matters considered important for the region. Several of the points raised are in support of provisions in the LWRP and a number of other points are minor recommended amendments. In order to assist in refining those points raised three key areas have been identified and are discussed below in section 3 of this evidence. While greatest consideration of the three points is sought, those recommendations made with regards to other matters have not been withdrawn and accordingly some consideration of all recommendations made in the CDHB submission is required. To assist a summary of all submission points, including reasons, has been provided in section 4 of this evidence.

### 3. **KEY RECOMMENDATIONS**

- 3.1 The submission included a number of recommendations on various matters in the LWRP. Of those recommendations CDHB wish to highlight and encourage greater consideration of the following to lead to a reduction of risk to sources of human drinking water:

- Referencing Other Documents
- Contaminant Effects on Drinking and Recreational Water
- Centralised Wastewater Disposal Systems

- 3.2 These matters are discussed as follows:

#### **Referencing Other Documents**

- 3.3 There are a number of regulatory documents at both a regional and national level that are relevant in the application of the LWRP. It is

recommended that better reference to these other documents is included as part of the LWRP. Relevant documents include:

- The Canterbury Water Management Strategy
- The National Environmental Standard for Sources of Human Drinking Water Regulations 2007
- Health (Drinking Water) Amendment Act 2007
- Guidelines for separation distances based on virus transport between on-site domestic wastewater systems and wells (ESR 2010).
- Environmental Standard for Drilling Soil and Rock (NZS 4411)
- Zonal Implementation Plans

3.4 These documents assist in providing a wider framework within which the LWRP sits. Reference and consideration of these documents ensures consistency between regulatory documents and also provides a mechanism for members of the public to check if a proposal complies with other requirements.

3.5 It is recommended that reference to these documents is primarily located within Section 2 of the Plan which currently includes a table detailing the relationship of the LWRP with other regional plans controlling land and water. In addition, notes can be included with various rules in different sections of the plan.

3.6 It is recommended the following is inserted into the LWRP:

***“2.9A Relationship with Other Statutory/Regulatory Documents and Guidelines***

*The LWRP has been developed with reference to a number of regulatory documents. The requirements of these documents remain and in some instances compliance with these documents will also need to be considered and achieved in addition to the LWRP, particularly as part of any resource consent process. These documents include:*

<b>Document</b>	<b>Details</b>
<p><i>The Canterbury Water Management Strategy</i></p>	<p><i>The Canterbury Water Management Strategy (CWMS) has been developed over the past eight years to address the issues around water in Canterbury. These issues include the declining health of both surface water and groundwater, an ongoing loss of cultural value and recreational opportunities, as well as the declining availability and reliability of water for agricultural and energy users. The CWMS establishes a collaborative framework for sustainably addressing these issues to enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from Canterbury's water resources.</i></p>
<p><i>The National Environmental Standard for Sources of Human Drinking Water Regulations 2007</i></p>	<p><i>The standard is a regulation under the Resource Management Act 1991. It came into effect on 20 June 2008. It requires regional councils to ensure that effects on drinking water sources are considered in decisions on resource consents and regional plans. Specifically, councils are required to:</i></p> <ul style="list-style-type: none"> <li><i>- decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment</i></li> <li><i>- be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment</i></li> <li><i>- place conditions on relevant resource consents requiring notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water.</i></li> </ul>
<p><i>Health (Drinking Water) Amendment Act 2007</i></p>	<p><i>This Act provides a legislative framework for drinking water (both reticulated and tinkered). The main duties in the Act only apply to supplies above a certain size, that is those that serve:</i></p> <ul style="list-style-type: none"> <li><i>- 25 or more people for 60 or more days per year; and</i></li> <li><i>- if there are fewer than 25 people, but 6000 or more 'person days' (that is the number of people multiplied by the number of days they receive water from the supply).</i></li> </ul> <p><i>A principle duty in relation to catchments is the duty to take reasonable steps to contribute to protection of source of drinking water.</i></p>
<p><i>Guidelines for separation distances based on virus transport between on-site domestic wastewater systems and wells (ESR)</i></p>	<p><i>The guideline calculates separation distances for domestic on-site wastewater treatment systems based on virus movement and removal in the subsurface environment. The document provides a process and tables of calculated data, which, in conjunction with the specifics of a particular location, allow safe minimum separation distances</i></p>

2010).	(or the required log reduction in virus concentration) to be estimated.
<i>Environmental Standard for Drilling Soil and Rock (NZS 4411)</i>	<i>The Standard sets out the minimum national environmental performance requirements for drilling of soil and rock, the design, construction, testing and maintenance of bores, the decommissioning of holes and bores, and record keeping</i>
<i>Zonal Implementation Plans</i>	<i>Zonal Implementation Plans recommend actions, responsibilities and time-frames for activities to help achieve the principles, targets and goals set out in the Canterbury Water Management Strategy (CWMS).</i>

- 3.7 It is recommended the following note is included as part of Tables 1a and 1b in Section 4 of the LWRP:

*“The National Environmental Standard for Sources of Human Drinking Water Regulation is also applied in all relevant situations for water bodies which serve group and community drinking water supplies.”*

- 3.8 In recommending the above amendment it is noted that CDHB are recommending that the National Environmental Standards should also be applied to group drinking water supplies in addition to community drinking water schemes.

- 3.9 It is recommended the following note is included as part of the rules for small and community water takes (Rules 5.84 – 5.88):

***“Small and Community Water Takes Interpretation***

.....

*Note 4: Takes for drinking water supplies will also need to comply with other requirements including The National Environmental Standard for Sources of Human Drinking Water Regulations 2007 and the Health (Drinking Water) Amendment Act 2007.”*

- 3.10 It is recommended the following note is included as part of the rules for on-site wastewater (Rules 5.7 – 5.10):

**“On-site Wastewater**

**“Note:** Detailed information about separation distances for on-site effluent disposal systems is available from the Institute of Environmental Science and Research. Information includes the Guidelines for separation distances based on virus transport between on-site domestic wastewater systems and wells (ESR 2010).”

- 3.11 It is recommended the following note is included as part of the rules for bores (Rules 5.78 – 5.83):

**“Bores**

Note: The construction and maintenance of a bore shall be carried out in accordance with the Environmental Standard for Drilling Soil and Rock (NZS 4411).”

**Contaminant Effects on Drinking and Recreational Water**

- 3.12 Section 4 of the LWRP details strategic policies which include Tables 1a, 1b and 1c. In referring to all river and lake management units, Tables 1a and 1b specify that toxin producing cyanobacteria shall not render the river/lake unsuitable for recreation or animal drinking water. It is the submission of CDHB that this should be extended to also include human drinking water.
- 3.13 Cyanobacteria are naturally occurring parts of terrestrial and aquatic ecosystems and can be associated with bloom formations in certain environmental conditions. When forming a bloom, cyanobacteria can produce potentially harmful substances (cyanotoxins) that are difficult to treat for the purpose of providing safe drinking-water.
- 3.14 Detailed evidence has been provided by Dr Wendy Williamson that confirms the issues around cyanobacteria and its treatment. This assists in understanding why cyanobacteria need to be controlled and



the difficulties and expense required to treat water for the purpose of establishing a drinking water supply.

- 3.15 It is common for drinking water to be obtained from a surface water take. People tend to assume all Canterbury drinking water is obtained from groundwater whereas there are numerous surface water takes that supply a number of people. In fact, 371 drinking water supplies in Canterbury are sourced from surface water, serving approximately 56,000 people.
- 3.16 It is therefore considered important that river and lake water catchments are managed so as to minimise cyanobacteria rendering the water body unsuitable for drinking water. As also demonstrated through the evidence of Dr Williamson, it is preferable to prevent cyanobacteria affecting the water supply rather than going to the expense and difficulty of treating the water.
- 3.17 The purpose of Tables 1a and 1b is to provide a group of outcomes for which lake or river water is required to meet, as detailed in Policy 4.1. It is not considered the inclusion of a reference to human drinking water will have wider effects in the context of the LWRP. This is because cyanobacteria are not specifically referred to in the rules of the Plan and problems with cyanobacterial blooms are typically due to co-occurrences such as river flow rates and nutrient runoff, which are suitably addressed and controlled in the Plan. In addition it is considered that the inclusion of a reference to human drinking water will provide better consistency in the plan including Policy 4.4, which seeks to manage water including to provide for community drinking-water supplies.
- 3.18 Therefore, it is considered the proposed amendment sought is both minor in its implications for the Plan but will assist in controlling cyanobacteria and the effects they can have for human drinking water. Accordingly, it is sought that the following amendments are made to the narrative statement in Tables 1a and 1b:.

*“Toxin-producing cyanobacteria shall not render the river unsuitable for recreation or human and animal drinking-water.”*

- 3.19 In addition it is noted that a Microbiological Indicator has been included as part of Tables 1a and 1b. The indicator is based on suitability for contact recreation. Different levels, such as good and good to fair, have been specified for the different management units.
- 3.20 No Microbiological Indicator value has been set for the Canterbury River Management Units:
- Hill Fed Urban
  - Banks Peninsula
  - Spring Fed Plains
  - Spring Fed Urban.
- 3.21 In addition no Microbiological Indicator value has been set for the Canterbury Lake Coastal Lakes Management Units.
- 3.22 Through not setting a microbiological indicator for these management units there could be a perceived disregard for the quality of these waterbodies. It is recognised that there are issues with water quality in these areas but it is also considered better to include some form of standard in order to provide an incentive to improve water quality. Accordingly it is sought that Tables 1a and 1b are amended to include microbiological indicators for all management units.

### **Centralised Wastewater Disposal Systems**

- 3.23 Community and Public Health have been becoming increasingly concerned about septic tank systems and their continuing usage as areas develop and increase in density.
- 3.24 Typically a village area will treat and dispose of effluent using individual septic tank systems and a well maintained septic tank can work very well. The issue arises when further development within or adjoining that village occurs, which is not uncommon in Canterbury.

An increase in the density of dwellings and septic tanks can increase the risk of groundwater contamination and exposure of public to pathogens if septic systems fail.

- 3.25 It is recognised that territorial authorities can be placed in difficult situations where a trigger point for population and dwelling density is reached, such as a large subdivision and consideration needs to be given to the method of effluent disposal, which can have wider implications for a local community. Understandably, for a council, it is not attractive to have multiple small reticulated disposal systems for individual subdivisions scattered across a district that ultimately the council will have to maintain. In addition the establishment of a reticulated effluent disposal system within an existing village would carry its own issues including costs. It is therefore recognised that there is a difficult balancing act as to how effluent disposal is managed in built up areas.
- 3.26 While there are difficulties, it is suggested that a system or process needs to be put in place to encourage consideration of the matter of individual septic systems verses reticulated wastewater management before people are exposed to unacceptable health risks, including the incorporation of appropriate provisions in the Plan. The potential effects from a high density of septic tanks are significant and are further accentuated if one or more of those septic tanks should fail.
- 3.27 Detailed evidence regarding this matter has been provided by Dr Wendy Williamson. The evidence assists in understanding the significant issues that can arise from domestic onsite wastewater systems including effects on groundwater. The evidence also provides guidance as to what point a territorial authority should start considering additional measures, or alternative options for the disposal of domestic wastewater.
- 3.28 As a demonstration or example of the need to actively control the potential effects from onsite wastewater disposal systems, CDHB have been investigating potential issues within Darfield which operates individual septic tank systems (domestic on-site wastewater

management). The density of systems is significant and consequently it is considered there is a need to increase monitoring of groundwater quality and ultimately investigate the installation of a reticulated sewage network. CDHB have met on several occasions with Environment Canterbury representatives to discuss this matter with the most recent meeting being in December 2012. There is agreement over the issues and Environment Canterbury is supportive of further investigations being undertaken.

3.29 On the basis of the above, it is proposed that a provision should be included in the Plan that promotes consideration of the issue and whether additional domestic wastewater management and disposal measures are required.

3.30 It is recommended that an additional policy is included in the plan which could be worded as follows:

*“4.11A The disposal of domestic effluent and wastewater shall be managed so as to avoid any adverse effect on surface and ground waters. Where residential density exceeds more than 1.5 dwellings per hectare and a total population of greater than 1000 persons, the utilisation of community reticulated systems shall be promoted where appropriate. Alternatively, other measures shall be promoted to further reduce effects on water bodies from effluent disposal systems including secondary treatment systems and septic tank warrants of fitness.”*

3.31 In addition, and in reflection of the above, it is recommended that the following is inserted into existing wastewater rules:

**“5.9 The discharge of wastewater from a new or upgraded on-site domestic wastewater treatment system onto or into land in circumstances where a contaminant may enter water is a permitted activity, provided the following conditions are met:**

.....

6. The discharge is not located within an area exceeding 1.5 dwellings per hectare in density and a population exceeding 1000 persons.”

**“5.10 The discharge of wastewater from a new or upgraded on-site domestic wastewater treatment system onto or into land in circumstances where a contaminant may enter water that does not meet one or more of the conditions of Rule 5.9 is a restricted discretionary activity.**

**The CRC will restrict discretion to the following matters:**

1. *The effect of not meeting the condition or conditions of Rule 5.9.*
2. *The extent to which the proposed activity is consistent with the objectives and policies of this Plan relating to Ngāi Tahu values, human and animal health and drinking-water quality.*
3. *The effect of septic tank density in the local area including known septic tank failures, the health status of the community, current groundwater quality, the nature of effects of current sewage disposal methods, treatment options available and affordability.”*

3.32 CDHB considers the above is only one part of a potential solution which will require the participation of itself, Environment Canterbury and relevant territorial authorities. It is considered the ongoing discussions regarding Darfield, and the recommended amendments above, will potentially provide the required catalyst for the formation of a protocol between the different authorities as to when consideration should be given to improvements in wastewater treatment systems including reticulated systems. CDHB will be continuing to promote the addressing of this issue with Environment Canterbury and various territorial authorities.

4. **OTHER MATTERS**

4.1 As discussed above, a table has been prepared that summarises the recommendations made in the CDHB submission and the outcomes sought. It is noted that several of the points raised will be considered later as part of a different hearing group. Those recommendations **not requiring consideration and determination as part of Hearing Group 1** have been highlighted in yellow.

Rec No.	Reason for Recommendation	Outcome Sought
1.	The LWRP needs to provide further information about how Farm Environment Plans will be prepared, approved, implemented and audited.	Not Applicable for group 1 hearings. This submission point will be heard as part of Hearing Group 2.
2.	Section 1.2.3 of the LWRP suggests wetlands can filter sediments and contaminants. This section of the plan highlights the importance of wetlands and the role they can play in maintaining water quality. It is agreed that wetlands play an important role in maintaining water quality but they should not be automatically regarded as the perfect solution. On this basis the effectiveness of wetlands to reduce microbiological loadings should be examined further.	It is sought that the wording of section 1.2.3 as it relates to biodiversity, wetlands and riparian margins is amended to ensure it is understood that wetlands may not necessarily reduce some elements of contamination including microbiological contamination.
3.	The definition of outdoor intensive farming is amended so as to be consistent with other policy documents.	It is recommended the definition is amended to identify intensive farming as <i>“The increasing use of inputs (such as fertiliser, irrigation knowledge or capital) to grow more food from the same area of land”</i> .
4.	Definitions of the management units and sub units as referred to in Tables 1a and 1c should be provided in the LWRP.	Currently the management units described in Tables 1a and 1c are open to interpretation. More detailed clarification of the management

		units should be provided as part of the LWRP.
5.	Clause 3.12 of the LWRP is amended to recognise the importance of high quality water for the purpose of drinking water.	Clause 3.12 of the LWRP is amended to read: <i>“3.12 Groundwater continues to provide a sustainable source of high quality water for flows and ecosystem health in surface water bodies and for abstraction <u>for uses such as drinking water.</u>”</i>
6.	A link to targets in the Canterbury Water Management Strategy is included in the Strategic Policies section of the LWRP.	This matter has been referred to in section 3 of this evidence.
7.	The narrative in Table 1a of the LWRP is amended to include reference of the effect cyanobacteria can have on human drinking water.	This matter has been referred to in section 3 of this evidence.
8.	The narrative in Table 1b of the LWRP is amended to include reference of the effect cyanobacteria can have on human drinking water.	This matter has been referred to in section 3 of this evidence.
9.	A statement is included as part of Table 1a which advises that the National Environmental Standard for sources of Human Drinking Water is also applicable.	This matter has been referred to in section 3 of this evidence.
10.	Microbiological indicators should be identified for all management units identified in Tables 1a and 1b.	This matter has been referred to in section 3 of this evidence.
11.	Policy 4.20 of the LWRP is strengthened by including the following statement or similar.	That Policy 4.20 includes the following statement:  <i>“4Any water source used for <u>community drinking-water</u> supply is protected so that the community water supplies are able to meet the requirements of the Health (Drinking Water) Amendment Act 2007, and the requirements of the Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007.”</i>

12.	That the Regional Council works collaboratively with territorial authorities to encourage centralised wastewater disposal systems.	This matter has been discussed as part of section three above.
13.	<p>Research has been undertaken and guidelines prepared in relation to appropriate separation distances between wastewater systems and wells. Much of the research was undertaken in Canterbury. In order to assist users of the LWRP it is recommended reference to the guideline is included in the plan.</p> <p>It is also noted that other Regional Councils using the guidelines include the Waikato, Hawkes Bay and Environment Southland.</p>	<p>The following reference is included as part of the rules for on-site wastewater (Rules 5.7 – 5.10):</p> <p><i><b>Note:</b> Detailed information about separation distances for on-site effluent disposal systems is available from the Institute of Environmental Science and Research. Information includes the <u>Guidelines for separation distances based on virus transport between on-site domestic wastewater systems and wells (ESR 2010).</u></i></p>
14.	Policy 4.30 should be amended to consider the existing condition of the receiving environment.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
15.	Policy 4.31 should be amended to include a statement that a precautionary approach will be adopted for areas already over allocated for nutrients.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
16.	In order to protect groundwater, requirements in the LWRP should include the need for resource consent to take water for non-consumptive uses. This would also provide a mechanism to require the imposition of a suitable risk management plans for each take. Such a plan could include identification of potential contaminants, monitoring plans, contingencies and corrective actions.	The LWRP is amended to require resource consent for non-consumptive uses of ground water. Requirements associated with any resource consent should include the development of a risk management plan.
17.	The specified distances for the	It is sought that Section 5 of the LWRP is



	<p>application of vertebrate toxic agents specified in section 5 of the LWRP are inconsistent with distances recommended by the Ministry of Health.</p>	<p>amended to ensure distances are consistent with the Ministry of Health's recommendations. N.B. – the Medical Officer of Health may require these distances to be increased on a case by case basis.</p>
<p>18.</p>	<p>Backflow requirements for animal effluent are referred to in Rule 5.34 2(c). It is recommended that any backflow prevention device is testable.</p>	<p>Rule 5.35 2(d) is amended to read as follows:  <i>“(d) has <u>testable</u> backflow prevention installed if the animal effluent or water containing animal effluent is applied with irrigation water; and”</i></p>
<p>19.</p>	<p>Rule 5.35 2(a) specifies the following:  <i>“The use of land for a stock holding area, the use of land for the collection, storage and treatment of animal effluent and the subsequent discharge of animal effluent or water containing animal effluent and other contaminants onto or into land where a contaminant may enter water is a restricted discretionary activity, provided the following conditions are met:          .....          2. The discharge of animal effluent or water containing animal effluent and other contaminants:          (a) is not directly to, or within, 20 m of a surface water body (other than a wetland constructed primarily to treat animal effluent), a bore used for water abstraction or the Coastal Marine Area;”</i></p> <p>It is suggested that the term wetland is used loosely and more specific criteria could be developed.</p>	<p>The LWRP is amended to include performance criteria for wetlands constructed for the purpose of water treatment.</p>
<p>20.</p>	<p>The correct installation/construction of a</p>	<p>It is sought that Rule 5.78 is amended to include</p>

	bore is critical to prevent the ingress of contaminates or water. In order to insure this is undertaken reference to the environmental standard for drilling soil and rock should be referred to in the LWRP.	the following: <i>“7 The bore or gallery is installed in accordance with the Environmental Standard for Drilling Soil and Rock (NZS 4411, Standards New Zealand (2001).”</i>
21.	Rule 5.134 includes a requirement that temporary or permanent stocking of cattle shall be not less than 1000m upstream of a group or community water supply. CDHB suggests this rule may not be adequate to ensure suitable drinking water is provided and also the rule may not be consistent with Policy 4.26 which seeks to limit damage to water bodies by various measures including access to banks and beds by stock being limited to stock species that prefer to avoid water and at stocking rates that avoid evident damage.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
22.	The May version of the LWRP included a section titled “Rules for Sustainable Land Uses”. This section made reference to the impacts on water quality from land use activities requiring consent. CDHB suggests this section should be reinstated and additionally the potential for activities to cause adverse effects on water quality should also be considered in this section regardless of whether the activity is permitted or requires consent.	That the rules for “Sustainable Land Use” are reinstated in the LWRP and also include reference to the potential for activities to cause adverse effect on water quality.
23.	Section 14 of the LWRP should be amended to include reference to the Zonal Implementation Plans across the two regions and it needs to be ensured the LWRP and Zonal Implementation	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 3.

	Plans are consistent with one another.	
24.	Section 15 of the LWRP should include better reference to the zone having safe and secure drinking water of high quality particularly as the majority of rural water supplies in this area are surface water in nature.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 3.
25.	Farm Environment Plans (FEP's) should include consideration of potential adverse effects on groundwater resources.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
26.	Requirements 3 and 4 for FEP's should specify factors that should be taken into account in relation to groundwater such as its direction of flow.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
27.	FEP's should include contingency plans for incidents where farming activities exceed the permitted nutrient loading limit.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
28.	Mechanisms for informing relevant authorities of any incidents – ie exceedances of nutrient loading, should be included as part of FEP's.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
29.	For the FEP provisions in schedule 7 to operate effectively there needs to be a robust standardised assessment criteria showing how management objectives will be met and how audits will be carried out.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
30.	Additional guidance material for FEP's should be developed.	Not applicable for Group 1 Hearings. This submission point will be heard as part of Hearing Group 2.
31.	In the development of a Regional Concept Plan, as detailed in Schedule 16, the following should be considered: - The effects of water transfer on stream flow in donor and recipient catchments during dry seasons and low flow	The Regional Concept Plan is amended to take into consideration the issues identified.

	<p>conditions.</p> <ul style="list-style-type: none"><li>- The current and foreseeable future water needs and demand in both donor and recipient catchments.</li><li>- The connection of surface water and groundwater bodies in both donor and recipient catchments.</li><li>- Effects, beneficial or detrimental, on recreational use.</li><li>- Cumulative impacts on water quality in both donor and recipient catchments.</li><li>- The availability of water for responding to emergencies, including drought, in the donor catchment.</li></ul>	
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## 5. CONCLUSION

- 5.1 CDHB are actively involved with the protection and enhancement of human drinking water supplies as well as other matters. The LWRP provides opportunities to reinforce work already being carried out and encouraged by CDHB.
- 5.2 Generally CDHB is supportive of the LWRP. Submission points made are focused on specific aspects where minor amendments will assist in improving the Plan and to ensure it is supported by surrounding regulations.
- 5.3 Key recommendations are that better reference to other documentation could be included in the plan, the effects of cyanobacteria on human drinking should be considered and the LWRP should provide leadership in addressing and encouraging improvements in onsite wastewater disposal in more built up areas.

5.4 The recommended amendments are considered to improve and reinforce those provisions already included in the LWRP.

**S Fletcher**

**January 2013**