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Sarah Drummond
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Dear Sarah

LAND & WATER REGIONAL PLAN – RESPONSE TO REQUEST FOR FURTHER INFORMATION

Recently the Community and Public Health division of the Canterbury District Health Board (CDHB) provided evidence in support of their submission (Submission No. 93) on the Land & Water Regional Plan (LWRP). During that hearing further information was requested by Commissioners in relation to microbiological indicator values and performance criteria for constructed wetlands.

We respond to the request as follows:

Microbiological Indicator Values

Paragraphs 3.19 – 3.22 of the evidence of Stewart Fletcher, on behalf of the CDHB, identified that microbiological indicator values should be included for all waterways identified in Tables 1a and 1b of the LWRP. The reason for this was that having no set value did not provide an incentive for the enhancement of the waterway.

During the hearing it was requested by the Commissioners that further information was provided as to what would be a more appropriate term or value, in the view of the CDHB.

We have considered this matter and note that it would be appropriate to utilise information garnered from the recreational water quality monitoring programme undertaken by ECan based on the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas (MfE/MoH). This would provide a means of carrying out an assessment to obtain a specific value rather than the current 'no set value'. Environment Canterbury's Technical Report, "Review of proposed NRRP water quality objectives and standards for rivers and lakes in the Canterbury Region, March 2009", provides information on possible values, based on the



Microbiological Water Quality Guidelines.

On this basis it is recommended the term 'no set value' in Tables 1a and 1b is replaced with either 'Good/Fair' or "Improvement".

Performance Criteria for Constructed Wetlands

Recommendation 19 of the CHDB submission on the LWRP sought the inclusion of performance criteria for wetlands constructed for the purpose of effluent treatment. This was specifically in relation to Rule 5.35 2(a) which identified the discharge of animal effluent shall not be directly to a surface water body other than a wetland constructed primarily to treat animal effluent. It was the submission of the CDHB that if one is going to make provision for constructed wetlands then some form of performance criteria should also be included. At the hearing the Commissioners noted that no suggested wording was included with the submission and they provided the opportunity for the CDHB to consider and suggest what any performance criteria could include.

The CDHB have considered this matter further and note that they do not have suitable performance criteria for constructed wetlands to treat animal effluent. In consideration of other sources of information, a NIWA study has been identified which found a negative impact on the level of E coli in the effluent from a constructed wetland (*Faecal microbe dynamics in a wetland system by Sukias J, Stott R, McKergow L and Tanner C*). This confirms that appropriate consideration should be given to design and operation requirements of "constructed wetlands".

NIWA's document "Guidelines for Constructed Wetland Treatment of Farm Dairy Wastewaters in New Zealand" may provide useful information for the construction and use of wetland treatment systems. This guideline includes a list of requirements for effective constructed wetland treatment. The guidelines are available at the following website:

<http://www.niwa.co.nz/sites/default/files/import/attachments/st48.pdf>

An option could be to include the requirements as performance criteria in the LWRP provided reference to the guidelines is also included. An alternative could be to instead require that any wetland is designed, constructed and maintained in accordance with the guidelines.



It is recommended that before any further consideration of this matter, including reference to the guidelines in the LWRP, consultation with NIWA should be undertaken. It would appear that NIWA is the most qualified to provide guidance as to what appropriate performance criteria could be. It is also noted that the guidelines referred to above were released in 1997 so it is quite possible that more up to date information may be available from NIWA.

In addition to the above, in determining any performance criteria, the following NIWA documents have also been identified and the Commissioners may also want to consider the following as part of any determination of the matter.

Constructed wetlands for household waste water -

<http://www.envirolink.govt.nz/PageFiles/677/909-SDC85%20Guidelines%20for%20use%20of%20constructed%20wetlands%20for%20on-site%20treatment.pdf>

New Zealand Constructed wetlands guidelines

http://www.nzwwa.org.nz/Folder?Action=View%20File&Folder_id=101&File=constructed_wetland_planting_guide.pdf

Conclusion

Thank you for the opportunity to provide the Commissioners with further information regarding points identified in the CDHB submission and associated evidence. Should you have any queries in relation to the above please feel free to get in contact.

Regards



Stewart Fletcher

Stewart Fletcher Planning Services

