



28 April 2017

Clean Water Consultation 2017

Ministry for the Environment

PO Box 10362

Wellington 6143

watercomments@submissions.mfe.govt.nz

Dear Sir/Madam

Re: Clean Water Consultation 2017

Thank you for the opportunity to provide a written submission on this consultation document.

Regional Public Health serves the greater Wellington region, through its three district health boards (DHBs): Capital & Coast, Hutt Valley and Wairarapa and is based at the Hutt Valley District Health Board.

We work with our community to make it a healthier safer place to live. We promote good health, prevent disease, and improve the quality of life for our population, with a particular focus on children, Māori and working with primary care organisations. Our staff includes a range of occupations such as: medical officers of health, public health advisors, health protection officers, public health nurses, and public health analysts. The Ministry of Health requires us to reduce potential health risks by ensuring that public health risks associated with resource management activities are considered.

We are happy to provide further advice or clarification on any of the points raised in our written submission. The contact point for this submission is:

Campbell Gillam
Health Protection Officer



Kind Regards

A handwritten signature in blue ink, appearing to read 'Jill'.

Dr Jill McKenzie
Medical Officer of Health

A handwritten signature in blue ink, appearing to read 'Peter'.

Peter Gush
Service Manager

GENERAL COMMENTS

Comment on strategic approach of proposed amendments

Regional Public Health supports the intent of the proposed amendments to the National Policy Statement for Freshwater Management 2014 to safeguard the health of people and communities as affected by contact with fresh water. In particular, we support the removal of references to secondary contact with fresh water and its replacement with contact with fresh water, or more specifically the suitability of waterways for swimming.

Regional Public Health supports proposals to improve the quality of water in large rivers and lakes so that the risk to human health is reduced and they are 'suitable for immersion more often'.

Regional Public Health also supports the requirements on regional councils to make or change plans to support those proposals and to consider how such improvements shall be implemented. We note that this approach involves responding to community priorities.

Overall the policy is likely to support improvement of freshwater bodies over time. However, we have some specific points and concerns we want to raise to ensure there is a clear understanding of how these strategic objectives and policies align with existing operational risk management guidelines for recreational water and human health, and the communication of risk to the public.

Ground water reference omission

Regional Public Health notes that ground water is not considered in the policy. There are often significant connections between ground and surface water affecting both water quality and quantity.

Regional Public Health notes that the National Policy Statement Interpretation of 'Freshwater take' includes ground water and Objective B1 (Water Quantity) includes managing the 'taking of fresh water'.

Managing both the quality and quantity of ground water are critical and ground water is an important source of human drinking water in the greater Wellington region. The quality and quantity of ground water in our region has deteriorated in recent years and in particular an increasing number of bores have increasing levels of both nitrate and pathogens.

Regional Public Health believes that under the concept of integrated catchment management that both ground water and surface water system management should be considered together. It would be appropriate that ground water is specifically included in the National Policy Statement with inclusion of ground water attribute tables.

Recommendation 1: That attribute tables for ground water is included for ground water values with a clear definition of ground water and attributes for nitrate and pathogen levels.

A. WATER QUALITY

Objective A3

The current National Policy Statement for Fresh Water Management has attributes that apply to all rivers and lakes. The proposed objectives and policies cover only fourth order rivers and lakes with a

perimeter of greater than 1.5 km. Regional Public Health believes that limiting objectives to the category of “large rivers” represents missed opportunities to protect public health. Regional Public Health is aware of a number of locations which people use for primary contact activities which fall outside the large river category, but still represent significant fresh water recreational exposure.

Regional Public Health recommends the decision on which rivers should be swimmable is undertaken by regional councils together with communities, based on the current, historical, potential or actual sites that the community values for contact recreation.

Recommendation 2: That actual rivers or lakes or sites on those rivers that are classified swimmable be determined by a consultative process with local community input.

Policy A4 and direction (under section 55) to regional councils

Policy A4 2(b) requires every regional council to ensure that when considering any application for a discharge, the consent authority must have regard to “the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their contact with fresh water resulting from the discharge would be avoided”.

Regional Public Health believes it would not be feasible to determine whether an adverse effect as it relates to an individual or a community is no more than minor. Individual health effects, for example enteric illness arising from contact with contaminated water, can range from a minor self limiting infection to death. We are unsure of the mechanism or test that a regional council would implement to determine at what point those effects can be classed as no more than minor.

Recommendation 3: That Policy A4 2(b) is amended to read: “the extent to which it is feasible and dependable that adverse effects on the health of people and communities as affected by their contact with fresh water resulting from the discharge would be avoided.”

B. WATER QUANTITY

Additional Water Quantity Objective

Regional Public Health believes that the provision of sufficient water for human domestic use is an important water quantity objective.

Recommendation 4: That an additional Objective B5 be inserted stating: “To ensure that there is sufficient water for human domestic use”.

Recommendation 5: That Policy B7 (1) be amended by the inclusion of a new subclause (c): “The extent to which the provision of sufficient supply of human domestic use is maintained”.

APPENDIX 1 Natural Values and Uses for Fresh Water

Regional Public Health believes that a basic fundamental value for water, even more important than recreation, should be that water quality and quantity must provide sufficient and safe water for

domestic water supplies. To that end the category 'Extractive uses Water Supply' listed under additional values, should more appropriately sit under the Category of Compulsory Values.

Recommendation 6: That the Additional Value 'Extractive uses - Water supply' be included as a Compulsory Value.

APPENDIX 2 Attributes Tables

Attribute State for Human health for recreation *E. coli*

Regional Public Health wishes to comment on the proposal that the frequency to which a river exceeds a level of 540 *E. coli* per 100 ml be used as a guide to swimmable status.

Regional Public Health would like more clarity on how the attribute states for *E. coli* (*Escherichia coli*) were derived. Levels of *E. coli* and the associated level of risk from gastrointestinal infection due to *Campylobacter* have been derived for contact recreation (all forms) in the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas 2003. These were derived using modelling that incorporated 1000 individuals exposure to ingestion or inhalation of a specified volume and the duration of exposure.¹

Regional Public Health believes that the quantitative *E. coli* risk profiles that have been developed and are described in the document "Water quality for swimming categories (attribute states) in detail" may underestimate the levels of risk. This is because by using a median of 130 *E. coli* per 100 ml the actual levels of *E. coli* in the remaining 50% of samples may vary markedly even though an upper limit of the percentage of samples above 260 *E. coli* per 100 ml has been set. For example, in the swimmable green category 30% of samples may be as high as 540 *E. coli* per 100 ml and 5% may be as high as 1000 *E. coli* per 100 ml. An equivalent category from the 2003 Microbiological Water Quality Guidelines is the "good" category of the Suitability for Recreation Grade. In contrast to the green category, the sites graded as "good" have less than 5% of samples greater than 260 *E. coli* per 100 ml.

The Microbiological Water Quality Guidelines 2003 use both a 95th percentile value of *E. coli* to determine a Microbiological Assessment Category combined with a Sanitary Inspection Category (identifies the most likely source of microbiological contamination for the site) to determine a risk category (Suitability for Recreation Grade) at any particular swimming site. The impact of this, as previously noted, is the acceptable swimming risk is higher for the proposed National Policy Statement than these Guidelines.

Of particular note, a faecal source arising from a municipal wastewater treatment plant effluent outfall does not correspond well with the *E. coli* indicator. There is often a lack of information on pathogen removal efficiency of wastewater treatment plants and because there is not a strong numerical correlation between *E. coli* and viruses (e.g. norovirus), *E. coli* is not a good indicator of the health risk from contact recreation. Regional councils when determining risk, grade affected sites accordingly to take account of this uncertainty. The impact of any wastewater discharge is for specific areas of the river rather than the whole river.

¹ MoH/MfE. Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas, 2003; Table H2, Page H26.

The consultation document is not clear on the relationship between the Microbiological Water Quality Guidelines and the proposed Attribute Table of the National Policy Statement or of the on-going status of the Microbiological Water Quality Guidelines. Regional Public Health believes the relationship between the National Policy Statement for Freshwater Management 2014 and the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas needs to be clarified.

Recommendation 7: That the status of the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas 2003 and their relationship with the proposed National Policy Statement is clarified and that the 2003 Guidelines (or subsequent update) are maintained.

Risk Communication and Correlation with Local Recreational Water Monitoring Programme

The discussion document states that coloured maps have been developed that set out *E. coli* levels in rivers and how these levels affect where and when people can swim. Regional Public Health believes that these maps actually simply indicate the percentage of historical test results that these rivers have been above or below the public health warning level of 550 *E. coli* per 100 ml, at which point the need for public warnings is reviewed. Although the aim is for attribute states to be based on a minimum of 100 samples over a time period less than 10 years, it is not clear on how many samples the current maps have been based upon.

Regional Public Health is concerned that the public may assume that such maps definitively state the suitability of a river reach or individual site at a particular time, where that may not in fact be the case. There is also a high likelihood that the swimmability categories will not correlate well with an individual sites current Suitability for Recreation Grade. Regional Public Health believes that there is potential for public confusion. A river with a general category of suitability for swimming may not on any particular day or at any particular site reflect the actual microbiological human health risk.

Thus it will be important that there is effective messaging to the public that the maps be used in conjunction with the local recreational water monitoring programme.

Recommendation 8: That any change to the National Policy Statement in regard to swimmable river attributes is accompanied by public messaging and that public messaging clearly advises the limitations of a “Safe to Swim” swimmable definition and what it does not include, and refers users to applicable guidelines.

Compliance with *E. coli* median results

The document “Water quality for swimming categories (attribute states) in detail” outlines a second test for swimmable river categories, compliance with a median of less than or equal to 130 *E. coli* per 100 ml. This is not reflected in the proposed attribute table. Regional Public Health notes that the background documents state that if the 95th percentile limit is met then in general the other results follow. However, we would be concerned if this was assumed and the additional parameter was not specified as being required. It would appear that this test is inherent in determining the actual human health risk of swimming at particular sites. If this median test is to be applied then it should be included in the Attribute table.

Recommendation 9: That the test of compliance with a median of 130 E. coli per 100 ml is included in the Attribute Table for Human health for recreation E. coli of the National Policy Statement for Freshwater Management.

Cyanobacteria Attribute

Regional Public Health notes that “Safe to swim” assessments exclude benthic algae as a factor. We accept that the intermittent presence of cyanobacteria in rivers and swimming sites and the gaps in our knowledge of the causes limit undertaking a full risk assessment of particular rivers and swimming sites. The risk from benthic algae should continue to be managed through the provisions in the New Zealand Guidelines for Cyanobacteria.

APPENDIX 5 Monitoring Methodologies for Policy CB1

Regional Public Health believes that Appendix 5 is inconsistent with the provisions of the 2003 Microbiological Water Quality Guidelines in that it does not mention the erection of signage and does not specify what is intended by “notify the public”.

Regional Public Health believes that Appendix 5 relates to specific operational procedures whereby the National Policy Statement is best left to operate as a high level policy and objectives document. We recommend that a more appropriate mechanism would be to refer to the 2003 Microbiological Water Quality Guidelines for any operational response around follow-up sampling and notification.

Recommendation 10: That Appendix 5 address only monitoring frequency and that follow-up sampling and response for trigger levels be as per the recommendations of the “Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas” 2003 or equivalent document.