

# National Policy Statement for Freshwater Management

## Draft regional targets for swimmable rivers and lakes for the Taranaki region: March 2018

### Introduction

The *National Policy Statement for Freshwater Management* (NPS-FM) directs all regional councils (including unitary authorities) to set draft regional targets to improve the quality of fresh water so rivers are suitable for primary contact more often. Furthermore, the Taranaki Regional Council (the Council) is required to make draft regional targets available to the public by 31 March 2018, with final regional targets made available to the public by December 2018. This report has been prepared to meet these requirements.

“Primary contact” includes swimming, and means people’s contact with fresh water that involves immersion in the water. Being suitable for primary contact more often includes improvements in water quality from one nationally defined state to another (for example, orange to yellow, yellow to green, or green to blue).

A joint taskforce of central and local government representatives sought to use the best information available to model on a regional and national scale:

- The improvements that will be made to water quality in rivers and lakes under programmes that are planned or underway, on a region-by-region basis;
- When the anticipated water quality improvements will be achieved; and
- The likely costs of all interventions, and where these costs will fall.

The assumptions and limitations of the modelling approaches that have been taken are raised in the Taskforce’s report, e.g:

*“While there are areas where the science can be improved, for example, the ability to model all four criteria for E. coli results in rivers, it is unlikely these matters will be resolved over the next six months. The Taskforce felt that these uncertainties should not prevent councils making the best estimations possible with the tools and knowledge available to meet the deadline set in the NPS-FM.... changes between scenarios of the proportion of rivers in a given swimming grade can be considered more reliable than estimates of the absolute values of load...”<sup>1</sup>*

A report on these theoretical improvements and costs, presented region-by-region has been prepared and is currently undergoing some final editing. Officers have extracted key aspects of the report and included them in this report.

The NPS-FM has set a national target of swimmability that by 2030, 80% of all specified rivers and lakes shall be swimmable and by 2040, 90% of specified rivers and lakes shall be swimmable. The NPS-FM defines “specified rivers and lakes” as meaning rivers that are

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<sup>1</sup> From ‘Regional information for setting draft targets for swimmable lakes and rivers’ (March 2018). A report compiled by a joint taskforce of central and local government representatives.

fourth order or above and lakes with a perimeter of 1.5 kilometres or more. Each regional council is required to develop targets to demonstrate a regional contribution towards the national target.

## **Regional context and focus**

The joint taskforce has advised the Council that currently, overall swimmability for the Taranaki region is estimated as:

- 39% of rivers, and
- 97% of lakes.

This figure has been generated by the computer modelling undertaken on behalf of the taskforce. The Council was not involved in this modelling.

The regional priorities for the Taranaki region are to focus on interventions that will improve freshwater quality in the region. Good freshwater quality is one of the most important issues for the Council and has been since it was formed almost 30 years ago. The Council's policy position is clear: it is to maintain and enhance water quality in Taranaki's rivers and lakes.

Management interventions (whether regulatory or non-regulatory) over the last 30 years have become increasingly stringent, as each step of progress is made and as expectations rise. The Council has pursued this policy vigorously over the decades in the face of increasing demands and pressures being placed on our freshwater resources, even though indicators of stream health are showing significant gains in the Taranaki region.

The Council has an operative *Regional Fresh Water Plan for Taranaki* which is currently undergoing review. The Plan has a full suite of regulations to ensure discharges to water achieve the Plan's objectives. The Council has recently released its *Requirements for good farm management practices in Taranaki*, which are based on existing policy but which represent a tightening of the requirements to meet modern standards and changing community expectations. One of the initiatives being pursued by the Council is to have discharges of farm dairy effluent to water gradually phased out where it is practicable to do so, and replaced by discharge to land. This will be done as resource consents come up for renewal. The policy will see further improvements to water quality in Taranaki and will also be of benefit to farmers in the long run. Further extension and refinement of these requirements through the plan review process will ensure all sectors impacting on water quality adopt good management practices in relation to freshwater resources.

One of the major non-regulatory programmes being run by the Council is the Taranaki Riparian Management Programme. This is a wholly voluntary programme designed to address the effects on water quality of our agricultural sector, primarily dairy farming which is focused on the ring plain. This programme has been highly successful since it was first introduced in the early 1990s and has transformed the Taranaki landscape. It exceeds national regulatory requirements on a number of fronts, in both spatial scope and in the degree of stream-bank management interventions along each stretch.

Under the Taranaki Riparian Management Programme, 99.5% of dairy farms have a riparian plan in place. The programme covers 14,500 kilometres of stream bank. As at June 2017, 84.4% of plan holders have fenced their streams and over 70% have their streamside margins in suitable vegetative cover. Over 4.3 million plants have been supplied to plan holders.

Completion of fencing and planting is set for around the end of the decade, when it is intended that a compliance regime will be put in place via the *Fresh Water Plan* review process to ensure completion of the programme and to ensure its security into the future. It should be noted that the success of the Taranaki Riparian Management Programme has come about as a result of a substantial amount of collaborative work with stakeholders and the wider regional community to determine an appropriate and achievable completion and compliance regime suited to Taranaki conditions.

The Council released a draft *Freshwater and Land Management Plan for Taranaki* for pre-notification for comment in 2016. The draft plan builds on the Council's extensive experience in freshwater management and puts in place a management regime that takes account of national policy direction as expressed in the NPS-FM. It would establish freshwater management units and would set objectives and maximum in-stream concentrations for key water quality attributes.

The draft plan also contains rules requiring stock exclusion and riparian planting on land used for intensive pastoral farming, effluent discharge to land, wetland protection and forestry setback distances from waterways. It also contains schedules of outstanding freshwater bodies in the region and regionally significant freshwater and wetland species.

Following comments received on the draft, the Council is now carrying out further consultation and investigations, with the intention of notifying a proposed plan before 2020 which will include provisions that will look to give effect to recent (and proposed) amendments to national policy in the NPS-FM.

The Council has a comprehensive state of the environment monitoring programme which has been running since the mid-1990s. There are several freshwater quality monitoring programmes which form part of the region-wide state of the environment monitoring programme. The results from the programme are regularly reported to the Council. Every few years a more accessible public document written with a broader audience in mind, is produced and given wide public and media attention.

The results of all of our state of the environment monitoring show good to excellent water quality across most parameters measured compared with national guidelines, and that these are the best that the region has ever seen. Statistically robust trend analysis show improvements continue to be made over time. It should be noted that 'swimmability' in Taranaki's rivers is generally already good to very good where and when it matters – at recognised community swimming spots during summer. (The NPS-FM requires and measures swimmability all-year-round, under all flows and all river conditions).

These results reflect a serious level of financial commitment and prioritised engagement by resource users and the regional community at large.

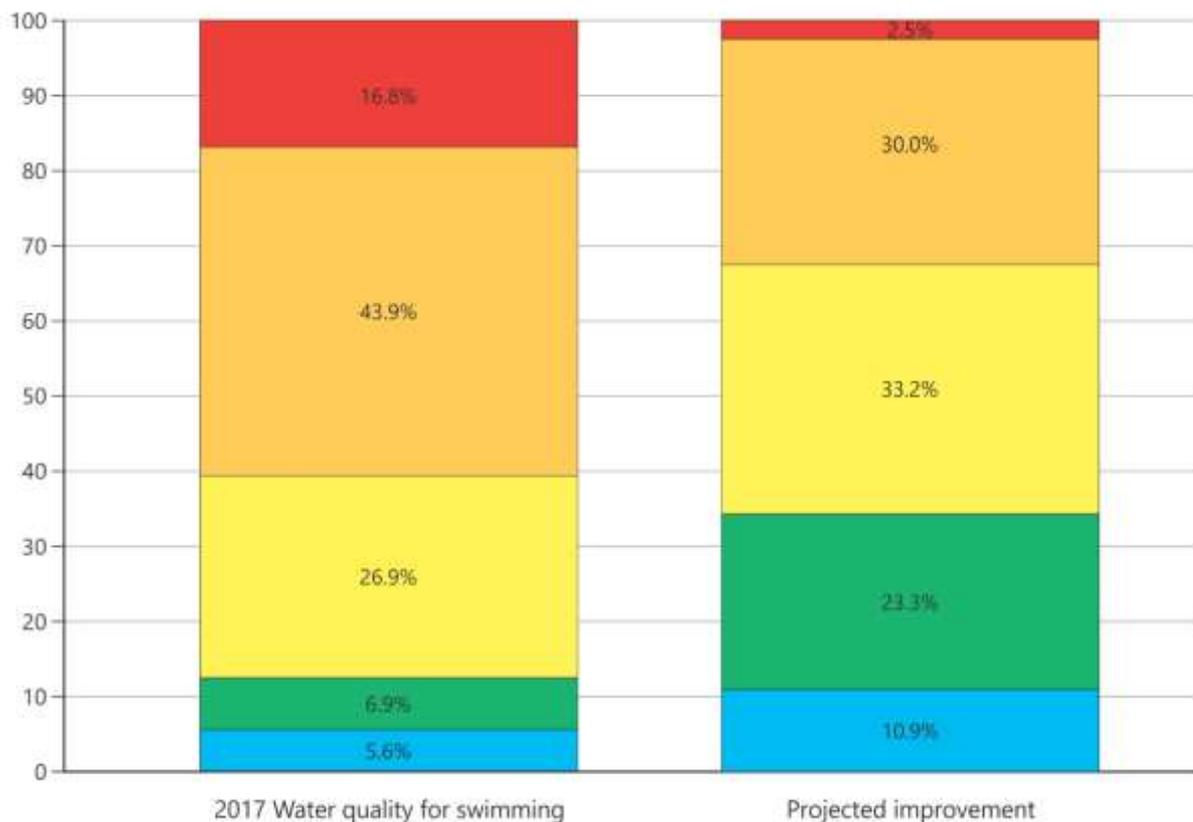
## **Draft regional targets**

### Draft regional targets (taskforce modelling projections)

The primary contact draft regional target for the Taranaki region based on the taskforce modelling of programmes already underway are for:

- 67.4% of rivers that are fourth order or larger to be in the blue, green or yellow category in terms of *E.coli* by 2030 (see Figure 1); and
- 97% of lakes with a perimeter of 1.5 kilometres or more to be in the blue, green or yellow category in terms of *E.coli* by 2030.

The change in the percentage of swimmable rivers in Taranaki as currently modelled by MfE is the greatest change that would occur in any region in New Zealand (an improvement of over 28% in absolute terms, to 67.4% from the 39% of rivers swimmable as currently modelled). In particular, the percentage of rivers in Taranaki currently assessed as rarely or never swimmable (16.8%) is modelled to reduce to just 2.5%, a relative reduction of 85%.



**Figure 1:** Projected improvement in water quality for swimming for Taranaki rivers<sup>2</sup>

Draft regional targets (Taranaki Regional Council projections)

The primary contact draft regional target for the Taranaki region based on the Council assessments of the swimmability benefits from programmes already underway are more conservative and are for:

- 50%-55% of rivers that are fourth order or larger to be in the blue, green or yellow category in terms of *E.coli* by 2030
- 97% of lakes with a perimeter of 1.5 kilometres or more to be in the blue, green or yellow category in terms of *E.coli* by 2030.

<sup>2</sup> As estimated by the Taskforce as at 2 March 2018, refer Document number 2022755.

### Discussion of assumptions and limitations of modelling and the setting of targets

The Council has expressed concerns that the Taskforce's report has critical flaws in methodology and quality. In particular, that the modelling that has been undertaken has not accurately represented and assessed the application of the NPS-FM 95th%ile *E. coli* criterion to above-median flow conditions, that the modelled costs of riparian planting in the Taranaki region underestimate the investment that Taranaki farmers are making in riparian management, that the reductions in annual *E. coli* loadings from diverting farm dairy effluent from rivers are over-stated, and that the costs of completing farm dairy effluent conversion to land irrigation are under-stated. MfE have indicated that the economic model for costs may be re-run prior to councils setting their final regional targets later in 2018.

The Council's view is that the MfE assumptions and inputs to the modelling are overly optimistic, especially around the anticipated water quality benefits of spreading dairy shed effluent on land instead of into treatment ponds which discharge to waterways. For example, the Council's data show that *E. coli* levels in rivers are actually higher in winter (when effluent ponds are not discharging fresh effluent with high *E. coli* counts) than under identical flow and weather conditions in summer (when ponds are discharging for some periods on most days). Two of the seven mid to low catchment monitoring sites are in catchments with minimal or no remaining pond discharges to water (Maketawa and Mangaehu), yet both these sites drop into the lowest (worst) category of swimmability grades under mid to higher flow conditions, whether in winter or summer. The Maketawa Stream carries a considerably higher bacterial concentration in winter under low flow conditions than it does in summer under the same conditions; under winter high flow conditions it drops to the lowest grade. Likewise, the Mangaehu River drops from the best category during winter low flow conditions, to the worst category under winter high flow conditions.

Council staff assessments of swimmability as determined by the NPS-FW, put the likely level of compliance on completion of proposed interventions at 50-55% of rivers rather than 67%. The Council believes that the 50-55% figure is a more realistic outcome to be expected, and is an appropriate target to be pursued. However, it should be noted that even with MfE's overly optimistic analysis, we will fall well short of what is required as a national average under the NPS-FM. This is despite the fact that through the Taranaki Riparian Management Programme the region is investing and doing far more than the NPS-FM requires and doing more than many other regions in New Zealand.

Since 1995, the percentage of Taranaki's ring plain streams fenced has risen from 50% to 85%, and the percentage planted has risen from 42% to 70%. Notwithstanding that while NIWA confirms a definite reduction in *E. coli* levels, the rate of compliance with NPS-FM targets has not changed over the same period (NIWA, in prep) due at least in part to the reality that peak concentrations of *E. coli* at peak flows are not reduced by such riparian interventions. Taking the above into account, regional gains in swimmability of some 25% in relative terms, from a current 39% (as modelled) to about 50%, is considered more credible than a relative gain of about 75% as is projected

Taking the national perspective, the taskforce report makes it clear that councils are spending far more than had been proposed as necessary by MfE when the swimmability provisions of the NPS-FM were promulgated, but with far less improvement in swimmability than MfE had proposed would be the case. The report suggests that nationally, swimmability will increase from the current 68.6% of rivers, to only 76.5% - delivering barely one-third of the increase needed to meet the national target.

The Council has commented on the modelling assumptions and parameters used by MfE which raise issues of concern with the value and applicability of the modelling across a number of inputs and assumptions. For example the input data reflected baseline rather than peak flow conditions, but from observation it is the latter that give rise to the highest concentrations of *E. coli*, the indicator bacteria that establishes 'swimmability'.

The Council has recently received a revised report from the taskforce charged with gathering regional information for setting draft targets for swimmable rivers and lakes but that report has not addressed the issues raised by the Council. The Council believes a fundamental review of the modelling work is required.

The Council has commissioned its own studies, utilising actual water quality and riparian management monitoring data from the last two decades. It is awaiting reports from NIWA and Dairy NZ that are intended to verify and validate, as distinct from modelling, the effectiveness of various methods of reducing *E.coli* in waterways. These will be considered further in developing the final regional targets required by 31 December 2018.

### **Regional process from here**

This report has been presented to the Council's Policy and Planning Committee. The responses to the draft targets will be considered alongside other feedback and input when finalising the regional targets by 31 December 2018.

The Council is committed to notifying a proposed *Freshwater and Land Management Plan for Taranaki* before 2020. The Council intends that the proposed plan will fully implement the NPS-FM. The NPS-FM however, provides for regional councils to fully implement the policy by 31 December 2025, or by 31 December 2030 if certain circumstances apply.

In the meantime the Council will continue to take positive action towards improving water quality for primary contact through the riparian management programme, the diversion of farm dairy effluent discharges to land and the adoption of good management practices to improve water quality across all sectors. The Council will continue to monitor water quality and report trends to the community. The Council will also continue to improve the suitability of fresh water for primary contact through attention to other contaminants (not just *E. coli*), for example water clarity and periphyton growths, and monitor and report flow rates and levels.