

NATIONAL POLICY STATEMENT

for Freshwater Management 2014

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Preamble

Fresh water is essential to New Zealand's economic, environmental, cultural and social well-being. Fresh water gives our primary production, tourism, and energy generation sectors their competitive advantage in the global economy. Fresh water is highly valued for its recreational aspects and it underpins important parts of New Zealand's biodiversity and natural heritage. Fresh water has deep cultural meaning to all New Zealanders. Many of New Zealand's lakes, rivers and wetlands are iconic and well known globally for their natural beauty and intrinsic values.

The Treaty of Waitangi (Te Tiriti o Waitangi) is the underlying foundation of the Crown-iwi/hapū relationship with regard to freshwater resources. Addressing tāngata whenua values and interests across all of the well-beings, and including the involvement of iwi and hapū in the overall management of fresh water, are key to meeting obligations under the Treaty of Waitangi.

All New Zealanders have a common interest in ensuring the country's freshwater lakes, rivers, aquifers and wetlands are managed wisely.

New Zealand faces challenges in managing our fresh water to provide for all of the values that are important to New Zealanders. The quality, health, availability and economic value of our fresh waters are under threat. These challenges are likely to increase over time due to the impacts of climate change.

To respond effectively to these challenges and issues we need to have a good understanding of our freshwater resources, the threats to them and provide a management framework that enables water to contribute both to New Zealand's economic growth and environmental integrity and provides for the values that are important to New Zealanders.

Given the vital importance of freshwater resources to New Zealand and New Zealanders, and in order to achieve the purpose of the Resource Management Act 1991 (the Act), the Crown recognises there is a particular need for clear central government policy to set a national direction, though the management of the resource needs to reflect the catchment-level variation between freshwater bodies and different demands on the resource across regions. This includes managing land use and development activities that affect fresh water so that growth is achieved with a lower environmental footprint.

This national policy statement sets out objectives and policies that direct local government to manage water in an integrated and sustainable way, while providing for economic growth within set water quantity and quality limits. The national policy statement is a first step to improve freshwater management at a national level.

As demand for fresh water increases, it is vital to account for all freshwater takes and sources of relevant contaminants. The freshwater accounting requirements of this national policy statement will provide information for councils to use in establishing freshwater objectives and limits and in targeting their management of fresh water.

This national policy statement provides a National Objectives Framework to assist regional councils and communities to more consistently and transparently plan for freshwater objectives. The national policy statement is intended to underpin community discussions about the desired state of fresh water relative to the current state. New Zealanders generally aspire to high standards

for our waterways and outcomes that are better than those achieved under the status quo. Freshwater planning will require an iterative approach that tests a range of possible objectives and methods for their achievement, including different timeframes for achieving objectives. This is intended to ensure that the implications of proposed objectives are clear for councils and communities.

The national policy statement sets national bottom lines for two compulsory values – ecosystem health and human health for recreation – and minimum acceptable states for other national values. The national policy statement acknowledges iwi and community values by recognising the range of iwi and community interests in fresh water, including environmental, social, economic and cultural values.

Freshwater objectives for a range of tāngata whenua values are intended to recognise Te Mana o te Wai. Iwi and hapū have a kinship relationship with the natural environment, including fresh water, through shared whakapapa. Iwi and hapū recognise the importance of fresh water in supporting a healthy ecosystem, including human health, and have a reciprocal obligation as kaitiaki to protect freshwater quality.

Overall freshwater quality within a region must be maintained or improved. This national policy statement allows some variability in terms of freshwater quality, including between freshwater management units, as long as the overall freshwater quality is maintained within a region.

National bottom lines in the national policy statement are not standards that must be achieved immediately. Where freshwater management units are below national bottom lines, they will need to be improved to at least the national bottom lines over time. It is up to communities and iwi to determine the pathway and timeframe for ensuring freshwater management units meet the national bottom lines. Where changes in community behaviours are required, adjustment timeframes should be decided based on the economic effects that result from the speed of change. Improvements in freshwater quality may take generations depending on the characteristics of each freshwater management unit.

Monitoring plans are intended to be practical and affordable. It is not possible for regional councils to monitor every drop of fresh water. Monitoring against freshwater objectives need only be undertaken at representative sites within a region as identified by regional councils. Monitoring plans are also intended to recognise the importance of long term trends in data.

Setting enforceable quality and quantity limits is a key purpose of this national policy statement. This is a fundamental step to achieving environmental outcomes and creating the necessary incentives to use fresh water efficiently, while providing certainty for investment. Water quality and quantity limits must reflect local and national values. The process for setting limits should be informed by the best available information and scientific and socio-economic knowledge.

Once limits are set, freshwater resources need to be allocated to users, while providing the ability to transfer entitlements between users so that we maximise the value we get from water. Where water resources are over-allocated (in terms of quality and quantity) to the point that national and local values are not met, we also need to ensure that over-allocation is reduced over agreed timeframes.

The New Zealand Coastal Policy Statement 2010 addresses issues with water quality in the coastal environment. The management of coastal water and fresh water requires an integrated and consistent approach.

Review

The Minister for the Environment intends to seek an independent review of the implementation and effectiveness of this national policy statement in achieving all its objectives and policies and in achieving the purpose of the Act, no later than 1 July 2016. The Minister shall then consider the need to review, change or revoke this national policy statement. Collection of monitoring data to inform this review will begin at least two years prior to the review.

This preamble may assist the interpretation of the national policy statement.

National significance of fresh water and Te Mana o te Wai

This national policy statement is about recognising the national significance of fresh water for all New Zealanders and Te Mana o te Wai.

A range of community and tāngata whenua values, including those identified as appropriate from Appendix 1, may collectively recognise the national significance of fresh water and Te Mana o te Wai as a whole. The aggregation of community and tāngata whenua values and the ability of fresh water to provide for them over time recognises the national significance of fresh water and Te Mana o te Wai.

Title

This national policy statement is the National Policy Statement for Freshwater Management 2014.

Commencement

This national policy statement will take effect 28 days after the date of its issue by notice in the New Zealand Gazette.

Interpretation

In this national policy statement:

“**Attribute**” is a measurable characteristic of fresh water, including physical, chemical and biological properties, which supports particular values.

“**Attribute state**” is the level to which an attribute is to be managed for those attributes specified in Appendix 2.

“**Compulsory values**” mean the national values relating to ecosystem health and to human health for recreation included in Appendix 1 and for which a non-exhaustive list of attributes is provided in Appendix 2.

“**Efficient allocation**” includes economic, technical and dynamic efficiency.

“**Environmental flows and/or levels**” are a type of limit which describes the amount of water in a freshwater management unit (except ponds and naturally ephemeral water bodies) which is required to meet freshwater objectives. Environmental flows for rivers and streams must include an allocation limit and a minimum flow (or other flow/s). Environmental levels for other freshwater management units must include an allocation limit and a minimum water level (or other level/s).

“**Existing freshwater quality**” means the quality of the fresh water at the time the regional council commences the process of setting or reviewing freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4.

“**Freshwater management unit**” is the water body, multiple water bodies or any part of a water body determined by the regional council as the appropriate spatial scale for setting freshwater objectives and limits and for freshwater accounting and management purposes.

“**Freshwater objective**” describes an intended environmental outcome in a freshwater management unit.

“**Freshwater quality accounting system**” means a system that, for each freshwater management unit, records, aggregates and keeps regularly updated, information on the measured, modelled or estimated:

- a) loads and/or concentrations of relevant contaminants;
- b) sources of relevant contaminants;
- c) amount of each contaminant attributable to each source; and
- d) where limits have been set, proportion of the limit that is being used.

“Freshwater quantity accounting system” means a system that, for each freshwater management unit, records, aggregates and keeps regularly updated, information on the measured, modelled or estimated:

- a) total freshwater take;
- b) proportion of freshwater taken by each major category of use; and
- c) where limits have been set, proportion of the limit that has been taken.

“Freshwater take” is a take of ground or surface fresh water whether authorised or not.

“Limit” is the maximum amount of resource use available, which allows a freshwater objective to be met.

“Minimum acceptable state” is the minimum level, specified in Appendix 2, at which a freshwater objective may be set in a regional plan in order to provide for the associated national value.

“National bottom line” means the minimum acceptable state for the compulsory values as specified in Appendix 2.

“National value” means any value described in Appendix 1.

“Naturally occurring processes” means processes that could have occurred in New Zealand prior to the arrival of humans.

“Outstanding freshwater bodies” are those water bodies identified in a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values.

“Over-allocation” is the situation where the resource:

- a) has been allocated to users beyond a limit; or
- b) is being used to a point where a freshwater objective is no longer being met.

This applies to both water quantity and quality.

“Secondary contact” means people’s contact with fresh water that involves only occasional immersion and includes wading or boating (except boating where there is high likelihood of immersion).

“Target” is a limit which must be met at a defined time in the future. This meaning only applies in the context of over-allocation.

“Value” means:

- a) any national value; and
- b) includes any value in relation to fresh water, that is not a national value, which a regional council identifies as appropriate for regional or local circumstances (including any use value).

Terms given meaning in the Act have the meanings so given.

A. Water quality

Objective A1

To safeguard:

- a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and
- b) the health of people and communities, at least as affected by secondary contact with fresh water;

in sustainably managing the use and development of land, and of discharges of contaminants.

Objective A2

The overall quality of fresh water within a region is maintained or improved while:

- a) protecting the significant values of outstanding freshwater bodies;
- b) protecting the significant values of wetlands; and
- c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

Policy A1

By every regional council making or changing regional plans to the extent needed to ensure the plans:

- a) establish freshwater objectives in accordance with Policies CA1-CA4 and set freshwater quality limits for all freshwater management units in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:
 - i. the reasonably foreseeable impacts of climate change;
 - ii. the connection between water bodies; and
 - iii. the connections between freshwater bodies and coastal water; and
- b) establish methods (including rules) to avoid over-allocation.

Policy A2

Where freshwater management units do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory), in a way that considers the sources of relevant contaminants recorded under Policy CC1, to assist the improvement of water quality in the freshwater management units, to meet those targets, and within a defined timeframe.

Policy A3

By regional councils:

- a) imposing conditions on discharge permits to ensure the limits and targets specified pursuant to Policy A1 and Policy A2 can be met; and
- b) where permissible, making rules requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

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

By every regional council amending regional plans (without using the process in Schedule 1) to the extent needed to ensure the plans include the following policy to apply until any changes under Schedule 1 to give effect to Policy A1 and Policy A2 (freshwater quality limits and targets) have become operative:

- “1. *When considering any application for a discharge the consent authority must have regard to the following matters:*
 - a. *the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and*
 - b. *the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.*
2. *When considering any application for a discharge the consent authority must have regard to the following matters:*
 - a. *the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and*
 - b. *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 secondary contact with fresh water resulting from the discharge would be avoided.*
3. *This policy applies to the following discharges (including a diffuse discharge by any person or animal):*
 - a. *a new discharge or*
 - b. *a change or increase in any discharge –*
of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.
4. *Paragraph 1 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.*
5. *Paragraph 2 of this policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 takes effect.”*

B. Water quantity

Objective B1

To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water.

Objective B2

To avoid any further over-allocation of fresh water and phase out existing over-allocation.

Objective B3

To improve and maximise the efficient allocation and efficient use of water.

Objective B4

To protect significant values of wetlands and of outstanding freshwater bodies.

Policy B1

By every regional council making or changing regional plans to the extent needed to ensure the plans establish freshwater objectives in accordance with Policies CA1-CA4 and set environmental flows and/or levels for all freshwater management units in its region (except ponds and naturally ephemeral water bodies) to give effect to the objectives in this national policy statement, having regard to at least the following:

- a) the reasonably foreseeable impacts of climate change;
- b) the connection between water bodies; and
- c) the connections between freshwater bodies and coastal water.

Policy B2

By every regional council making or changing regional plans to the extent needed to provide for the efficient allocation of fresh water to activities, within the limits set to give effect to Policy B1.

Policy B3

By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.

Policy B4

By every regional council identifying methods in regional plans to encourage the efficient use of water.

Policy B5

By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.

Policy B6

By every regional council setting a defined timeframe and methods in regional plans by which over-allocation must be phased out, including by reviewing water permits and consents to help ensure the total amount of water allocated in the freshwater management unit is reduced to the level set to give effect to Policy B1.

Policy B7 and direction (under section 55) to regional councils

By every regional council amending regional plans (without using the process in Schedule 1) to the extent needed to ensure the plans include the following policy to apply until any changes under Schedule 1 to give effect to Policy B1 (allocation limits), Policy B2 (allocation), and Policy B6 (over-allocation) have become operative:

- “1. *When considering any application the consent authority must have regard to the following matters:*
 - a. *the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem and*
 - b. *the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.*
2. *This policy applies to:*
 - a. *any new activity and*
 - b. *any change in the character, intensity or scale of any established activity –*

that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).
3. *This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.”*

C. Integrated management

Objective C1

To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment.

Policy C1

By every regional council managing fresh water and land use and development in catchments in an integrated and sustainable way, so as to avoid, remedy or mitigate adverse effects, including cumulative effects.

Policy C2

By every regional council making or changing regional policy statements to the extent needed to provide for the integrated management of the effects of the use and development of:

- a) land on fresh water, including encouraging the co-ordination and sequencing of regional and/or urban growth, land use and development and the provision of infrastructure; and
- b) land and fresh water on coastal water.

CA. National Objectives Framework

Objective CA1

To provide an approach to establish freshwater objectives for national values, and any other values, that:

- a) is nationally consistent; and
- b) recognises regional and local circumstances.

Policy CA1

By every regional council identifying freshwater management units that include all freshwater bodies within its region.

Policy CA2

By every regional council applying the following processes in developing freshwater objectives for all freshwater management units:

- a) considering all national values and how they apply to local and regional circumstances;
- b) identifying the values for each freshwater management unit, which
 - i. must include the compulsory values; and
 - ii. may include any other national values or other values that the regional council considers appropriate (in either case having regard to local and regional circumstances);
- c) identifying:
 - i. for the compulsory values or any other national value for which relevant attributes are provided in Appendix 2:
 - A. the attributes listed in Appendix 2 that are applicable to each value identified under Policy CA2(b) for the freshwater body type; and
 - B. any other attributes that the regional council considers appropriate for each value identified under Policy CA2(b) for the freshwater body type; and
 - ii. for any national value for which relevant attributes are not provided in Appendix 2 or any other value, the attributes that the regional council considers appropriate for each value identified under Policy CA2(b) for the freshwater body type;
- d) for those attributes specified in Appendix 2, assigning an attribute state at or above the minimum acceptable state for that attribute;
- e) formulating freshwater objectives:
 - i. in those cases where an applicable numeric attribute state is specified in Appendix 2, in numeric terms by reference to that specified numeric attribute state; or
 - ii. in those cases where the attribute is not listed in Appendix 2, in numeric terms

where practicable, otherwise in narrative terms; and

- iii. on the basis that, where an attribute applies to more than one value, the most stringent freshwater objective for that attribute is adopted; and
- f) considering the following matters at all relevant points in the process described in Policy CA2(a)-(e):
- i. the current state of the freshwater management unit, and its anticipated future state on the basis of past and current resource use;
 - ii. the spatial scale at which freshwater management units are defined;
 - iii. the limits that would be required to achieve the freshwater objectives;
 - iv. any choices between the values that the formulation of freshwater objectives and associated limits would require;
 - v. any implications for resource users, people and communities arising from the freshwater objectives and associated limits including implications for actions, investments, ongoing management changes and any social, cultural or economic implications;
 - vi. the timeframes required for achieving the freshwater objectives, including the ability of regional councils to set long timeframes for achieving targets; and
 - vii. such other matters relevant and reasonably necessary to give effect to the objectives and policies in this national policy statement, in particular Objective A2.

Policy CA3

By every regional council ensuring that freshwater objectives for the compulsory values are set at or above the national bottom lines for all freshwater management units, unless the existing freshwater quality of the freshwater management unit is already below the national bottom line and the regional council considers it appropriate to set the freshwater objective below the national bottom line because:

- a) the existing freshwater quality is caused by naturally occurring processes; or
- b) any of the existing infrastructure listed in Appendix 3 contributes to the existing freshwater quality.

Policy CA4

A regional council may set a freshwater objective below a national bottom line on a transitional basis for the freshwater management units and for the periods of time specified in Appendix 4.

CB. Monitoring plans

Objective CB1

To provide for an approach to the monitoring of progress towards, and the achievement of, freshwater objectives.

Policy CB1

By every regional council developing a monitoring plan that:

- a) establishes methods for monitoring progress towards, and the achievement of, freshwater objectives established under Policies CA1-CA4;
- b) identifies a site or sites at which monitoring will be undertaken that are representative for each freshwater management unit; and
- c) recognises the importance of long-term trends in monitoring results.

CC. Accounting for freshwater takes and contaminants

Objective CC1

To improve information on freshwater takes and sources of freshwater contaminants, in order to:

- a) ensure the necessary information is available for freshwater objective and limit setting and freshwater management under this national policy statement; and
- b) ensure information on resource availability is available for current and potential resource users.

Policy CC1

By every regional council:

- a) establishing and operating a freshwater quality accounting system and a freshwater quantity accounting system for those freshwater management units where they are setting or reviewing freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4; and
- b) maintaining a freshwater quality accounting system and a freshwater quantity accounting system at levels of detail that are commensurate with the significance of the freshwater quality and freshwater quantity issues, respectively, in each freshwater management unit.

Policy CC2

By every regional council taking reasonable steps to ensure that information gathered in accordance with Policy CC1 is available to the public, regularly and in a suitable form, for the freshwater management units where they are setting or reviewing, and where they have set or reviewed, freshwater objectives and limits in accordance with Policy A1, Policy B1, and Policies CA1-CA4.

Objective CC1 and Policies CC1 and CC2 will take effect 24 months from the date of entry into effect of the National Policy Statement for Freshwater Management 2014.

D. Tāngata whenua roles and interests

Objective D1

To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

Policy D1

Local authorities shall take reasonable steps to:

- a) involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;
- b) work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and
- c) reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region.

E. Progressive implementation programme

Policy E1

- a) This policy applies to the implementation by a regional council of a policy of this national policy statement.
- b) Every regional council is to implement the policy as promptly as is reasonable in the circumstances, and so it is fully completed by no later than 31 December 2025.
- ba) A regional council may extend the date in Policy E1(b) to 31 December 2030 if it considers that:
 - i. meeting that date would result in lower quality planning; or
 - ii. it would be impracticable for it to complete implementation of a policy by that date.
- c) Where a regional council is satisfied that it is impracticable for it to complete implementation of a policy fully by 31 December 2015, the council may implement it by a programme of defined time-limited stages by which it is to be fully implemented by 31 December 2025 or 31 December 2030 if Policy E1(ba) applies.
- d) Any programme of time-limited stages is to be formally adopted by the council by 31 December 2015 and publicly notified.
- e) Where a regional council has adopted a programme of staged implementation, it is to publicly report, in every year, on the extent to which the programme has been implemented.
- f) Any programme adopted under Policy E1 c) of the National Policy Statement for Freshwater Management 2011 by a regional council is to be reviewed, revised if necessary, and formally adopted by the regional council by 31 December 2015, and publically notified.

APPENDIX 1: National values and uses for fresh water

COMPULSORY NATIONAL VALUES

Te Hauora o te Wai / the health and mauri of water

Ecosystem health – The freshwater management unit supports a healthy ecosystem appropriate to that freshwater body type (river, lake, wetland, or aquifer).

In a healthy freshwater ecosystem ecological processes are maintained, there is a range and diversity of indigenous flora and fauna, and there is resilience to change.

Matters to take into account for a healthy freshwater ecosystem include the management of adverse effects on flora and fauna of contaminants, changes in freshwater chemistry, excessive nutrients, algal blooms, high sediment levels, high temperatures, low oxygen, invasive species, and changes in flow regime. Other matters to take into account include the essential habitat needs of flora and fauna and the connections between water bodies. The health of flora and fauna may be indicated by measures of macroinvertebrates.

Te Hauora o te Tangata / the health and mauri of the people

Human health for recreation – As a minimum, the freshwater management unit will present no more than a moderate risk of infection to people when they are wading or boating or involved in similar activities that involve only occasional immersion in the water. Other contaminants or toxins, such as toxic algae, would not be present in such quantities that they would harm people's health.

In freshwater management units where a community values more frequent immersion in the water such as swimming, white-water rafting, or water skiing, the risk of infection will be no more than moderate. In some freshwater management units, the risk of infection to people undertaking any activity would be no greater than what would exist there under natural conditions.

ADDITIONAL NATIONAL VALUES

Te Hauora o te Taiao / the health and mauri of the environment

Natural form and character – Where people value particular natural qualities of the freshwater management unit.

Matters contributing to the natural form and character of a freshwater management unit are its visual and physical characteristics that are valued by the community, including its flow regime, colour, clarity, morphology or location. They may be freshwater management units with exceptional, natural, and iconic aesthetic features.

Mahinga kai / food gathering, places of food

Mahinga kai – Kai are safe to harvest and eat.

Mahinga kai generally refers to indigenous freshwater species that have traditionally been used as food, tools, or other resources. Mahinga kai provide food for the people of the rohe and these sites give an indication of the overall health of the catchment.

For this value, kai would be safe to harvest and eat and knowledge transfer is present (intergenerational harvest). In freshwater management units that are highly valued for providing mahinga kai, the desired species are plentiful enough for long-term harvest and the range of desired species is present across all life stages.

Mahinga kai – Kei te ora te mauri (the mauri of the place is intact).

For this value, freshwater resources would be available and able to be used for customary use at some places (but not everywhere). In freshwater management units that are highly valued for providing mahinga kai, resources would be available for use, customary practices able to be exercised to the extent desired, and tikanga and preferred methods are able to be practised.

Fishing – The freshwater management unit supports fisheries of species allowed to be caught and eaten.

For freshwater management units valued for fishing, the numbers of fish would be sufficient and suitable for human consumption. In some areas, fish abundance and diversity would provide a range in species and size of fish, and algal growth, water clarity and safety would be satisfactory for fishers. Attributes will need to be specific to fish species such as salmon, trout, eels, lamprey, or whitebait.

Mahi māra / cultivation

Irrigation and food production – The freshwater management unit meets irrigation needs for any purpose.

Water quality and quantity would be suitable for irrigation needs, including supporting the cultivation of food crops, the production of food from domesticated animals, non-food crops such as fibre and timber, pasture, sports fields and recreational areas. Attributes will need to be specific to irrigation and food production requirements.

Animal drinking water – The freshwater management unit meets the needs of stock.

Water quality and quantity would meet the needs of stock, including whether it is palatable and safe.

Wai Tapu / Sacred Waters

Wai tapu – Wai tapu represent the places where rituals and ceremonies are performed.

Rituals and ceremonies include, but are not limited to, tohi (baptism), karakia (prayer), waerea (protective incantation), whakatapu (placing of raahui), whakanoa (removal of raahui), and tuku iho (gifting of knowledge and resources for future generations).

In providing for this value, the wai tapu would be free from human and animal waste, contaminants and excess sediment, with valued features and unique properties of the wai protected to some extent. Other matters that may be important are that identified catchments have integrity (there is no artificial mixing of the wai tapu) and identified taonga in the wai are protected.

Wai Māori / municipal and domestic water supply

Water supply – The freshwater management unit can meet people's potable water needs.

Water quality and quantity would enable domestic water supply to be safe for drinking with, or in some areas without, treatment.

Āu Putea / economic or commercial development

Commercial and industrial use – The freshwater management unit provides economic opportunities to people, businesses and industries.

Water quality and quantity can provide for commercial and industrial activities. Attributes will need to be specific to commercial or industrial requirements.

Hydro-electric power generation – The freshwater management unit is suitable for hydro electric power generation.

Water quality and quantity and the physical qualities of the freshwater management unit, including hydraulic gradient and flow rate, can provide for hydro-electric power generation.

He ara haere / navigation

Transport and tauranga waka – The freshwater management unit is navigable for identified means of transport.

Transport and tauranga waka generally refers to places to launch waka and water craft, and appropriate places for waka to land (tauranga waka).

Water quality and quantity in the freshwater management unit would provide for navigation. The freshwater management unit may also connect places and people including for traditional trails and rites of passage, and allow the use of various craft.

APPENDIX 2: Attribute tables

| | | | |
|-----------------------------|--|----------------|--|
| Value | Ecosystem health | | |
| Freshwater Body Type | Lakes | | |
| Attribute | Phytoplankton (Trophic state) | | |
| Attribute Unit | mg/m ³ (milligrams chlorophyll-a per cubic metre) | | |
| Attribute State | Numeric Attribute State | | Narrative Attribute State |
| | Annual Median | Annual Maximum | |
| A | ≤2 | ≤10 | Lake ecological communities are healthy and resilient, similar to natural reference conditions. |
| B | >2 and ≤5 | >10 and ≤25 | Lake ecological communities are slightly impacted by additional algal and plant growth arising from nutrients levels that are elevated above natural reference conditions. |
| C | >5 and ≤12 | >25 and ≤60 | Lake ecological communities are moderately impacted by additional algal and plant growth arising from nutrients levels that are elevated well above natural reference conditions. |
| National Bottom Line | 12 | 60 | |
| D | >12 | >60 | Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state, due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes. |

| | | | |
|-----------------------------|--|---------------|--|
| Value | Ecosystem health | | |
| Freshwater Body Type | Lakes | | |
| Attribute | Total Nitrogen (Trophic state) | | |
| Attribute Unit | mg/m ³ (milligrams per cubic metre) | | |
| Attribute State | Numeric Attribute State | | Narrative Attribute State |
| | Annual Median | Annual Median | |
| | Seasonally Stratified and Brackish* | Polymictic | |
| A | ≤160 | ≤300 | Lake ecological communities are healthy and resilient, similar to natural reference conditions. |
| B | >160 and ≤350 | >300 and ≤500 | Lake ecological communities are slightly impacted by additional algal and plant growth arising from nutrients levels that are elevated above natural reference conditions. |
| C | >350 and ≤750 | >500 and ≤800 | Lake ecological communities are moderately impacted by additional algal and plant growth arising from nutrients levels that are elevated well above natural reference conditions |
| National Bottom Line | 750 | 800 | |
| D | >750 | >800 | Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state, due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes. |

* Intermittently closing and opening lagoons (ICOLs) are not included in brackish lakes.

| | | |
|-----------------------------|--|--|
| Value | Ecosystem health | |
| Freshwater Body Type | Lakes | |
| Attribute | Total Phosphorus (Trophic state) | |
| Attribute Unit | mg/m ³ (milligrams per cubic metre) | |
| Attribute State | Numeric Attribute State | Narrative Attribute State |
| | Annual Median | |
| A | ≤10 | Lake ecological communities are healthy and resilient, similar to natural reference conditions. |
| B | >10 and ≤20 | Lake ecological communities are slightly impacted by additional algal and plant growth arising from nutrients levels that are elevated above natural reference conditions. |
| C | >20 and ≤50 | Lake ecological communities are moderately impacted by additional algal and plant growth arising from nutrients levels that are elevated well above natural reference conditions. |
| National Bottom Line | 50 | |
| D | >50 | Lake ecological communities have undergone or are at high risk of a regime shift to a persistent, degraded state, due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes. |

| | | | |
|-----------------------------|---|---|---|
| Value | Ecosystem health | | |
| Freshwater Body Type | Rivers | | |
| Attribute | Periphyton (Trophic state) | | |
| Attribute Unit | mg chl-a/m ² (milligrams chlorophyll-a per square metre) | | |
| Attribute State | Numeric Attribute State (Default Class) | Numeric Attribute State (Productive Class¹) | Narrative Attribute State |
| | Exceeded no more than 8% of samples ² | Exceeded no more than 17% of samples ² | |
| A | ≤50 | ≤50 | Rare blooms reflecting negligible nutrient enrichment and/or alteration of the natural flow regime or habitat. |
| B | >50 and ≤120 | >50 and ≤120 | Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat. |
| C | >120 and ≤200 | >120 and ≤200 | Periodic short-duration nuisance blooms reflecting moderate nutrient enrichment and/or alteration of the natural flow regime or habitat. |
| National Bottom Line | 200 | 200 | |
| D | >200 | >200 | Regular and/or extended-duration nuisance blooms reflecting high nutrient enrichment and/or significant alteration of the natural flow regime or habitat. |

1. Classes are streams and rivers defined according to types in the River Environment Classification (REC). The Productive periphyton class is defined by the combination of REC “Dry” Climate categories (i.e. Warm-Dry (WD) and Cool-Dry (CD)) and REC Geology categories that have naturally high levels of nutrient enrichment due to their catchment geology (i.e. Soft-Sedimentary (SS), Volcanic Acidic (VA) and Volcanic Basic (VB)). Therefore the productive category is defined by the following REC defined types: WD/SS, WD/VB, WD/VA, CD/SS, CD/VB, CD/VA. The Default class includes all REC types not in the Productive class.

2. Based on a monthly monitoring regime. The minimum record length for grading a site based on periphyton (chl-a) is 3 years.

| | | | |
|-----------------------------|---|--|---|
| Value | Ecosystem health | | |
| Freshwater Body Type | Rivers | | |
| Attribute | Nitrate (Toxicity) | | |
| Attribute Unit | mg NO ₃ -N/L (milligrams nitrate-nitrogen per litre) | | |
| Attribute State | Numeric Attribute State | | Narrative Attribute State |
| | Annual Median | Annual 95th Percentile | |
| A | ≤1.0 | ≤1.5 | High conservation value system. Unlikely to be effects even on sensitive species |
| B | >1.0 and ≤2.4 | >1.5 and ≤3.5 | Some growth effect on up to 5% of species. |
| C | >2.4 and ≤6.9 | >3.5 and ≤9.8 | Growth effects on up to 20% of species (mainly sensitive species such as fish). No acute effects. |
| National Bottom Line | 6.9 | 9.8 | |
| D | >6.9 | >9.8 | Impacts on growth of multiple species, and starts approaching acute impact level (ie risk of death) for sensitive species at higher concentrations (>20 mg/L) |

| | | | |
|-----------------------------|--|------------------------|---|
| Value | Ecosystem health | | |
| Freshwater Body Type | Lakes and rivers | | |
| Attribute | Ammonia (Toxicity) | | |
| Attribute Unit | mg NH ₄ -N/L (milligrams ammoniacal-nitrogen per litre) | | |
| Attribute State | Numeric Attribute State | | Narrative Attribute State |
| | Annual Median* | Annual Maximum* | |
| A | ≤0.03 | ≤0.05 | 99% species protection level: No observed effect on any species tested |
| B | >0.03 and ≤0.24 | >0.05 and ≤0.40 | 95% species protection level: Starts impacting occasionally on the 5% most sensitive species |
| C | >0.24 and ≤1.30 | >0.40 and ≤2.20 | 80% species protection level: Starts impacting regularly on the 20% most sensitive species (reduced survival of most sensitive species) |
| National Bottom Line | 1.30 | 2.20 | |
| D | >1.30 | >2.20 | Starts approaching acute impact level (ie risk of death) for sensitive species |

* Based on pH 8 and temperature of 20°C.

Compliance with the numeric attribute states should be undertaken after pH adjustment.

| | | | |
|-----------------------------|---|--|--|
| Value | Ecosystem health | | |
| Freshwater Body Type | Rivers (below point sources) | | |
| Attribute | Dissolved Oxygen | | |
| Attribute Unit | mg/L (milligrams per litre) | | |
| Attribute State | Numeric Attribute State | | Narrative Attribute State |
| | 7-day mean minimum ¹ (Summer Period: 1 November to 30th April) | 1-day minimum ² (Summer Period: 1 November to 30th April) | |
| A | ≥8.0 | ≥7.5 | No stress caused by low dissolved oxygen on any aquatic organisms that are present at matched reference (near-pristine) sites. |
| B | ≥7.0 and <8.0 | ≥5.0 and <7.5 | Occasional minor stress on sensitive organisms caused by short periods (a few hours each day) of lower dissolved oxygen. Risk of reduced abundance of sensitive fish and macroinvertebrate species. |
| C | ≥5.0 and <7.0 | ≥4.0 and <5.0 | Moderate stress on a number of aquatic organisms caused by dissolved oxygen levels exceeding preference levels for periods of several hours each day. Risk of sensitive fish and macroinvertebrate species being lost. |
| National Bottom Line | 5.0 | 4.0 | |
| D | <5.0 | <4.0 | Significant, persistent stress on a range of aquatic organisms caused by dissolved oxygen exceeding tolerance levels. Likelihood of local extinctions of keystone species and loss of ecological integrity. |

1. The mean value of 7 consecutive daily minimum values.
2. The lowest daily minimum across the whole summer period.

| Value | Human health for recreation | | |
|----------------------|---|-----------------------------|---|
| Freshwater Body Type | Lakes and rivers | | |
| Attribute | <i>E. coli</i> * | | |
| Attribute Unit | <i>E. coli</i> /100 mL (number of <i>E. coli</i> per hundred millilitres) | | |
| Attribute State | Numeric Attribute State | Sampling Statistic | Narrative Attribute State |
| A | ≤260 | Annual median | People are exposed to a very low risk of infection (less than 0.1% risk) from contact with water during activities with occasional immersion and some ingestion of water (such as wading and boating) |
| | | 95 th percentile | People are exposed to a low risk of infection (up to 1% risk) when undertaking activities likely to involve full immersion. |
| B | >260 and ≤540 | Annual median | People are exposed to a low risk of infection (less than 1% risk) from contact with water during activities with occasional immersion and some ingestion of water (such as wading and boating). |
| | | 95 th percentile | People are exposed to a moderate risk of infection (less than 5% risk) when undertaking activities likely to involve full immersion. 540 / 100ml is the minimum acceptable state for activities likely to involve full immersion. |
| C | >540 and ≤1000 | Annual median | People are exposed to a moderate risk of infection (less than 5% risk) from contact with water during activities with occasional immersion and some ingestion of water (such as wading and boating). People are exposed to a high risk of infection (greater than 5% risk) from contact with water during activities likely to involve immersion. |
| National Bottom Line | 1000 | Annual median | |
| D | >1000 | Annual median | People are exposed to a high risk of infection (greater than 5% risk) from contact with water during activities with occasional immersion and some ingestion of water (such as wading and boating). |

*Escherichia coli

| | | |
|-----------------------------|--|---|
| Value | Human health for recreation | |
| Freshwater Body Type | Lakes and lake fed rivers | |
| Attribute | Cyanobacteria - Planktonic | |
| Attribute Unit | Biovolume - mm ³ /L (cubic millimetres per litre) OR Cell Count - cells/mL (cells per millilitre) | |
| Attribute State | Numeric Attribute State | Narrative Attribute State |
| | 80th percentile* | |
| A | <p>≤0.5 mm³/L biovolume equivalent for the combined total of all cyanobacteria OR</p> <p>≤500 cells/mL of total cyanobacteria</p> | Risk exposure from cyanobacteria is no different to that in natural conditions (from any contact with fresh water). |
| B | N/A | |
| C | <p>>0.5 and ≤1.8 mm³/L biovolume equivalent of potentially toxic cyanobacteria OR</p> <p>>0.5 and ≤10 mm³/L total biovolume of all cyanobacteria</p> | Low risk of health effects from exposure to cyanobacteria (from any contact with fresh water). |
| National Bottom Line | <p>1.8 mm³/L Biovolume equivalent of potentially toxic cyanobacteria OR</p> <p>10 mm³/L total biovolume of all cyanobacteria</p> | |
| D | Biovolume equivalent of >1.8 mm ³ /L of potentially toxic cyanobacteria OR >10 mm ³ /L total biovolume of all cyanobacteria | Potential health risks (eg, respiratory, irritation and allergy symptoms) exist from exposure to cyanobacteria (from any contact with fresh water). |

* The 80th percentile must be calculated using a minimum of 12 samples collected over 3 years. 30 samples collected over 3 years is recommended.

APPENDIX 3: Existing infrastructure for the purposes of Policy CA3(b)

[Editor's note: This appendix is currently empty.]

APPENDIX 4: Freshwater management units and periods of time for transition under Policy CA4

[Editor's note: This appendix is currently empty.]